

**RELATIONSHIP BETWEEN MACRO-ECONOMIC VARIABLES AND  
COMMERCIAL BANKS' LIQUIDITY IN  
KISUMU CENTRAL BUSINESS DISTRICT, KENYA**

**BY**

**KEMEI KIPKOECH KENNETH**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF  
BUSINESS ADMINISTRATION**

**MASENO UNIVERSITY  
S.G. S. LIBRARY**

**SCHOOL OF BUSINESS AND ECONOMICS**

**MASENO UNIVERSITY**

**© 2015**

## ABSTRACT

Financial institutions and markets literature show that monetary policies, government expenditure and economic cycles are important drivers of bank liquidity and liquidity is an important determinant of financial solvency. Despite the important role played by macro-economic variables in influencing bank liquidity, the association between monetary policy and bank liquidity, the effect of government expenditure on bank liquidity and the effect of economic cycles on bank liquidity in Kisumu CBD are unknown. The purpose of this study was therefore to investigate the relationship between commercial banks' liquidity and macroeconomic variables in Kisumu CBD. Specific objectives of the study were to; establish the association between monetary policy and commercial banks liquidity level in Kisumu CBD, examine the effect of government expenditure on liquidity level of commercial banks in Kisumu CBD and determine the effect of economic cycle on liquidity of commercial banks in Kisumu CBD. The study was guided by a self-conceptualized framework with macro-economic factors as independent variables and banks liquidity as the dependent variable. A correlational research design was employed. The target population was all the 28 commercial banks operating in Kisumu CBD. The study used both primary and secondary data. A semi-structured self-administered questionnaire to three senior managers from each bank totaling to 84 managers was used to collect primary data. Secondary data was collected through desk review. Data was analyzed using descriptive statistics such as mean and standard deviation and inferential statistics namely Pearson's correlation and multiple regression analyses. Data was presented using tables and charts. The findings were that: the association between monetary policies and banks' liquidity was positive and significant ( $r = 0.559$ ,  $p < 0.01$ ) implying that a positive change in monetary policy leads to an increase in bank liquidity, The relationship between government expenditure and banks' liquidity was positive and significant ( $r = 0.256$ ,  $p < 0.05$ ) implying that government expenditure positively predicts bank liquidity and that the relationship between economic cycle and banks' liquidity was positive and significant ( $r = 0.336$ ,  $p < 0.05$ ). The study concludes that the association between monetary policy and banks' liquidity is positive and significant, the effect of government expenditure and economic cycle were significant positive predictors of banks' liquidity. The study recommends that the CBK should continue tightening monetary policies, monitor government expenditure, economic cycle and make appropriate adjustments as these were found to influence banks' liquidity positively. The research findings may be significant to bank liquidity policy makers in designing optimal liquidity level that maximize firm's value. It will also be useful to bank managers, financial advisors, CBK and depositors in designing bank policies and advising capital market investors respectively. The research will provide new empirical evidence on macro-economic variables and bank's liquidity and form a basis for future research in the area.

# CHAPTER ONE

## INTRODUCTION

This chapter provides the detailed background information to the study. It details the problem statement, research objectives, research questions and scope of the study

### 1.1 Background of the study

Liquidity is one of the key factors that determine the level of bank performance. Liquidity refers to the ability of the bank to fulfill its financial obligations as and when they fall due, mainly of depositors. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a commercial bank according to the above author are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said and Tumin, 2011).

Empirical evidence (Felicia, 2011; Adofu and Audu, 2010; Rasheed, 2010; Freixas, Martin, and Skeie, 2009; Berger and Bouwman, 2009 and Khat and Bathia, 1993) show that monetary policy is an important driver of bank liquidity. Felicia (2011) use regression analysis and studies only determinants of lending behavior as opposed to liquidity levels, fails to interrogate the association between monetary policy and liquidity level in Kisumu CBD. On the other hand,

Khat and Bathia (1993) used non-parametric method and uses the Mann - Whitney test, to test the impact of real interest but did not use regression analysis and did not test the association between monetary policy and bank liquidity in Kenya. On the contrary, Adofu and Audu (2010) use ordinary least square method to ascertain the assessment of the effects of interest rate deregulation in enhancing agricultural productivity in Nigeria. However, the study investigated interest rate deregulation as opposed to the association between monetary policy and bank liquidity, did not cover commercial banks and did not employ correlational research design.

A study by Rasheed (2010) uses error correction model (ECM) to assess the determination of domestic interest rates. However, it fails to interrogate the association between monetary policy and bank liquidity, did not use correlational research design and did not cover commercial banks in Kisumu CBD. On the other hand, using descriptive research design, Berger and Bouwman (2009) studied bank liquidity creation and found that monetary policy influences liquidity only on the small banks. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, uses a small sample and did not study commercial banks' liquidity in Kenya.

Reviewed literatures show that monetary policy is an important driver of bank liquidity. Prior researches use convenient sampling methods and exploratory or case study research designs and descriptive statistics; study determinants of liquidity risk. They fail to link monetary policy to bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, no researches relate monetary policy to bank liquidity in Kisumu CBD. Given importance of monetary policy in the banking sector stability, the association of monetary policy with bank liquidity among banks operating in Kisumu CBD is unknown.

Literature on government expenditure and liquidity (Maysami and Sims, 2002, 2001a, 2001b; Islam, 2003; Ibrahim, 1999; Mukherjee and Naka, 1995; Islam and Watanapalachaikul, 2003 and Vuyyuri, 2005) show that government expenditure is an important driver of bank liquidity.

A study by Maysami and Sims (2002, 2001a, 2001b) employed the Error-Correction Modelling technique to examine the relationship between macroeconomic variables and stock returns in Hong Kong and Singapore and confirmed the influence of macroeconomic variables on the stock market indices in each of the six countries under study, though the type and magnitude of the associations differed depending on the country's financial structure. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya. Similarly, Islam (2003) replicated the above studies to examine the short-run dynamic adjustment and the long-run equilibrium relationships between four macroeconomic variables (interest rate, inflation rate, exchange rate, and the industrial productivity) and the Kuala Lumpur Stock Exchange (KLSE) Composite Index and found that there existed statistically significant short-run (dynamic) and long-run (equilibrium) relationships among the

macroeconomic variables and the KLSE stock returns. However, the study fails to interrogate effect of government expenditure on liquidity level in Kisumu CBD. On the same vein, Ibrahim (1999) investigated the dynamic interactions between the KLSE Composite Index, and seven macroeconomic variables (industrial production index, money supply M1 and M2, consumer price index, foreign reserves, credit aggregates and exchange rate) but, failed to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Mukherjee and Naka (1995) applied Johansen's (1998) VECM to analyze the relationship between the Japanese Stock Market and exchange rate, inflation, money supply, real economic activity, long-term government bond rate, and call money rate and found that a cointegrating relation indeed existed and that stock prices contributed to this relation. Maysami and Koh (2000) examined such relationships in Singapore. They found that inflation, money supply growth, changes in short- and long-term interest rate and variations in exchange rate formed a cointegrating relation with changes in Singapore's stock market levels. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Islam and Watanapalachaikul (2003) showed a strong, significant long-run relationship between stock prices and macroeconomic factors (interest rate, bonds price, foreign exchange rate, price-earnings ratio, market capitalization, and consumer price index) during 1992-2001 in Thailand. However, the study fails to interrogate effect of government expenditure on liquidity level in Kisumu CBD. On the contrary, a study by Vuyyuri (2005) investigates the cointegrating relationship and the causality between the financial and the real sectors of the Indian economy using monthly observations from 1992 through December 2002. The financial variables used were interest rates, inflation rate, exchange rate, stock return and real sector was proxied by industrial productivity. Johansen (1988) multivariate cointegration test supported the long-run equilibrium relationship between the financial sector and the real sector, and the Granger test showed unidirectional Granger causality between the financial sector and real sector of the economy. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, and did not study commercial banks' liquidity in Kenya.

