

**EFFECT OF LIQUIDITY MANAGEMENT ON THE FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

BY

JOSHUA MAJAKUSI

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of a Degree in Master of Business Administration of the University of Nairobi.**

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DECLARATION

I declare that this project is our original work and has not been presented to any other University or College for the award of a Degree

Signed.....

Date.....

Joshua Majakusi

D61/73201/2012

This project has been submitted with my approval as the university supervisor.

Signed.....

Date.....

Dr. Sifujo Kisaka,

Lecturer, Department of Finance and Accounting

School of Business, University of Nairobi

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ACRONYMS AND ABBREVIATIONS

| | |
|-------------|-----------------------------|
| CBK | Central Bank of Kenya |
| CMA | Capital Markets Authority |
| GDP | Gross Domestic Product |
| MFBs | Microfinance Banks |
| NSE | Nairobi Securities Exchange |
| ROA | Return on Assets |
| ROE | Return on Equity |
| ROI | Return on Investment |
| SSEs | Small-Scale Enterprises |

ABSTRACT

This study determined the effects of liquidity management on the performance of commercial banks. The study applied a descriptive research design. The sample period was from 2010 to 2014. This study used secondary data that was obtained from the CBK. A regression model was used in data analysis. The findings are that there were fluctuations in financial performance while liquidity management and capital adequacy registered a steady growth. This shows that banks manage their liquid assets well to satisfy customers' demands for cash. Moreover, commercial banks have the ability to absorb reasonable operational and functional losses without risking the institutions' stability. Furthermore, the management of the commercial banks had the ability to meet the need for additional cash. The study found that ROA and liquidity management are positively correlated. This relationship is also statistically significant. This means sufficient cash causes good financial results. Furthermore, the study showed that liquidity management explains 34% in the variability achieved financial returns. These findings are similar to those of existing empirical literature (Olongo, 2013; Wanjohi, 2013; Kavale, 2016). However, the results contradicts the findings of Bassey (2015), Molefe and Muzindutsi (2016) and Vintila and Nenu (2016) who found a negative relationship between the two variables.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The recent financial crisis in the banking industry in Kenya is attributed to poor liquidity management (Sahudin, Abdullah, & Tukiman, 2012). To cite an example, it led to the collapse of two large banks in the economy the Dubai Bank and the Imperial bank of Kenya while many other institutions in the economy merged for a financial backing (Rickards, 2014). Commercial banks had to borrow a total of Sh17.4 billion in from the Central Bank's overnight window to shore up their reserves as a liquidity management crisis hit the banking industry. The average cost of borrowing between banks (inter-bank rate) had raised 52 basis points to 5.97 per cent, as liquidity management in the money market contracted.

Liquidity management is inversely related to the performance banks (Bassey, 2015). A liquidity management crisis was evident in Global financial crisis of 2007–08 (Dullien, 2010). This was the worst financial crisis raising fundamental questions about liquidity management (Basel Committee on Banking Supervision, 2013). During the crisis banks were hit hardest by liquidity management pressures cutting back sharply (Basel Committee on banking supervision, 2013). Major commercial banks like Lehman Brothers collapsed. Other banks were bailed out by the governments. The impact on the stock market was very severe as stocks shed prices (Basel Committee on Banking Supervision, 2013). In many areas the economy faced a huge financial blow, resulting in house evictions, foreclosures and prolonged unemployment (Basel Committee on Banking Supervision, 2013). The crisis underscored the role of liquidity management to commercial banks (Basel Committee on Banking Supervision, 2013).

Very liquid assets have low risk and hence a low return. Therefore, must trade-off risk and return on liquidity (Basel Committee on Banking Supervision, 2016). In absence of regulation it is expected that banks hold liquid assets to the extent they aid in maximizing the firm's financial performance (Basel Committee on Banking Supervision, 2016). Beyond this policy maker has to impose on banks to hold larger liquid assets example. In

Kenya every banks have to deposit mandatorily cash amounting to Sh15 billion with the Central Bank of Kenya (CBK) as a reserve (Alemayehu & Ndung'u, 2012). This ensures the stability of the overall financial system (Alemayehu & Ndung'u, 2012).

1.1.1 Liquidity Management

Liquidity management is the capacity of banks to meet its short-term financial obligations (Saunders & Cornett, 2005). Liquidity mis-management is mainly caused by a mismatch between assets and liabilities of commercial banks. This arises from maturity mismatch or refinancing risk (Saunders & Cornett, 2005).

The indicators of poor liquidity management are a fall in asset prices, inadequate debt, low marketability of assets (Saunders & Cornett, 2005). Many commercial banks as a result face the challenge of reduced profitability (Molefe and Muzindutsi, 2016).

It is against this background that liquidity management is regarded as the life blood of the economy and in its absence financial markets cease to function efficiently profitability (Molefe and Muzindutsi, 2016). Persistent liquidity management constraints in the Kenyan economy have resulted in reduced public confidence in the banking sector as well as increased financial disintermediation (Alemayehu & Ndung'u, 2012).

In summary for many existing commercial banks, the above costs and liquidity management combined with the impact of other regulatory changes has forced changes in business model and organizational structure of commercial banks (Alemayehu & Ndung'u, 2012).

1.1.2 Performance of Commercial Banks

The efficiency of commercial banks is crucial to the Kenyan economy (Alemayehu & Ndung'u, 2012). There are many determinants of financial performance. The main function of banks is to intermediate between savers and borrowers (Saunders & Cornett, 2005). Banks mobilize customer deposits which they lend out to borrowers as loans (Saunders & Cornett, 2005). Banks depend on their reputation and credibility to inspire confidence in savers and borrowers (Saunders & Cornett, 2005).

1.1.3 Liquidity Management and Performance of Commercial Banks

Commercial banks in Kenya that have faced a number of liquidity management problems have reported poor financial performance (Alemayehu & Ndung'u, 2012). Poor liquidity management affect earnings and capital. In extreme cases it leads to insolvency and bank failure (Alemayehu & Ndung'u, 2012). Distressed banks can only access funds from the market at high interest rate (Alemayehu & Ndung'u, 2012). This eventually causes a decline in the banks' earnings. Moreover, a bank's further borrowing to meet depositors' demand may place the bank's capital at stake (Alemayehu & Ndung'u, 2012).