Reviewed literatures show that government expenditure is an important driver of bank liquidity. Prior researches use Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, convenient sampling methods and time series data, secondary data and descriptive statistics; study the relationship between macro-economic variables and stock prices. They fail to interrogate the link between government expenditure and bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, no researches relating government expenditure to bank liquidity in Kisumu CBD. Therefore, the effect of government expenditure on bank liquidity among banks operating in Kisumu CBD is unknown.

Empirical evidence (Horvath *et al.*, 2012; Berger and Bouwman, 2009; Athanasoglou, 2011; Rasheed, 2010; Freixas, Martin, and Skeie, 2009; Saxegaard, 2006 and Ganley, 2004) show that economic cycles are critical aspects in explaining bank liquidity. Using Granger causality tests in a dynamic panel framework, Horvath *et al.* (2012) find that capital negatively Granger-causes liquidity creation in the Czech banking sector where the majority of banks are small. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, studied small banks only and did not test the effect of economic cycle on bank liquidity and omitted commercial banks' liquidity in Kenya. On the other hand, using descriptive research design, Berger and Bouwman (2009) studied bank liquidity creation and found that monetary policy influences liquidity only on the small banks. Yet, there is no difference in liquidity creation by monetary policy during normal or crisis situation. However, the study fails to link economic cycle to bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. On the contrary, using an unbalanced panel of SEE banks from 2001 to 2009, Athanasoglou (2011) explores the role of liquidity on capital and posits a positive, significant, and robust effect. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, studied small banks only and did not test the effect of economic cycle on bank liquidity and omitted commercial banks' liquidity in Kenya.

A study by Rasheed (2010) use error correction model (ECM) to investigate interest rates determination in Nigeria and found out that as the Nigerian financial sector integrates more with global markets returns on foreign assets will play a significant role in the determination of domestic interest rates. However, the study fails to interrogate the effect of economic cycle on bank liquidity, did not use correlational research design and did not cover commercial banks in Kisumu CBD. Freixas, Martin, and Skeie (2009) fails to investigate the effect of economic cycle on bank liquidity using correlational research design and regression analysis and did not study commercial banks in Kenya. A study by Saxegaard (2006) on the pattern of excess liquidity in sub-sahara Africa countries using SVAR a (structural vector autoregression) fails to link economic cycle to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya. Similarly, a study by Ganley (2004) reveals that liquidity absorption by monetary authority inclines to utilize monetary instrument tools such as central bank securities with high interest. This has made monetary policy transmission ineffective. In the long run, the implication of this policy will increase the cost of monetary operation and made central bank bankrupt. However, the study did not test the effect of economic cycle on bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

**MASENO UNIVERSITY**  
**S.G. S. LIBRARY**

Reviewed literatures show that economic cycles are critical aspects in explaining bank liquidity. Prior researches use Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, convenient sampling methods and time series data, secondary data and descriptive statistics; study the relationship between macro-economic variables and stock prices. They fail to interrogate the link between economic cycles and bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, no empirical studies relating economic cycles to bank liquidity in Kisumu CBD. Therefore, the effect of economic cycles on bank liquidity among banks operating in Kisumu CBD is unknown.

In Kenya, regulation of commercial banks is the responsibility of the Central Bank of Kenya. The Banking Supervision department carries out the function of supervising banks to ensure the liquidity, solvency, and proper functioning of a stable market based banking system. Further to this, audited performance of the banking sector is measured in terms of capital

adequacy, asset quality, liquidity, and earnings based on the Central Bank internal rating system. The World Trade Center disaster also raised the issue of liquidity and how to access funds when needed. During such an emergency people often withdraw cash from the bank, and this puts great pressure on a bank's liquidity. Regarding this, Comer (2004), observed that it is necessary for banking institutions to hold cash and cash equivalents in more than one federal home bank. The Central Banks Regulation on liquidity management is issued under section 33 of the Banking Act. Under the Banking Act, the Central Bank of Kenya may determine, vary or alter such minimum levels of liquid assets to be 'held by all institutions and to those already defined under section 19 (2) (a) - (d) of the Banking Act (The Kenya Banking Act). The CBK, in its Central Bank of Kenya Liquidity Regulations Supplement (2012), observes that the purpose of the regulation among others is to; ensure that each institution meets the minimum liquidity requirements, guide institutions in the formulation of liquidity risk management strategies, policies, procedures, management information systems, internal controls and contingency plans for unexpected distress situations, protect deposit funds, promote a stable and efficient banking system, and endear confidence in the financial sector. The commercial banks supervisory department continues to adopt and implement effective and sound supervisory methods in order to minimize the risk inherent in the banking system. The funding gap for commercial banks is managed through a stable funding base along with detailed forecasting.

## **1.2 Statement of the problem**

Financial and institutions and markets literature show that monetary policies, government expenditure and economic cycles are important drivers of bank liquidity and liquidity is an important determinant of financial solvency, because without liquidity a bank cannot meet the deposit withdrawals and satisfy customer loans. Prior researches do not explore the link between monetary policy and bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, it is unknown how monetary policy associates with bank liquidity in Kisumu CBD.

They employ Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, convenient sampling methods and time series data, secondary data and descriptive statistics; do not interrogate the link between government expenditure and bank liquidity using correlational research design and regression analysis, use a small



sample and did not study commercial banks' liquidity in Kenya. Therefore, the effect of government expenditure on bank liquidity among banks operating in Kisumu CBD is unknown.

Despite the important role played by economic cycles in influencing bank liquidity, no empirical studies relating economic cycles to bank liquidity in Kisumu CBD. Therefore, the effect of economic cycles on bank liquidity among banks operating in Kisumu CBD is unknown.

### **1.3 Objectives of the Study**

The main objective of this study was to investigate the relationship between commercial banks liquidity and macroeconomic variables in Kisumu CBD, Kenya.

Specifically, the study sought to:

- (i) Establish the association between monetary policy and commercial banks liquidity level in Kisumu CBD.
- (ii) Examine the effect of government expenditure on liquidity level of commercial banks in Kisumu CBD.
- (iii) Determine the effect of economic cycle on liquidity of commercial banks in Kisumu CBD.

### **1.4 Research questions**

The research sought to answer the following questions:

- (i) What is the association between monetary policies on commercial banks liquidity level in Kisumu CBD?
- (ii) What is the effect of government expenditure on liquidity level of commercial banks in Kisumu CBD?
- (iii) What is the effect of economic cycles affecting liquidity of commercial banks in Kisumu CBD?

### **1.5 Scope of Study**

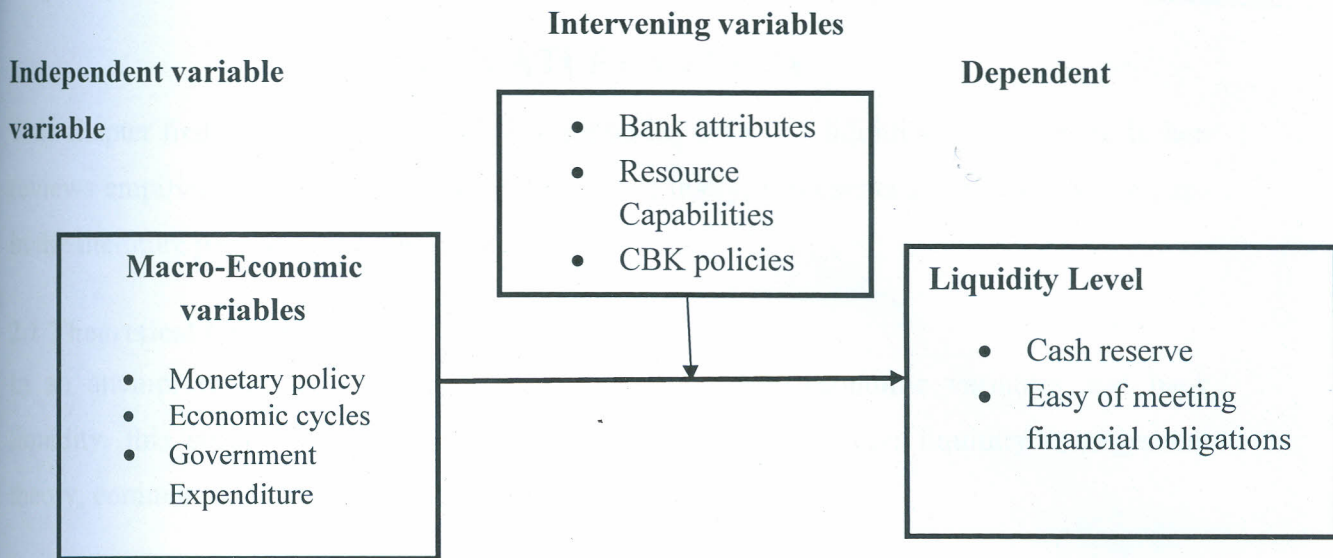
Commercial banks are distributed all over the country but due finance and time constraints the study will concentrate only on commercial banks in Kisumu CBD. The research was conducted on all the 28 commercial banks operating in Kisumu CBD making it a census

study. The study was restricted to macro-economic variables and commercial banks liquidity in Kisumu CBD.

### **1.6 Justification of the study**

The study will enrich the field of study in liquidity especially bring out the factors that influence the liquidity of commercial banks. The bank will get to know of the factors that influence their liquidity especially macroeconomic variables. The study will open grounds for analysis of such factors to determine which factors the bank would have direct control on and how. The study will enlighten the rational depositors and enable them to make rational decisions especially in cyclical and seasonal economic trends that may influence banks liquidity. Through determination of factors that influence liquidity level and their relative importance, the central bank will determine whether its measure of liquidity level remains the most important thing. As a regulator the central bank would be able to determine whether banks should be left free since other influence will determine the liquidity level. The study will also tend to enhance the government's adoption of policies such as the foreign exchange controls, foreign direct investments, cash outflows and fiscal policies. Credit managers will be challenged to place liquidity in the context of the wider internal and external factors. This will put them in a position to make more informed decisions. Liquidity is a key indicator and predictor of bankruptcy and solvency. Financial analysts will therefore be in a position to appreciate the factors that influence the liquidity level of commercial banks and therefore advice the banks appropriately

## 1.7 Conceptual Framework



**Figure 1.1: Macro-Economic Variables and Bank Liquidity Relationship**

*Source: Self Conceptualization, 2014*

Figure 1.1 shows the relationship between macro-economic variables and bank liquidity. In the framework, the independent variables are the generic marketing strategies namely cost leadership, differentiation and focus strategies. The dependent variable is the radio broadcasting firm performance which is measured in terms of the level of revenue. In addition, there exist a number of intervening variables which include: organizational characteristics and resource capabilities

## CHAPTER TWO

### LITERATURE REVIEW

This chapter first reviews theoretical literature on liquidity and liquidity management. It then reviews empirical literature relevant to the study. Finally, it presents a summary of the gaps in the literature justifying the current study.

#### 2.1 Theoretical Review

In an attempt to explain the relationship between macro-economic variables and bank liquidity, this study focused on three competing theories namely: liquidity management theory, commercial loan theory and credit creation theory.

##### 2.1.1 Liability Management Theory

Liquidity management theory according to Dodds (1982) consists of the activities involved in obtaining funds from depositors and other creditors (from the market especially) and determining the appropriate mix of funds for a particular bank. This point of view contends that liability management must seek to answer the following questions: How do we obtain funds from depositors? How do we obtain funds from other creditors? What is the appropriate mix of the funds for any bank? Management examines the activities involved in supplementing the liquidity needs of the bank through the use of borrowed funds (Dodds, 1982).

The liquidity management theory focuses on the liability side of bank balance sheet. This theory contends that supplementary liquidity could be derived from the liabilities of a bank. According to Nwankwo (1991) the theory argues that since banks can buy all the funds they need, there is no need to store liquidity on the asset side (liquidity asset) of the balance sheet. Liquidity theory has been subjected to critical review by various authors. The general consensus is that during the period of distress, a bank may find it difficult to obtain the desired liquidity since the confidence of the market may have seriously affected and credit worthiness would invariably be lacking. However, for a healthy commercial bank, the liabilities (deposits, market funds and other creditors) constitute an important source of liquidity. Therefore the concept of bank liquidity is anchored on this theory.

##### 2.1.2 Commercial Loan Theory

This theory has been subjected to various criticisms by Dodds (1982) and Nwankwo (1992).

From the various points of view, the major limitation is that the theory is inconsistent with the demands of economic development especially for developing countries since it excludes long term loans which are the engine of growth. The theory also emphasizes the maturity structure of bank assets (loan and investments) and not necessarily the marketability or the shiftability of the assets (Dodds, 1982).

Also, the theory assumes that repayment from the self-liquidating assets of the bank would be sufficient to provide for liquidity. This ignores the fact that seasonal deposit withdrawals and meeting credit request could affect the liquidity position adversely. Moreover, the theory fails to reflect in the normal stability of demand deposits in the liquidity consideration.

This obvious view may eventually impact on the liquidity position of the bank. Also the theory assumes that repayment from the self-liquidating assets of a bank would be sufficient to provide for liquidity. This ignores the fact that seasonal deposit withdrawals and meeting credit request could affect the liquidity position adversely (Nwankwo, 1992).

### **2.1.3 Credit Creation Theory Linking Macro-Economic Variables to Bank Liquidity**

Credit creation is a process under which commercial banks advance loans many times greater as compared to legal money at the disposal of commercial banks. According to Hardwick et al (2008), liquidity ratio acts as a controller for credit creation implying that commercial banks can only advance credit to a limited level, which is banks liquidity. A monetary policy stimulated to output and employment takes the form of an increase in the money supply, which reduces interest rates and may in turn boost stock prices and make lending institutions more willing to grant credit. An increase in money supply tends to reduce the interest rate because individuals try to get rid of their excess holdings of money. The Keynesian theory assumes that if households have more than their wealth in the form of money than they wish they do not immediately spend it but rather they try to spend the extra money in interest earning assets thus transferring their wealth from one form to another. Keynesian further notes that this form of transfer has an effect on the interest rates and consequently liquidity. Government provides widely accepted stable currency that eliminates the need for cumbersome and inefficient systems of barter and to maintain the value of that currency through policies that limit inflation (Hardwick *et al.* 2008).