However, a bank may ration credit if it feels that the liquidity management need of the bank is quite poor. Therefore, poor liquidity management reduces the capacity of the bank to effectively compete (Chaplin *et al.*, 2000).

1.1.4 Commercial Banking Industry in Kenya

Banks are regulated with various legislations such as the Companies Act and the Banking Act, (CBK). There are 43 commercial banks (CBK, 2015). The Central Bank ensures that all commercial banks are properly managed and observe the minimum liquidity management ratios and cash reserve ratios.

Kenya has a comparatively high relative ratio of banks to the total population in Africa. The main innovations in banking are credit information sharing, agency banking, and the mobile banking.

1.3 Problem Statement

Commercial banks have experienced huge financial losses due to poor liquidity management (Vintila and Nenu, 2016). Thus poor liquidity management in the banks poses major liquidity management which adversely affects their capital structure and earnings. If not properly managed, liquidity management may lead to severe consequences in the institution (Marozva, 2015).

Banks wholly depend on deposits made by their clients and most of their operations are carried out through the deposits (Vintila and Nenu, 2016). In a situation where all the depositors withdraw their cash from the accounts, the bank is likely to face a liquidity management trap. This may lead to borrowing funds from the central bank or other banks at a very high cost due to high interest charges (Vintila and Nenu, 2016). Due to this problem commercial banks have tried to ensure that they hold adequate funds at all times so that they are able to meet the demand of their depositor's. However, maintaining this amount of funds in the organizations has proved extremely expensive. This is due to the fact that the banks have to maintain large mandatory cash reserve of 15 billion in their accounts. This may not only lead to the loss of revenue but also high opportunity costs associated with holding large amounts of cash. Generally, the main cause of liquidity management in these institutions is a mismatch between the assets and the liabilities. This is measured using the maturity mismatch gap. The larger the funding gap the higher the probability of a liquidity management crisis.

Many studies have examined the effects of liquidity management on the performance of banks (Banks, 2005; Ruozi and Ferrari, 2012). According to Banks (2005), poor liquidity management reduces the financial performance of an institution. However, the default rate is the main determinant of the financial performance of a bank. Ruozi and Ferrari (2012) added that most of the financial institutions, especially the banks, have failed due to increased poor liquidity management. With poor liquidity management banks and other financial institutions have to borrow at very high rates, thus increasing the cost of banks.

Maina (2011) studied this issue among oil companies in Kenya. The results showed that liquidity management has no effect on the firm's profitability. Moreover, Kweri (2011) examined the same problem among manufacturing firms. There is no study done so far on the effect of liquidity management on the performance of commercial banks. Therefore, this study aims at filling this gap by answering the following question: How does liquidity management affect the financial performance of commercial banks?

1.4 Objective of the Study

The objective of this was to determine the effect of liquidity management on the financial performance of commercial banks in Kenya.

1.5 Value of the Study

The recent crisis has revealed the importance of sound financial firm's liquidity management. Regulators and policy makers in response are devising new ways of making commercial banks stable. Findings of study are essential to financial institutions managers and industrial practitioners as they can use it to improve their effectiveness in the asset liability match as well as ensure the maintenance of adequate levels of liquidity management in the institutions.

It also aims at shedding more light to policy makers, governing bodies, regulators, and liquidity management department of financial institutions; those to be informed about liquidity management and how they affect the performance of financial institutions. The study also adds to scholarly knowledge and further helps other academicians who want to study in detail the effects of liquidity management on financial institution performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is a review literature. Section 3.2 presents the theoretical framework. Section 2.3 discusses the determinants of financial performance. Section 2.4 is the review of empirical literature. Section 2.5 presents the conceptual framework. Lastly, section 2.6 is the summary of the literature review.

2.2 Theoretical Framework

This section reviews the theories that underpin this study. These are the Liquidity Preference Theory, the Shiftability Theory, the Anticipated Income Theory and the Loanable Funds Theory.

2.2.1 Liquidity Management Preference Theory

This theory was put forward by John Maynard Keynes (2011). Liquidity preference refers to the amount of money the public is willing to hold given the interest rate. Keynes argued that there are three reasons for holding liquid assets. First, they act as ordinary transactions, second they act as a precaution against a rainy day, and third they are used for speculative purposes.

Keynes showed that transaction deposits vary inversely with the rate of interest. The main argument in this theory is that at very low interest rate, an increase in the money supply does not encourage people investment but instead increases cash balances. The reason is that people expect the interest rate to rise later.

2.2.2 Shiftability Theory of Liquidity Management

Shiftability theory, developed by Bhattacharyya (2011), states that the level of defensible financial institution liquidity management is having possession or investing in legal capital capable of shifting solely to other investments in obtaining liquid equipment. Loan for instance becomes secondary back up while secondary back up shifts to become primary back up. This means Shiftability theory suggests that financial institutions should give credit paid with notification before they apply for commercial paper pawn.

According to this theory banks maintain liquidity if they hold assets that are marketable. During a liquidity crisis such assets are easily converted into cash. Thus this theory contends that shiftability, or marketability or transferability of bank assets is a basis for ensuring good liquidity management.

Supposing when there are no hard cash, financial institutions tend to sell pawn goods on loan aiming to obtain adequate cash. The friction happens because collateral which is illiquid turns into liquid. Besides this they also often sell marketable securities like super common stock. As a result, the shiftability theory is comprehended to give description and confidence of management of financial institutions until certain degree of removable asset possession in condition is needed to fulfill liquidity management.

2.2.3 Liability Management Theory of Liquidity Management

This theory focuses on financial institutions issuing liabilities to meet liquidity management needs (Lee & Lee, 2006). There is a close relationship between liquidity management and liability management.

There are two aspects of liquidity management. First, is the buildup of a prudential level of liquid assets to control risk (Lee & Lee, 2006). Second, is the management of customer deposits to meet their demand for cash (Lee & Lee, 2006). But imprudent borrowing can cause a crisis if debt holders lose confidence in the bank.

2.3 Determinants of Financial Performance of Firms

The determinants of financial performance are summarized by CAMEL (capital adequacy, asset quality, management efficiency, earnings performance, and liquidity management). It not only analyses the ROA and ROE but also other ratios touching on various aspects of bank operations (Kongiri, 2012). In line with its acronym, the model applies 20 financial ratios to assess various elements within its framework and pre-determined industry benchmarks to determine the financial soundness of financial institution, with a rating of one (1) for the best and a rating of five (5) for the worst (Waithaka, 2013).

2.3.1 Capital Adequacy

The functions of capital in banks include incentives function and risk sharing function. Capital adequacy is the ability of a commercial bank to withstand abnormal losses (Saunders and Cornett, 2005). Due to the debt-like nature of liabilities in financial institutions, they tend to shifting risk or substitution of assets. To avoid this, regulators require them to hold a minimum capital to assets to reduce their sensitivity to risk (Kongiro, 2012; Saunders and Cornett, 2005).

2.3.2 Asset Quality

Asset quality comes from the concept of proper management of a financial institution asset (Saunders and Cornett, 2005). They offer loans and expect that the principal amount be paid within a certain period. Asset Quality is a measure of the probability that the loan is either paid or not. It is measured using credit risk (Saunders and Cornett, 2005). The failure of a debtor to pay a loan enhances the credit risk of a financial institution and thus reduces its asset quality. The ratio of net non-performing loans to the gross loans is used to measure asset quality.

Furthermore, Molyneux *et al.*, (2007) noted that the various pointers to the deterioration in the asset value could be through using ratios such as earnings assets to total assets and the provisioning of gross advance ratios.

2.3.3 Management Quality

Management quality in financial institutions may not be easily measured using financial ratios as the effects and processes are qualitative (Saunders and Cornett, 2005). The role of management in financial institutions ensures the smooth operations of activities, day-to-day handling of risks, and the role of stewardship. The agency problem manifests itself in the managing of financial institutions where managers put their personal goals first rather than maximizing shareholder value. Tools such as total expenses to total income and operating expenses to total expenses ratios could be used to assess management quality (Chen *et al.*, 2009).

2.3.4 Earnings Performance

The earnings and profitability of a financial institution shows its ability to persistently generate income to increase its own funds and reserves and settle its debt obligations. Furthermore, the stream of income to be used to capture a larger market share and seize other opportunities (Kumar, 2006).

The historical source of generating earnings by financial institutions is through interest-earning activities, that is, lending. However, over the years, financial institutions have realized income and fees from other innovative activities (Kumar, 2007). The tools for assessing financial institution earnings and profit levels include ROA, ROE and the NIM. These ratios are analyzed periodically to ascertain whether performance is increasing or decreasing (Nyathira, 2012).

2.3.5 Liquidity Management and its Management

Dang (2012) correctly argues that adequate level of liquidity management is positively related to profitability. Managers usually face the tough balancing act of ensuring that funds are available to cater for withdrawals.

Saunders and Cornett (2005) noted that liquid assets to liquid liabilities ratio can be used to measure a bank's liquidity management.

2.4 Empirical Literature Review

There are a number of scholarly studies conducted both internationally and domestically, regarding the same.

2.4.1 International Evidence

According to the studies carried out by Raheman and Mohamed (2007) found that the following factors determine the performance of an institution: cash conversion cycle, net trade cycle, and inventory turnover in days. From their findings, profitability of the financial institutions can only be increased through proper management and financing of working capital.

Dong and Su (2010) concluded that two factors are affected by working capital management in the financial institution. These are the cash conversion cycle and the debtor's collection period. It was found that relationships among these variables were strongly negative.

In a study carried out by Macaulay (1988) to investigate the effectiveness of liquidity management risk management best practices in the United States reported that over 70% of the financial institutions have adopted the best practices in the country. There has been an increased concern regarding effective credit risk management due to the fact that inadequate credit risk policies are the main source of vital problems in most of the financial institutions. An effective credit risk management policy must therefore aim at maximizing an institution's rate of return.

Nazir and Afza (2009) found a negative relationship between profitability and working capital financing policies. Firms with aggressive policies have lower ROA than those with conservative policies.

2.4.2 Local Studies.

Tianwei and Paul (2006) examined the relationship between liquidity management and financial performance. Lenders aim at improving their credit risk management. The interest of the internal management was to understand the financial impacts of alternative strategic decisions. The data was then analyzed using a Z-score model, which was applied to institution accounting data for the detection of operating and financial management. The results of this analysis showed that credit risk management significantly led to financial performance of financial institutions.

Mathuva (2009) found a negative relationship between ROA and the institutions cash collection period. He also found a positive relationship between ROA and inventory turnover and the payables deferral period. Oludhe (2011), on the other hand, found that CAMEL components positively affect the financial performance of an institution.

In a study conducted by Ravi and Sharma (2011) analyzed 31 banks over a period of eleven years (2001-2011) comparing the profitability ratio to the above parameters. They found that CAMEL negatively impacts on banks' financial performance.

Nyanga (2012) studied all the 43 commercial banks in Kenya by December 2011. He collected his data over a period of ten years (2001 to 2010) from Banking Survey and the Central Bank of Kenya. The study then carried out a descriptive analysis, correlation analysis and regression analysis to analyze the data. It found that there was a negative correlation between capital adequacy, exchange rates and ROE. On the other hand, liquidity management, operating cost efficiency, size, risk, GDP, and inflation had a positive impact on ROE. Furthermore, the exchange rate was negatively related with ROA while capital adequacy, liquidity management, operating cost efficiency, size, risk, GDP, and inflation had positive effects on ROA.

Berríos (2013) showed that prudent lending and net interest margin are negatively related. The assessment of current liquidity management practices of the financial institutions, such as commercial banks, by Wanjohi (2013), found a positive relationship between liquidity management and financial performance.

Olongo (2013) found that the performance of banks and other financial institutions is significantly affected by liquidity management ratios and fraud loss. Thus, there is a positive correlation between ROA and liquidity management ratios and fraud loss. This implies that financial fraud loss and liquidity management ratios had a strong and significant influence of financial performance of financial institutions, for example banks, in Kenya for the period considered.

2.5 Conceptual Framework

This study is based on the following conceptual model.