Monetary policies involve changes in a nation supply of money and the availability of credit. To increase spending in times of high unemployment and low inflation, policymakers increase the supply of money, which lowers interest rates (i.e. reduces the price of money thereby making it easier for banks to make more loans). This encourages more spending on

consumption by putting money in people's hands. Lower interest rates also stimulate investment spending by businesses seeking to expand and have more workers. Such a move tends to reduce the liquidity level of commercial banks due to higher rates of borrowing. Liquidity is also highly affected by both the macro-economic stability and instability (Baumol and Blinder, 2001).

In a period of high inflation, and low unemployment by contrast, policy makers can cool down the economy by raising interest rates thereby reducing the supply of money and the availability of credit. Then with less money in the economy to spend and higher interest rates, both spending and prices will tend to fall or at least increase less quickly. As a result both output and input will tend to contract (Baumol and Blinder, 2001).

Open market operations policies are also used and intended to increase or decrease the supply or demand for money, as it may be necessary. Hardwick et al (2008) observed that in the event that the government employs open market operations, buyers buy securities with their cheques drawn on their accounts on the commercial banks. The effect is a reduction in the commercial banks cash reserves, which tends to cause a multiple contraction on the banks deposits. Such operations reduce the level of liquidity of the commercial banks. Conversely, if the central bank wishes to expand the money supply, it instructs its brokers to buy securities on the open market and pays for them with cheques drawn on it. The sellers of the securities deposit their cash with the commercial banks and this increases the cash reserves. This activity tends to increase the liquidity level of the commercial banks, due to expansion of the bank deposits (Hardwick *et al.*, 2008).

#### **2.1.4 The Concept of Bank Liquidity**

CBK (2012) defines bank liquidity as the ability of the commercial bank to maintain sufficient funds to pay for its maturing obligations. It is the commercial bank's ability to immediately meet cash, cheques, other withdrawals obligations and legitimate new loan demand while abiding by existing reserve requirements. Nwaezeaku (2008) define bank liquidity as the degree of convertibility to cash or the ease with which any asset can be converted to cash (sold at a fair market price).

Bank liquidity sources can be summaries into four areas. First one is the depositors, who entrust their money to the bank. Secondly, it is the market. A bank can always go to the asset market and sell its assets to generate liquidity through securitization, loan syndication and the secondary market for loans, in its role as originator and distributor. Moreover, the commercial bank can get liquidity from the interbank market, arguably the most important

source of bank liquidity. Finally, a commercial bank can also choose to get funding liquidity directly from the central bank. In the euro system, this is possible by bidding in the open market operations of the ECB (Drehmann and Nikolaou, 2008). Liquidity management therefore involves the strategic supply or withdrawal from the market or circulation the amount of liquidity consistent with a desired level of short-term reserve money without distorting the profit making ability and operations of the bank. It relies on the daily assessment of the liquidity conditions in the banking system, so as to determine its liquidity needs and thus the volume of liquidity to allot or withdraw from the market. The liquidity needs of the banking system are usually defined by the sum of reserve requirements imposed on banks by a monetary authority (CBK, 2012).

### **2.1.5 Monetary Policy**

In Kenya, the CBR remain the base for monetary policy operations and continued to coordinate movements in short-term interest rates in the period. The movement in the CBR, both in direction and magnitude, signals the monetary policy stance. The monetary policy stance, as signaled by the movements in the CBR, is operationalized through various instruments. These include Open Market Operations (OMO) which involves use of Repos and Term Auction Deposits (TAD), changes in cash reserve requirements at CBK, foreign exchange market transactions, and the CBK Standing Facility. Central Bank of Kenya Report(2014)

Interest rate will change in order to equate demand for money with its supply. The price of bonds and their interest is determined by the forces of demand and supply. A fall in the price of bonds means a rise in the rate of interest Wahi (2010) indicates that an increase in interest rates adversely affects the liquidity of all sectors except the commercial and services sector where a positive correlation was found to exist. According to the liquidity preference theory of interest rate, the interest rate rises when there is an excess demand for money and falls when there is an excess supply for money. Lipsey and Steiner (2005), observe that there exists an inverse relationship between the price of bonds and the interest rates. According to the Thailand Monetary Policy (2001), the interest rate differential will widen with real exchange rate appreciation. This triggers capital to flow in. The fixed quantity of money  $M_0$  is shown by the completely inelastic supply curve MS. The demand for money is MD. Its negative slope indicates that a fall in the rate of interest causes the quantity of money demanded to increase. It is drawn for given values of income, wealth, and price levels.

Equilibrium is at  $E_0$  with a rate of interest 10. If the rate of interest is  $\Pi$  there will be an excess demand for money  $MoM_1$ . Bonds will be offered for sale in an attempt to increase money holdings. This will force the rate of interest up to 10 (The price of bonds falls) at which point the quantity of money demanded is equal to the fixed available quantity  $Mo$ . If the interest is 12 there will be an excess supply of money balances. This will force the rate of interest down to 10 (The price of bonds rises) at which point the quantity of money demanded has risen to equal to the fixed money supply  $Mo$ .

## **2.2 Review of Empirical Studies**

### **2.2.1 Association between Monetary Policy and Commercial Banks' Liquidity Level in Kisumu CBD**

Felicia (2011) use regression analysis to investigate the determinants of commercial banks lending behavior in Nigeria and found that commercial banks deposits have the greatest impacts on their lending behavior. However, only determinants of lending behavior as opposed to liquidity levels was studied, fails to interrogate the association between monetary policy and liquidity level in Kisumu CBD.

Khat and Bathia (1993) used non-parametric method in his study of the relationship between interest rates and other macro-economic variables, including savings and investment. In his study he grouped (64) sixty-four developing countries including Nigeria into three bases on the level of their real interest rate. He then computed economic rate among which were gross savings, income and investment for countries. Applying the Mann - Whitney test, he found that the impact of real interest was not significant for the three groups. However, then study did not use regression analysis and did not test the association between monetary policy and bank liquidity in Kenya.

Adofu and Audu (2010) use ordinary least square method to ascertain the assessment of the effects of interest rate deregulation in enhancing agricultural productivity in Nigeria. The study found out that interest rate play a significant role in enhancing economic activities and as such, monetary authorities should ensure appropriate determination of interest rate level that will break the double - edge effect of interest rate on savers and local investors. However, the study investigated interest rate deregulation as opposed to the association between monetary policy and bank liquidity, did not cover commercial banks and did not employ correlational research design. A study by Rasheed (2010) use error correction model



(ECM) to investigate interest rates determination in Nigeria and found out that as the Nigerian financial sector integrates more with global markets returns on foreign assets will play a significant role in the determination of domestic interest rates. However, the study fails to interrogate the association between monetary policy and bank liquidity, did not use correlational research design and did not cover commercial banks in Kisumu CBD.

Freixas, Martin, and Skeie (2009) conducted the study of interbank market efficiency in allocating fund and optimum central bank policy to deal with liquidity shocks in the market and found that when distributional liquidity shock crisis happens and creates market segmentation (disparity) amongst banks, central bank should reduce the interest rate. Failure to do so, will exacerbate financial stability which likely accompany by bank run. However, the study fails to investigate the association between monetary policy using correlational research design and regression analysis and did not study commercial banks in Kenya.