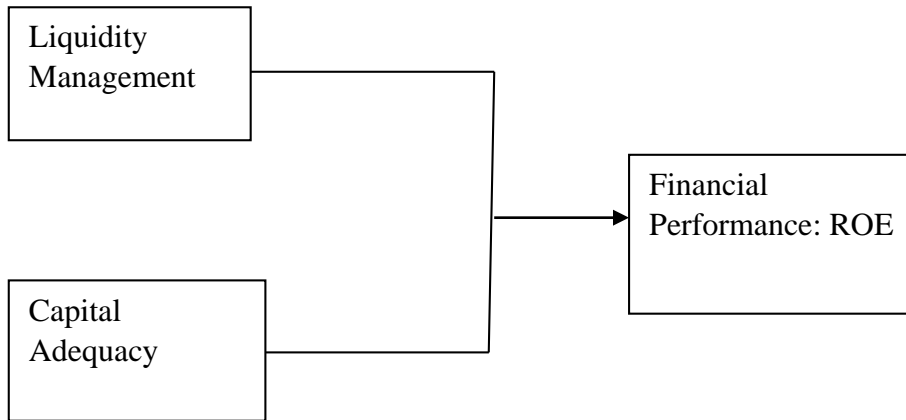


Figure 1: Conceptual Framework

2.6 Summary of Literature Review

The literature review shows that liquidity management is likely to expose a firm to great financial losses in a situation where the firm fails to take precautionary measures such as maintaining a proper match between assets and liabilities. Therefore, firms should balance between liquidity management through implementing proper financial management practices in investing and risk management. The empirical evidence has also demonstrated a direct relationship exists between liquidity management and financial performance. Hence, there is need for all financial institutions to practice prudent risks management in order to protect the interests of investors. Therefore, this study aimed establishing the effect of liquidity management on performance of banks in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research methodology that was used in this study is explained in this chapter. The research design is discussed in section 3.2. The population and sample of the study are explained in section 3.3 discusses. Section 3.4 explains. Data that was employed in the study is explained in Data analysis techniques are presented in section 3.5.

3.2 Research Design

This study used descriptive research design. He/she can only report what has happened or what is happening. It involves the description of the relationship between variables (Morgan, 2007).

The strength of this design lies in its ability to enable the researcher to use various forms of data as well as incorporating his experience in analyzing relationships between variables.

3.3 Population of the Study

The population of this study consists of the 43 Commercial Banks as at 2ND August 2016.

This study used the census approach where the entire population of forty three commercial banks was analyzed for the period 2010 to 2013.

3.4 Data Collection

The main source of the data was annual reports submitted to the Central Bank of Kenya. The nature of the data is quantitative. The sample consisted of all banks that had been in operation from 2010 to 2015.

The data collected included the liquidity management gap, total non-performing loans, total cash and cash equivalents, and total customer deposits.

3.5 Data Analysis

This section presents the analytical model and the diagnostic tests.

3.5.1 Empirical Model

The study the model below to achieve the objective of this study:

$$Y_{it} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \quad (1)$$

Y_{it} = Return on Assets (ROA) ratio (Profit before Tax to Total Assets (TA))

X_1 = Liquidity management is measured using cash and cash equivalents as a proportion of TA

X_2 = Capital Adequacy (Equity to Net Assets Ratio)

β_0 = constant term of the model

β_i = coefficients of the model, $i=1,2$

ε = error term

3.5.2 Diagnostic Tests

The study used the F-test and the t-test at 5% significance level. The computed statistics were compared to the critical values. If the critical value exceeds the computed statistic then the coefficient is not significant. Hence, the null hypothesis H_0 is accepted otherwise H_0 is rejected. The study also used the t -test to test for the statistical significance of the individual coefficients.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis, results and discussion of the study findings. Data used in this study is described in section 4.2. The correlation between liquidity management and performance is in section 4.3. The discussion of findings is in section 4.4. The summary of the findings is in section 4.5.

4.2 Summary Statistics

This section presents the description of the data that was used in this study.

4.2.1 Return on Asset

The study sought to establish how financial institutions liquidity management impacts on their financial performance. Financial performance was measured using Return on Asset (ROA). The study period was from January 2011 to December 2014. Table 4.1 displays the results of the study.

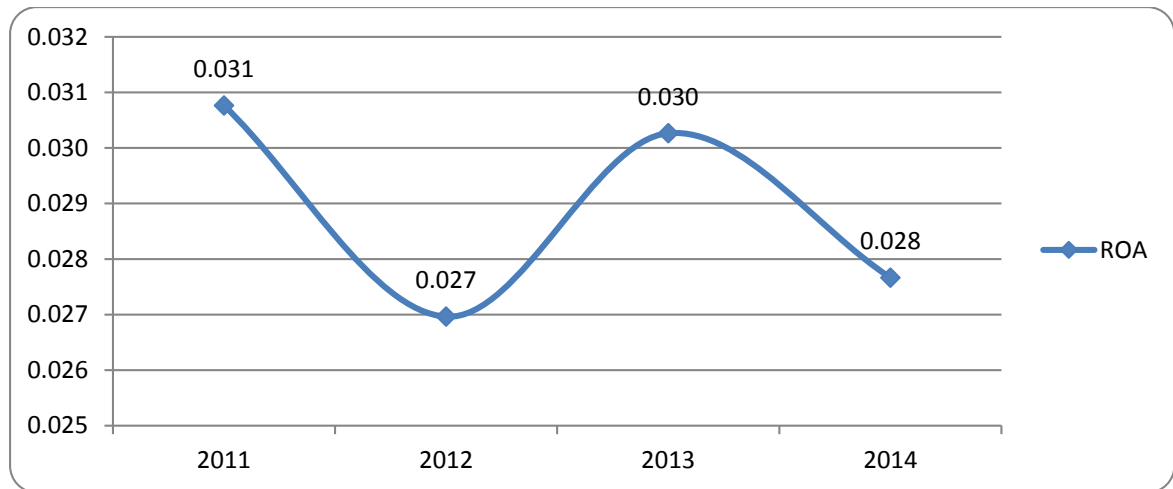
Table 4.1: Descriptive Statistics for Return on Asset (ROA)

| Year | 2011 | 2012 | 2013 | 2014 |
|-------------|-------------|-------------|-------------|-------------|
| Mean | 0.031 | 0.027 | 0.030 | 0.028 |
| Std. Dev. | 0.025 | 0.041 | 0.031 | 0.030 |

Source: Author's computations (2016)

The results indicate that financial performance of commercial banks was fluctuating over the sample period. The highest financial performance of (Mean = 0.031, SD = 0.025) was in 2011. This was followed by the year 2013 with a return on asset of (Mean = 0.030, SD = 0.031). The poorest financial performance was in the year 2012 as indicated by a ROA of (Mean = 0.027, SD = 0.041). The recorded standard deviation indicates that there were fluctuations in financial performance among financial institutions in Kenya over the study period. The trend in financial performance is as depicted by Figure 4.1.

Figure 4.1: The Variability of ROA of Commercial Banks in Kenya, 2011 - 2014



Source: Author's computations

4.2.2 Capital Adequacy

Capital adequacy ratio is used to as an indicator of banks financial strengths in terms of withstanding operational and functional losses without jeopardizing customer's deposits and overall banks stability. The results of the study are as shown in table 4.2.

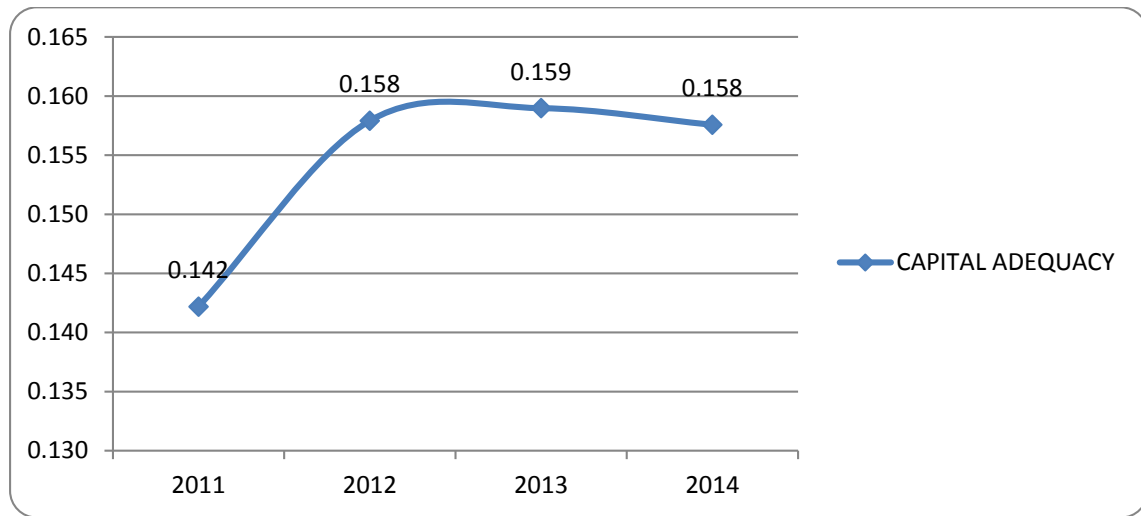
Table 4.2: Descriptive Statistics for Capital Adequacy

| Year | 2011 | 2012 | 2013 | 2014 |
|-------------|-------------|-------------|-------------|-------------|
| Mean | 0.142 | 0.158 | 0.159 | 0.158 |
| Std. Dev. | 0.049 | 0.066 | 0.048 | 0.039 |

Source: Author's computations

The results show that there was an increase in capital adequacy of the commercial banks from 2011 to 2012 then it leveled-off for the rest of the years. The year 2011 recorded the lowest capital adequacy ratio of (M = 0.142, SD = 0.049) while the year 2013 recorded the highest capital adequacy ratio of (M = 0.159, SD = 0.048). This implies that that the ability of the commercial banks in Kenya to absorb reasonable operational and functional losses without risking the institutions' stability had been improving over the study period. It also implies that the management of the commercial banks in Kenya had the ability to meet the need for additional capital. The trend of this improvement in capital adequacy is as illustrated by Figure 4.2.

Figure 4.2: Variability in Capital Adequacy of Commercial Banks in Kenya, 2011 - 2012



Source: Author’s computations

4.2.3 Liquidity Management

Liquidity management is an indicator of the commercial bank ability to depositors’ demands for cash. A bank with enough liquid assets is said to be well managed. In this study, liquidity management was measured in terms of cash and cash equivalents. Table 4.3 presents the descriptive statistics.

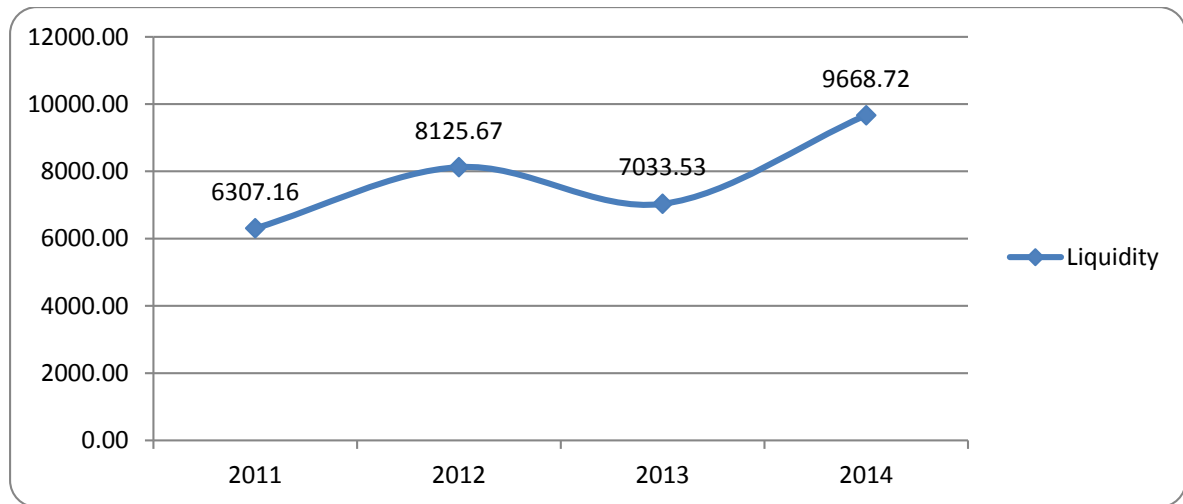
Table 4.3: Descriptive Statistics for Commercial Banks Cash, 2011 - 2014

| Year | 2011 | 2012 | 2013 | 2014 |
|-------|-----------|-----------|----------|-----------|
| Mean | 6,307.16 | 8,125.67 | 7,033.53 | 9,668.72 |
| STDEV | 10,549.67 | 11,715.09 | 9,182.59 | 13,280.13 |

Source: Author’s computations

The results show that there was a steady increase in cash and cash equivalents of the commercial banks over the study period except in the year 2013. The increase started from a low of Kshs. 6,307.16 millions in 2011 to a high of Kshs. 9,668.72 millions. The huge standard deviations recorded indicated that there were significant variations in the liquidity management of the commercial banks over the study period. The trend in of the changes in liquidity management of the firms over the study period is as shown in Figure 4.3.