A study by Saxegaard (2006) on the pattern of excess liquidity in sub-sahara Africa countries using SVAR a (structural vector autoregression) found that excess liquidity impairs monetary policy transmission so that monetary authority could not control money demand. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya. Similarly, a study by Ganley (2004) reveals that liquidity absorption by monetary authority inclines to utilize monetary instrument tools such as central bank securities with high interest. This has made monetary policy transmission ineffective. In the long run, the implication of this policy will increase the cost of monetary operation and made central bank bankrupt. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Another study by Bathaluddin, Adhi, and Wahyu (2012) utilizing TVAR (threshold vector autoregression) show that there is a switching regime from low liquidity to excess liquidity in Indonesia in 2005. Excess liquidity has made monetary policy ineffective in restraining inflation. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Using descriptive research design, Berger and Bouwman (2009) studied bank liquidity creation and found that monetary policy influences liquidity only on the small banks. Yet, there is no difference in liquidity creation by monetary policy during normal or crisis

situation. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya.

A study by Vodova (2011) on liquidity of Czech Commercial Banks and its determinants found that some indicators such as CAR (capital adequacy ratio), credit interest rate, NPL (non performing loan), and interbank interest rate affect bank liquidity in Czech positively. Conversely, financial crisis, inflation, and economic growth negatively influence to bank liquidity. Unemployment, margin, interest rate, profitability, and interest rate monetary policy, significantly have an effect on bank liquidity. However, fails to interrogate specific association between monetary policy to bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya.

Shen, Chen, Kao, dan Yeh (2009) studied the determinants of liquidity risk by utilizing panel data in 12 countries and found that liquid asset, external financing, supervisory, regulation, and macroeconomic influence liquidity risk. In the country with market based financial system, liquidity risk correlates negatively to bank's performance. On the contrary, in the country with bank-based financial system, liquidity risk does not correlate to bank's performance. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

A study by Bathaluddin *et al.* (2012) found that fluctuation in banknotes demand, economic growth, cost of fund, and lag of liquidity significantly determine banks' behavior in Indonesia to hold excess liquidity. In this research, the precautionary liquidity is defined as the ratio of banks fund placed in central bank (as excess liquidity) to the deposit fund. Involuntary liquidity is the residual of precautionary liquidity estimation. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Pontes and Sol Murta (2012) studied that excess liquidity occurs as underdeveloped financial sector, less efficient interbank money market; less diversified financial market instruments and high cost in intermediation encourage excess liquidity holding by banks. Despite changes

and variation in individual bank liquidity holding, the total liquidity of banks in the system does not change. Nonetheless, the changes in individual bank affect the composition of liquidity. However, the study fails to link monetary policy to bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya.

Reviewed literatures show that monetary policy is an important driver of bank liquidity. Prior researches use convenient sampling methods and exploratory or case study research designs and descriptive statistics; study determinants of liquidity risk. They fail to link monetary policy to bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, no researches relate monetary policy to bank liquidity in Kisumu CBD. Given importance of monetary policy in the banking sector stability, the association of monetary policy with bank liquidity among banks operating in Kisumu CBD is unknown.

### **2.2.2 Effect of Government Expenditure on Liquidity Level of Commercial Banks in Kisumu CBD**

A study by Maysami and Sims (2002, 2001a, 2001b) employed the Error-Correction Modelling technique to examine the relationship between macroeconomic variables and stock returns in Hong Kong and Singapore (Maysami and Sim, 2002b), Malaysia and Thailand (Maysami and Sim 2001a), and Japan and Korea (Maysami and Sim 2001b). Through the employment of Hendry's (1986) approach which allows making inferences to the short-run relationship between macroeconomic variables as well as the long-run adjustment to equilibrium, they analyzed the influence of interest rate, inflation, money supply, exchange rate and real activity, along with a dummy variable to capture the impact of the 1997 Asian financial crisis. The findings confirmed the influence of macroeconomic variables on the stock market indices in each of the six countries under study, though the type and magnitude of the associations differed depending on the country's financial structure. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Islam (2003) replicated the above studies to examine the short-run dynamic adjustment and the long-run equilibrium relationships between four macroeconomic variables (interest rate, inflation rate, exchange rate, and the industrial productivity) and the Kuala Lumpur Stock

Exchange (KLSE) Composite Index and found that there existed statistically significant short-run (dynamic) and long-run (equilibrium) relationships among the macroeconomic variables and the KLSE stock returns. However, the study fails to interrogate effect of government expenditure on liquidity level in Kisumu CBD. Ibrahim (1999) also investigated the dynamic interactions between the KLSE Composite Index, and seven macroeconomic variables (industrial production index, money supply M1 and M2, consumer price index, foreign reserves, credit aggregates and exchange rate). Observing that macroeconomic variables led the Malaysian stock indices, he concluded that Malaysian stock market was informationally inefficient. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya. Similarly, a study by Chong and Koh's (2003) found that stock prices, economic activities, real interest rates and real money balances in Malaysia were linked in the long run both in the pre- and post capital control sub periods. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Mukherjee and Naka (1995) applied Johansen's (1998) VECM to analyze the relationship between the Japanese Stock Market and exchange rate, inflation, money supply, real economic activity, long-term government bond rate, and call money rate and found that a cointegrating relation indeed existed and that stock prices contributed to this relation. Maysami and Koh (2000) examined such relationships in Singapore. They found that inflation, money supply growth, changes in short- and long-term interest rate and variations in exchange rate formed a cointegrating relation with changes in Singapore's stock market levels. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Islam and Watanapalachaikul (2003) showed a strong, significant long-run relationship between stock prices and macroeconomic factors (interest rate, bonds price, foreign exchange rate, price-earning ratio, market capitalization, and consumer price index) during 1992-2001 in Thailand. However, the study fails to interrogate effect of government expenditure on liquidity level in Kisumu CBD. Hassan (2003) employed Johansen's (1988, 1991, 1992b) and Johansen and Juselius' (1990) multivariate cointegration techniques to test for the existence of long-term relationships between share prices in the Persian Gulf region. Using a vector-

error-correction model, he also investigated the short-term dynamics of prices by testing for the existence and direction of intertemporal Granger-causality. The analysis of weekly price indices in Kuwait, Bahrain, and Oman stock markets showed that: share prices were cointegrated with one cointegrating vector and two common stochastic trends driving the series, which indicates the existence of a stable, long-term equilibrium relationship between them; and prices were not affected by short-term changes but were moving along the trend values of each other. Therefore, information on the price levels would be helpful for predicting their changes. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Omran (2003) examine the impact of real interest rates as a key factor in the performance of the Egyptian stock market, both in terms of market activity and liquidity. The cointegration analysis through error correction mechanisms (ECM) indicated significant long-run and short-run relationships between the variables, implying that real interest rates had an impact upon stock market performance. However, the study fails to link government expenditure to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Vuyyuri (2005) investigates the cointegrating relationship and the causality between the financial and the real sectors of the Indian economy using monthly observations from 1992 through December 2002. The financial variables used were interest rates, inflation rate, exchange rate, stock return and real sector was proxied by industrial productivity. Johansen (1988) multivariate cointegration test supported the long-run equilibrium relationship between the financial sector and the real sector, and the Granger test showed unidirectional Granger causality between the financial sector and real sector of the economy. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, and did not study commercial banks' liquidity in Kenya.

Maghyereh (2002) investigated the long-run relationship between the Jordanian stock prices and selected macroeconomic variables, again by using Johansen's (1988) cointegration analysis and monthly time series data for the period from January 1987 to December 2000. The study showed that macroeconomic variables were reflected in stock prices in the

Jordanian capital market. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, and did not test the effect of government expenditure on bank liquidity and omitted commercial banks' liquidity in Kenya.