Figure 4.3: Variability in Liquidity management of Commercial Banks in Kenya



Source: Author's computations

4.3 Liquidity Management and Financial Performance

This section presents the results of estimating the relationship between the study variables.

4.3.1 Results of Model Goodness of Fit Test

Table 4.4 displays the results of the model goodness of fit test.

Table 4.4: Results of R² and Adjusted R²

| Model | R | R ² | Adjusted R ² | S.E. |
|-------|-------------------|----------------|-------------------------|------|
| 1 | .594 ^a | .353 | .341 | .026 |

a. Predictors: (Constant), Liquidity management, Capital Adequacy

Source: Author's computations. S.E. is the standard error.

The results indicate that there is a strong and positive ($R = 0.594$) relationship between liquidity management and financial performance. Moreover, the results indicated that the value of the adjusted R-squared was 0.341. This implies that liquidity management accounts for 34% of financial performance. The remaining 66% is attributed to other factors.

4.3.2 Results of ANOVA

Table 4.5 shows the results of analysis of variance (ANOVA).

Table 4.5: Results of Regression and Residual Sum of Squares

| | SS | df | MS | F | Sig. |
|---|------|-----|------|--------|-------------------|
| Regression | .040 | 2 | .020 | 29.233 | .001 ^a |
| Residual | .072 | 107 | .001 | | |
| Total | .112 | 109 | | | |
| a. Predictors: (Constant), Liquidity management, Capital Adequacy | | | | | |
| b. Dependent Variable: Financial Performance (ROA) | | | | | |

Source: Author's computations. Note: SS = Sum of Squares, MS = Mean Square.

The results show that the model explained only 0.040 out of the total 0.112 variation in the dependent variable. The F-statistic is significant at 95% confidence interval.

4.3.3 The Estimated Model

Table 4.6 shows the results of the estimated model.

Table 4.6: Results of the Estimated Model

| | UC | | SC | t | Sig. |
|--|-------|------------|------|----------|------|
| | B | Std. Error | Beta | | |
| (Constant) | -.073 | .017 | | -4.182 | .000 |
| Liquidity management | .029 | .004 | .592 | 7.439*** | .000 |
| Capital Adequacy | .008 | .050 | .013 | .161 | .873 |
| a. Dependent Variable: Financial Performance (ROA) | | | | | |

Source: Author's computations Note:***Significant at 1% level. UC = Unstandardized Coefficients, SC = Standardized Coefficients.

The results indicate that liquidity management has a positive and significant effect on financial performance (t -values (3.371), $p < 0.001$). However, capital adequacy has a positive but statistically insignificant effect. This shows that though both liquidity management and capital adequacy have a positive effect on the financial performance, liquidity management is crucial. The constant term = -0.073. This implies that if liquidity

management is zero, financial performance of commercial banks would be -0.073. This implies that if liquidity management of the commercial banks in Kenya is zero, then the financial performance of the institutions would be dismal at -7.3%. A unit increase in liquidity management would lead to an increase in ROA by 0.029 while a unit increase in capital adequacy would lead to rise in ROA by 0.008.

4.4 Discussion

The results of data analyses show that there is a positive relationship between liquidity management and financial performance. The results indicated that liquidity management explains 34% of the variability in financial performance. This means that 66% of the changes in financial performance are due to other factors not included in the model.

The findings of this study are similar to those of Olongo (2013), Wanjohi (2013) and Kavale (2016). The assessment of liquidity management practices of the commercial banks by Wanjohi (2013) found a direct relationship between liquidity management and financial performance. Also Olongo (2013) found that the performance of commercial banks is significantly affected by liquidity management ratios. The study found a positive correlation between ROA and liquidity management ratios. However, the results contradict those of Bassey (2015), Molefe and Muzindutsi (2016) and Vintila and Nenu (2016) who found a negative relationship between the two variables.

4.5 Summary

This study found a positive relationship between liquidity management and financial performance of the commercial banks in Kenya. Therefore, improvement in liquidity management increases financial performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary and conclusions of the study on the effects of liquidity management on the performance of commercial banks in Kenya. The summary of the study is in section 5.2. Conclusions are presented in section 5.3. The limitations of the study are discussed in section 5.4. Recommendations for further research are found in section 5.6.

5.2 Summary of the Study

The objective in this study was to analyze the relationship between liquidity management and financial performance. The study employed descriptive research design. The sample period was from 2010 to 2014. The study employed secondary data from the Central Bank of Kenya. The data was obtained from the Central Bank of Kenya.

The results showed that over the study period, there were fluctuations in financial performance while liquidity management and capital adequacy registered a steady growth. This shows that the commercial banks are managing their liquid assets well. Moreover, commercial banks have the ability to absorb reasonable operational and functional losses without risking the institutions' stability. Furthermore, the management of the commercial banks had the ability to meet the need for additional cash. The results indicated that there is a positive correlation between ROA and liquidity management.

The study found a statistically significant positive relationship between liquidity management and financial performance of the commercial banks in Kenya. This implies that an improvement in liquidity management leads to a rise in financial performance. Furthermore, the study showed that liquidity management accounts for 34% of the variability in financial performance of the commercial banks. Therefore, liquidity management is a very important aspect of bank management.

The findings of this study are similar to those of existing empirical literature (Olongo, 2013; Wanjohi, 2013; Kavale, 2016). The assessment of current liquidity management practices of the commercial banks by Wanjohi (2013) showed that there was a direct

relationship between liquidity management and financial performance. Also Olongo (2013) found that the performance of commercial banks is significantly affected by liquidity management ratios. The study established there is a positive correlation between ROA and liquidity management ratios. However, the results contradict those of Bassey (2015), Molefe and Muzindutsi (2016) and Vintila and Nenu (2016) who found a negative relationship between the two variables.

5.3 Conclusions

From the results of data analyses this study draws the following conclusions. First, an increase in liquidity management leads to increase in financial performance. Second, liquidity management is a very important aspect of bank management.

5.4 Limitations of the Study

First, it was not possible to get data on financial performance and liquidity management from all the commercial banks. The financial statements of all the banks were readily available. Only twenty eight commercial banks were included in this study.

Second, the study mainly used secondary data. Therefore, the quality of the results depends on the quality of data that were available.

5.5 Recommendations for Further Research

Further research is required that covers all commercial banks and a longer sample period. A comparative study could yield more insight into the liquidity management and profitability nexus. This could help settle the conflicting findings from diverse study contexts.

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APPENDIX I: LIST OF COMMERCIAL BANKS IN KENYA

KBA Members as at 31st December 2015:

1. African Banking Corp. Ltd
2. Bank of Africa Kenya Ltd
3. Bank of India
4. Bank of Baroda (K) Ltd
5. Barclays Bank of Kenya Ltd
6. CfC Stanbic Bank Ltd
7. Chase Bank (K) Ltd
8. Citibank N.A.
9. Commercial Bank of Africa Ltd
10. Consolidated Bank of Kenya Ltd
11. Co-operative Bank of Kenya Ltd
12. Credit Bank Ltd
13. Development Bank (K) Ltd
14. Diamond Trust Bank (K) Ltd
15. Dubai Bank Ltd
16. Ecobank Limited
17. Equatorial Commercial Bank Ltd
18. Equity Bank Ltd
19. Family Bank Ltd
20. Faulu Bank
21. Fidelity Commercial Bank Ltd
22. Fina Bank Ltd
23. First Community Bank Ltd
24. Giro Commercial Bank Ltd
25. Guardian Bank Ltd
26. Gulf African Bank Ltd
27. Habib Bank A.G. Zurich
28. Habib Bank Ltd
29. Housing Finance Company of Kenya Ltd.

30. Imperial Bank Ltd
31. I & M Bank Ltd
32. Jamii Bora Bank Ltd
33. K-Rep Bank Ltd
34. Kenya Commercial Bank Ltd
35. Kenya Women Microfinance Bank
36. Middle East Bank (K) Ltd
37. National Bank of Kenya Ltd
38. NIC Bank Ltd.
39. Oriental Bank Ltd
40. Paramount Universal Bank Ltd
41. Prime Bank Ltd
42. Postbank
43. Standard Chartered Bank (K) Ltd
44. Transnational Bank Ltd
45. UBA Kenya Bank Ltd
46. Victoria Commercial bank Ltd

(<http://www.kba.co.ke>)

APPENDIX II: PANEL DATA

| BANK | ROA | | | |
|---------------------------------|---------------|---------------|---------------|---------------|
| | 2011 | 2012 | 2013 | 2014 |
| African Banking Corporation Ltd | 0.0412 | 0.0292 | 0.0294 | 0.0149 |
| Bank of Africa (K) Ltd | 0.0143 | 0.0130 | 0.0195 | 0.0033 |
| Bank of India | 0.0418 | 0.0244 | 0.0408 | 0.0374 |
| CFC Stanbic Bank (K) Ltd | 0.0223 | 0.0353 | 0.0410 | 0.0431 |
| Chase Bank Ltd | 0.0233 | 0.0268 | 0.0294 | 0.0308 |
| Citibank N.A. Kenya | 0.0643 | 0.1039 | 0.0700 | 0.0522 |
| Consolidated Bank of Kenya Ltd | 0.0161 | 0.0098 | -0.0085 | -0.0182 |
| Co-operative Bank of Kenya Ltd | 0.0368 | 0.0480 | 0.0468 | 0.0443 |
| Credit Bank Ltd | 0.0095 | 0.0126 | 0.0099 | -0.0102 |
| Diamond Trust Bank (K) Ltd | 0.0419 | 0.0494 | 0.0488 | 0.0447 |
| Ecobank Kenya Ltd | 0.0045 | -0.0483 | -0.0334 | -0.0109 |
| Equity Bank Ltd | 0.0684 | 0.0744 | 0.0765 | 0.0726 |
| Family Bank Ltd | 0.0201 | 0.0272 | 0.0404 | 0.0424 |
| Guaranty Trust Bank Ltd | 0.0212 | 0.0203 | 0.0161 | 0.0208 |
| First Community Bank Ltd | 0.0128 | 0.0295 | 0.0177 | 0.0067 |
| Giro Commercial Bank Ltd | 0.0279 | 0.0169 | 0.0281 | 0.0313 |
| Gulf African Bank Ltd | 0.0120 | 0.0276 | 0.0270 | 0.0311 |
| I&M Bank Ltd | 0.0580 | 0.0516 | 0.0549 | 0.0564 |
| Imperial Bank Ltd | 0.0637 | 0.0553 | 0.0580 | 0.0475 |
| Kenya Commercial Bank Ltd | 0.0498 | 0.0518 | 0.0549 | 0.0593 |
| K-Rep Bank Ltd | 0.0275 | 0.0321 | 0.0422 | 0.0461 |
| National Bank of Kenya Ltd | 0.0356 | 0.0171 | 0.0192 | 0.0190 |
| NIC Bank Ltd | 0.0457 | 0.0424 | 0.0462 | 0.0444 |
| Oriental Commercial Bank Ltd | 0.0383 | 0.0183 | 0.0254 | 0.0107 |
| Prime Bank Ltd | 0.0307 | 0.0267 | 0.0383 | 0.0418 |
| Standard Chartered Bank (K) Ltd | 0.0503 | 0.0589 | 0.0604 | 0.0642 |
| Trans-National Bank Ltd | 0.0405 | 0.0366 | 0.0233 | 0.0186 |
| UBA Bank (K) Ltd | -0.0571 | -0.1358 | -0.0749 | -0.0697 |
| Mean | 0.0308 | 0.0270 | 0.0303 | 0.0277 |
| STDEV | 0.0246 | 0.0412 | 0.0309 | 0.0300 |