Reviewed literatures show that government expenditure is an important driver of bank liquidity. Prior researches use Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, convenient sampling methods and time series data, secondary data and descriptive statistics; study the relationship between macro-economic variables and stock prices. They fail to interrogate the link between government expenditure and bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, no researches relating government expenditure to bank liquidity in Kisumu CBD. Therefore, the effect of government expenditure on bank liquidity among banks operating in Kisumu CBD is unknown.

### **2.2.3 Effect of Economic Cycle on Liquidity Level of Commercial Banks in Kisumu CBD**

Using Granger causality tests in a dynamic panel framework, Horvath *et al.* (2012) find that capital negatively Granger-causes liquidity creation in the Czech banking sector where the majority of banks are small. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, studied small banks only and did not test the effect of economic cycle on bank liquidity and omitted commercial banks' liquidity in Kenya.

Using an unbalanced panel of SEE banks from 2001 to 2009, Athanasoglou (2011) explores the role of liquidity on capital and posits a positive, significant, and robust effect. However, the study looked at the long run relationship, used Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, studied small banks only and did not test the effect of economic cycle on bank liquidity and omitted commercial banks' liquidity in Kenya. A study by Rasheed (2010) use error correction model (ECM) to investigate interest rates determination in Nigeria and found out that as the Nigerian financial sector integrates more with global markets returns on foreign assets will play a significant

role in the determination of domestic interest rates. However, the study fails to interrogate the effect of economic cycle on bank liquidity, did not use correlational research design and did not cover commercial banks in Kisumu CBD.

Freixas, Martin, and Skeie (2009) conducted the study of interbank market efficiency in allocating fund and optimum central bank policy to deal with liquidity shocks in the market and found that when distributional liquidity shock crisis happens and creates market segmentation (disparity) amongst banks, central bank should reduce the interest rate. Failure to do so, will exacerbate financial stability which likely accompany by bank run. However, the study fails to investigate the effect of economic cycle on bank liquidity using correlational research design and regression analysis and did not study commercial banks in Kenya.

A study by Saxegaard (2006) on the pattern of excess liquidity in sub-sahara Africa countries using SVAR a (structural vector autoregression) found that excess liquidity impairs monetary policy transmission so that monetary authority could not control money demand. However, the study fails to link economic cycle to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya. Similarly, a study by Ganley (2004) reveals that liquidity absorption by monetary authority inclines to utilize monetary instrument tools such as central bank securities with high interest. This has made monetary policy transmission ineffective. In the long run, the implication of this policy will increase the cost of monetary operation and made central bank bankrupt. However, the study did not test the effect of economic cycle on bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Another study by Bathaluddin, Adhi, and Wahyu (2012) utilizing TVAR (threshold vector autoregression) show that there is a switching regime from low liquidity to excess liquidity in Indonesia in 2005. Excess liquidity has made monetary policy ineffective in restraining inflation. However, the study fails to link economic cycle to bank liquidity using correlational research design and regression analysis, did not study commercial banks' liquidity in Kenya.

Using descriptive research design, Berger and Bouwman (2009) studied bank liquidity creation and found that monetary policy influences liquidity only on the small banks. Yet, there is no difference in liquidity creation by monetary policy during normal or crisis situation. However, the study fails to However; the study fails to link economic cycle to bank

liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya.

Reviewed literatures show that economic cycles are critical aspects in explaining bank liquidity. Prior researches use Johansen multivariate cointegration test as opposed to correlational research design and regression analysis, convenient sampling methods and time series data, secondary data and descriptive statistics; study the relationship between macro-economic variables and stock prices. They fail to interrogate the link between economic cycles and bank liquidity using correlational research design and regression analysis, use a small sample and did not study commercial banks' liquidity in Kenya. Therefore, no empirical studies relating economic cycles to bank liquidity in Kisumu CBD. Therefore, the effect of economic cycles on bank liquidity among banks operating in Kisumu CBD is unknown.

### **2.3 The Research Gap**

Existing literature show diverse relationships exist between monetary policies, government expenditure and economic cycles but none relates these concepts using correlational research design for commercial banks operating in Kisumu CBD, Kenya. Literature shows that prior researches use Johansen multivariate cointegration test as opposed to correlational research design and regression analysis. Use convenient sampling methods and descriptive statistics; study the relationship between macro-economic variables and stock prices. They employ time series data, secondary data, but fail to study bank liquidity in Kisumu CBD using correlational research design. Therefore, it was unknown how macro-economic variables related with bank liquidity in Kisumu CBD, Kenya.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter presents detailed descriptions of the methodology that shall be used to carry out the study, collection and analysis of data. It discusses the research design that shall be used, the study population, data collection instruments, analysis and presentation of data

#### **3.1 Research Design**

The study employed a correlational research design which involves relating two or more variables and allows predictions of outcomes based on causative relationships between the variables (Cooper and Schindler, 2003). According to Mugenda and Mugenda (2003), correlational research explores the relationship between variables, that is, the effect of one thing on another and more specifically, the effect of one variable on another. Mugenda and Mugenda (2003) contend that causal research has the advantage of being relatively cheap and it is used for the current study so as to assess the relationships between study variables.

#### **3.2 Study Area**

This study was conducted in Kisumu CBD. It's a port city in western Kenya, the third largest city in Kenya, the principal city of western Kenya, the head quarters of Kisumu county. It is the largest city in western Kenya and was the second most important city after Kampala in the greater Lake Victoria basin but according to the United Nations it is now recognized as a key city and for that reason was award the title of 'Millenium City' - the first of its kind in the world. This will assist greatly in development and business investment and banking is one of the areas to grow.

#### **3.3 Target Population**

The unit of analysis was the responses about the commercial bank liquidity and macro-economic variables given by three senior managers in each bank in the sample. The population for this study comprised of all the 84 senior managers in all the 28 commercial banks operating in Kisumu CBD hence a census study.

#### **3.4 Sampling Frame**

Data was collected from all 84 senior managers drawn from all the 28 commercial banks operating within CBD, this being a census study no sampling was required. Therefore, census approaches was used, since the units of study are only 28, are concentrated in Kisumu CBD

and, therefore, accessible, and not prohibitive in terms of cost, time and other resources (Saunders *et al.*, 2007).

### **3.5 Data Collection**

This study relied on both primary and secondary data. Primary data was collected using questionnaires and secondary data was collected through desk review on newspapers, published books, journals, magazines and company handbook.

#### **3.5.1 Sources of Data**

Questionnaires were administered to the three senior managers of the 28 commercial banks in Kisumu CBD to collect primary data. Secondary data was obtained from journals, textbooks and business articles.

#### **3.5.2 Data Collection Procedure**

The researcher sought permission from Maseno University for a go ahead to collect data from the respondents and also from the commercial banks that are involved in the exercise. Upon being granted the permission, the researcher distributed the questionnaire to the respondents.

#### **3.5.3 Instrument for Data Collection**

A well structured questionnaire with research questions was used to extract information from the respondents to meet the research objectives. The data collection instrument was first pre-test before the final data was collected.

#### **3.5.4 Reliability Test**

A pilot study was done at Central bank of Kenya and the questions were revised to reduce cases of ambiguity. Checks will also be performed to ensure that sample respondents were representative of the broader population. First, the size characteristics of the sample were compared to the overall population. The results of the reliability test were analyzed using Cronbach's Alpha Method (Cronbach, 1951). According to Sekaran (2001), alpha values for each variable under study should not be less than 0.7 for the statements in the instruments to be deemed reliable. As such all the statements under each variable were subjected to this test and results compared to the threshold of 0.7. The alpha values of all variables were above 0.70.