Source: CBK (2015)

| BANK | CAPITAL ADEQUACY | | | |
|---------------------------------|-------------------------|---------------|---------------|---------------|
| | 2011 | 2012 | 2013 | 2014 |
| African Banking Corporation Ltd | 0.1361 | 0.1107 | 0.1248 | 0.1223 |
| Bank of Africa (K) Ltd | 0.1206 | 0.1023 | 0.1241 | 0.1272 |
| Bank of India | 0.1447 | 0.1633 | 0.1656 | 0.1768 |
| CFC Stanbic Bank (K) Ltd | 0.0725 | 0.1357 | 0.1309 | 0.1555 |
| Chase Bank Ltd | 0.0813 | 0.1039 | 0.0978 | 0.1033 |
| Citibank N.A. Kenya | 0.2024 | 0.2493 | 0.2241 | 0.2312 |
| Consolidated Bank of Kenya Ltd | 0.0937 | 0.0874 | 0.074 | 0.1016 |
| Co-operative Bank of Kenya Ltd | 0.1250 | 0.1451 | 0.1558 | 0.1040 |
| Credit Bank Ltd | 0.1776 | 0.184 | 0.1694 | 0.1299 |
| Diamond Trust Bank (K) Ltd | 0.1338 | 0.1574 | 0.1627 | 0.1826 |
| Ecobank Kenya Ltd | 0.0634 | 0.0629 | 0.0919 | 0.1704 |
| Equity Bank Ltd | 0.1981 | 0.1977 | 0.2128 | 0.1470 |
| Family Bank Ltd | 0.1278 | 0.1569 | 0.1372 | 0.1718 |
| Guaranty Trust Bank Ltd | 0.1050 | 0.1460 | 0.2376 | 0.0994 |
| First Community Bank Ltd | 0.0958 | 0.1082 | 0.107 | 0.1606 |
| Giro Commercial Bank Ltd | 0.1333 | 0.1445 | 0.1532 | 0.2172 |
| Gulf African Bank Ltd | 0.1021 | 0.1151 | 0.1673 | 0.1593 |
| I&M Bank Ltd | 0.1802 | 0.1813 | 0.1861 | 0.1589 |
| Imperial Bank Ltd | 0.1438 | 0.1317 | 0.133 | 0.1320 |
| Kenya Commercial Bank Ltd | 0.1599 | 0.174 | 0.193 | 0.1539 |
| K-Rep Bank Ltd | 0.1428 | 0.16 | 0.1415 | 0.1914 |
| National Bank of Kenya Ltd | 0.1523 | 0.1556 | 0.1281 | 0.0986 |
| NIC Bank Ltd | 0.1345 | 0.148 | 0.1561 | 0.1650 |
| Oriental Commercial Bank Ltd | 0.2565 | 0.2227 | 0.2175 | 0.2031 |
| Prime Bank Ltd | 0.1064 | 0.0961 | 0.1176 | 0.1408 |
| Standard Chartered Bank (K) Ltd | 0.1253 | 0.1565 | 0.1634 | 0.1817 |
| Trans-National Bank Ltd | 0.2392 | 0.2084 | 0.1935 | 0.1870 |
| UBA Bank (K) Ltd | 0.2271 | 0.4169 | 0.2854 | 0.2395 |
| Mean | 0.1422 | 0.1579 | 0.1590 | 0.1576 |
| STDEV | 0.0489 | 0.0659 | 0.0478 | 0.0393 |

Source: CBK (2016)

| | CASH AND CASH EQUIVALENTS | | | |
|---------------------------------|----------------------------------|-----------------|-----------------|-----------------|
| BANK | 2011 | 2012 | 2013 | 2014 |
| African Banking Corporation Ltd | 850.48 | 1787.78 | 1298.75 | 1209.00 |
| Bank of Africa (K) Ltd | 4523.00 | 8115.77 | 5767.00 | 8110.00 |
| Bank of India | 1199.11 | 1044.25 | 1302.21 | 1454.73 |
| CFC Stanbic Bank (K) Ltd | 7104.65 | 23366.58 | 9466.55 | 9555.58 |
| Chase Bank Ltd | 2647.81 | 5720.15 | 4741.34 | 10997.83 |
| Citibank N.A. Kenya | 3022.62 | 6983.62 | 5888.76 | 9328.96 |
| Consolidated Bank of Kenya Ltd | 1209.72 | 1419.51 | 934.07 | 1406.32 |
| Co-operative Bank of Kenya Ltd | 21616.00 | 31100.00 | 30754.00 | 37146.00 |
| Credit Bank Ltd | 326.88 | 347.77 | 567.28 | 455.86 |
| Diamond Trust Bank (K) Ltd | 8281.50 | 11508.86 | 12708.76 | 15909.81 |
| Ecobank Kenya Ltd | 1590.65 | 2884.49 | 3205.28 | 2956.01 |
| Equity Bank Ltd | 35282.00 | 45134.00 | 34528.00 | 48218.00 |
| Family Bank Ltd | 1835.03 | 4320.69 | 4356.68 | 5532.61 |
| Guaranty Trust Bank Ltd | 124.07 | 137.21 | 376.18 | 400.99 |
| First Community Bank Ltd | - | 1289.30 | 1326.40 | 3475.77 |
| Giro Commercial Bank Ltd | 541.00 | 817.11 | 743.73 | 1001.24 |
| Gulf African Bank Ltd | 1613.35 | 1756.00 | 1836.44 | 1599.58 |
| I&M Bank Ltd | 6998.09 | 8811.61 | 8909.22 | 10248.86 |
| Imperial Bank Ltd | 1944.11 | 2773.41 | 1917.60 | 6472.76 |
| Kenya Commercial Bank Ltd | 42708.02 | 36419.91 | 23933.18 | 47064.32 |
| K-Rep Bank Ltd | 946.17 | 1485.53 | - | 1720.27 |
| National Bank of Kenya Ltd | 5565.00 | 5460.99 | 9500.41 | 17195.21 |
| NIC Bank Ltd | 5638.92 | 7050.96 | 7561.60 | 9528.43 |
| Oriental Commercial Bank Ltd | 363.03 | 764.76 | 462.71 | 678.04 |
| Prime Bank Ltd | 1564.04 | 2505.81 | 2673.90 | 2485.44 |
| Standard Chartered Bank (K) Ltd | 12005.05 | 13575.45 | 14045.23 | 15383.31 |
| Trans-National Bank Ltd | 590.50 | 849.08 | 942.15 | 703.31 |
| UBA Bank (K) Ltd | 202.59 | 88.28 | 158.00 | 486.04 |
| Mean | 6307.16 | 8125.67 | 7033.53 | 9668.72 |
| STDEV | 10549.67 | 11715.09 | 9182.585 | 13280.13 |

Source: CBK (2016)