**Table 3.5: Summary of Cronbach's Alpha Reliability Test Results**

Variables	No. of Items	Cronbach's Alpha
Monetary policy	3	0.785
Government Expenditure	3	0.784
Economic cycle	3	0.827
Bank liquidity	3	0.992

**Source: Survey Data, 2014**

Monetary policy had alpha of 0.785, government expenditure had 0.784, economic cycle had 0.827 and bank liquidity had 0.992. This indicates strong internal consistency among measures of variable items.

### **3.5.5 Validity Test**

Validity is the amount of systematic or built-in error in measurement (Norland, 1990). Questionnaires were tested for content validity to establish quality of instrument using expert reviewers in the field of finance and accounting.

### **3.6 Data Analysis**

Once the data was collected it was edited for completeness and consistency. Descriptive statistics such as mean and standard deviation and inferential statistics such as Pearson's correlation analyses with the aid of the SPSS software was used to aid the researcher in analysis of the data.



## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

#### 4.1 Introduction

This study sought to investigate the relationship between banks' liquidity and macro-economic variables in Kisumu CBD. A total of 84 questionnaires were administered to three senior managers of each bank. Of these, 74 questionnaires were returned and successfully filled. The response rate was therefore 88.10 %.

#### 4.2 Demographic Characteristics

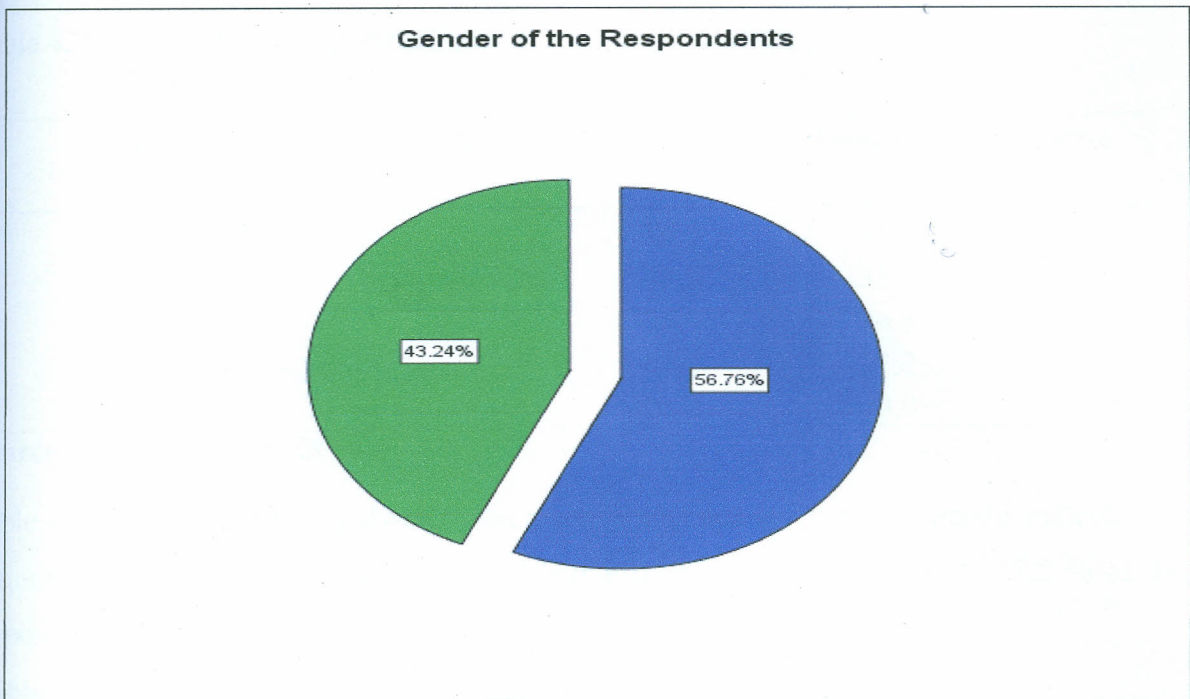
The demographic characteristics considered were respondents' gender, education level, age bracket and length of service.

Table 4.1 Respondents' Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	42	56.8	56.8	56.8
Female	32	43.2	43.2	100.0
Total	74	100.0	100.0	

**Source: Research Data, 2014**

Table 4.1 above indicates that majority (56.8%) of the respondents were men, while only 43.2% being women. This implies that most senior managers in these commercial banks are men. The same information is presented in the Figure 4.1 below.



**Figure 4.1: Gender of Respondents**

**Table 4.2: Respondents' Level of Education**

Education Level	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma	10	13.5	13.5	13.5
Undergraduate Degree	25	33.8	33.8	47.3
Masters and above	39	52.7	52.7	100.0
Total	74	100.0	100.0	

**Source: Research Data, 2014**

Table 4.2 above shows the analysis of the respondents' level of education. The results indicate that majority (52.7%) of the respondents had attained masters and above, with only 13.5 % of the respondents' having attained diploma level of education.

**Table 4.3: Respondents' Age Brackets**

Age Brackets	Frequency	Percent	Valid Percent	Cumulative Percent
Below 25 years	12	16.2	16.2	16.2
25-35 years	26	35.1	35.1	51.4
35-45 years	27	36.5	36.5	87.8
45 years and above	9	12.2	12.2	100.0
Total	74	100.0	100.0	

**Source: Research Data, 2014**

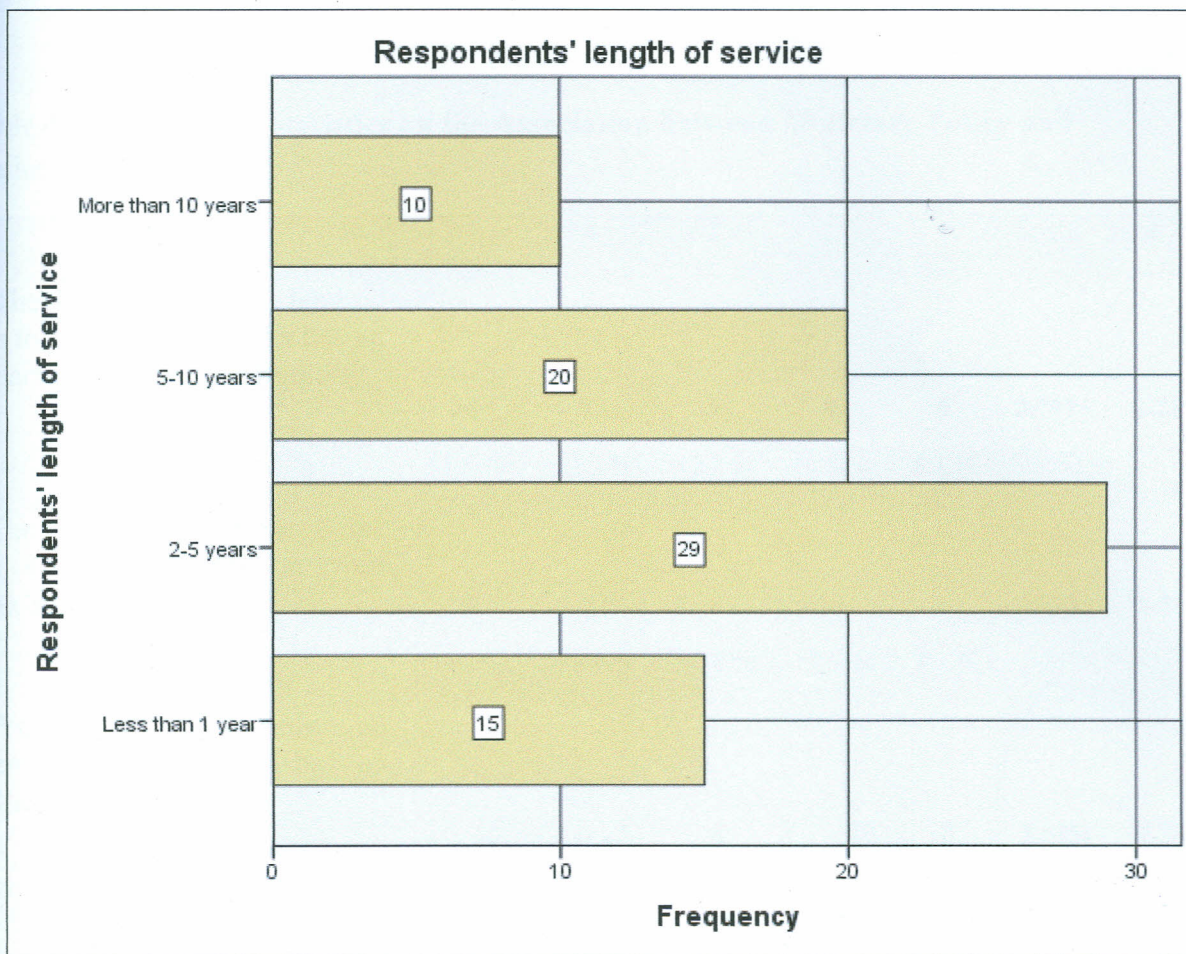
Table 4.3 above shows the analysis of the respondents' age bracket. The results indicate that majority (36.5%) of the respondents aged between 35- 45 years, with only 12.2 % of the respondents' being aged 45 years and above.

**Table 4.4: Respondents' Length of Service**

Length of Service	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 1 year	15	20.3	20.3	20.3
2-5 years	29	39.2	39.2	59.5
5-10 years	20	27.0	27.0	86.5
More than 10 years	10	13.5	13.5	100.0
Total	74	100.0	100.0	

**Source: Research Data, 2014**

When asked about their length of service, majority (39.2%) of the respondents indicated that they had served their respective commercial banks for a period between 2-5 years, while 20.3 % of the respondents had served for a period of less than a year. On the other hand, 27.0 % of the respondents had served for a period between 5-10 years. The same information is presented in Figure 4.2 below.



**Figure 4.2: Respondents' Length of Service**

#### 4.3 The Association between Monetary Policy and Banks' Liquidity

To achieve this objective, the respondents were asked to what extent they agreed to statements regarding the status the monetary policy and its association with banks' liquidity.

The results are presented in the sub-sections below:

**Table 4.5: Descriptive Statistics on the Association between Monetary Policy and Banks' Liquidity**

	5	4	3	2	1	Mean	Std. Dev
a. The change in CBK lending rate to commercial Banks has an impact on your bank's liquidity.	28	23	9	8	6	3.7973	1.28190
	37.8 %	31.1 %	12.2 %	10.8 %	8.1 %		
b. The CBK required reserve rate has a direct impact on your bank's liquidity.	29	21	8	10	6	3.7703	1.31948
	39.2 %	28.4 %	10.8 %	13.5 %	8.1 %		
c. Your banks participation on open market operation has an influence in its liquidity.	25	23	8	10	8	3.6351	1.36064
	33.8 %	31.1 %	10.8 %	13.5 %	10.8 %		
						<b>Overall Mean</b>	<b>3.7342</b>
							<b>1.32067</b>

Key: Strongly agree=5, Agree=4, Neutral=3, Disagree=2, strongly disagree=1

Source: Survey Data, 2014

It is clear from Table 4.5 above that majority of the respondents the change in CBK lending rate to commercial banks had an impact on bank's liquidity (Mean = 3.7973, Std.dev = 1.28190). Specifically, a vast majority of respondents strongly agreed (37.8 %) the change in CBK lending rate to commercial banks had an impact on bank's liquidity. Only 8.1 % strongly disagreed while 9.4 % were neutral about the question. These findings are consistent with the theoretical predictions of credit creation theory which postulates that monetary policies dominantly influence banks' liquidity. The same was observed by Hardwick *et al.*, (2008), observed that , if the central bank wishes to expand the money supply, it instructs its brokers to buy securities on the open market and pays for them with cheques drawn on it. The sellers of the securities deposit their cash with the commercial banks and this increases the cash reserves. This activity tends to increase the liquidity level of the commercial banks, due to expansion of the bank deposits.



**Table 4.6 Bi-Variate Pearson's Correlation between Monetary Policy and Banks' Liquidity**

Variable		Monetary Policy	Bank Liquidity
Monetary Policy	Pearson Correlation	1.000	
	Sig. (2-tailed)		
	N	74	
Banks' Liquidity	Pearson Correlation	0.559**	1.000
	Sig. (2-tailed)	0.000	
	N	74	74

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source: Research Data, 2014**

The association between monetary policy and banks' liquidity was positive and significant ( $r = 0.559, p < 0.01$ ). This finding is in contrast with previous studies (Felicia, 2011; Adofu and Audu, 2010; Berger and Bouwman, 2009 and Khat and Bathia, 1993) that found that monetary policies had a negative association with banks' liquidity. In their studies on the monetary policy and money stability they observed that liquidity status would remain sensitive as money availability in a country reacted to rumors (Rasheed, 2010; Freixas, Martin, and Skeie, 2009).

Pearson's bi-variate results between monetary policy and bank liquidity show that monetary policy positively associates with banks' liquidity.

**4.4 Effect of Government Expenditure on Liquidity Level of Commercial banks in Kisumu CBD**

To achieve this objective, the respondents were asked to rate the extent they agreed to statements regarding the status the government expenditure and its effect on banks' liquidity.

The results are presented in the sub-sections below:

**Table 4.7 Descriptive Statistics on the Effect of Government Expenditure on and Banks'**

	5	4	3	2	1	Mean	Std. Dev
a. High government expenditure indicates low liquidity level in the banks and vice versa.	26	26	10	8	4	3.8378	1.18237
	35.1 %	35.1 %	13.5 %	10.8 %	5.4 %		
b With devolved government expenditure the liquidity of your bank has been affected positively.	24	20	14	9	7	3.6081	1.31188
	32.4 %	27.0 %	18.9 %	12.2 %	9.5 %		
c. When the government is facing financial distress it affects your banks liquidity	33	18	10	8	5	3.8919	1.27749
	44.6 %	24.3 %	13.5 %	10.8 %	6.8 %		
						<b>Overall Mean</b>	<b>3.7793</b>
							<b>1.2573</b>

**Liquidity**

**Key:** Strongly agree=5, Agree=4, Neutral=3, Disagree=2, strongly disagree=1

**Source:** Survey Data, 2014

Table 4.7 above shows that majority of the respondents indicated that when the government is facing financial distress it affects banks liquidity (Mean = 3.8919, Std.dev = 1.27749). Specifically, a vast majority of respondents strongly agreed (44.6 %) that when the government is facing financial distress it affects banks liquidity. Only 6.8 % strongly disagreed while 13.5 % were neutral about the question.

**Table 4.8 Bi-Variate Pearson's Correlation between Government Expenditure and Banks' Liquidity**

Variable		Government Expenditure	Bank Liquidity
Government Expenditure	Pearson Correlation	1.000	
	Sig. (2-tailed)		
	N	74	
Banks' Liquidity	Pearson Correlation	0.256*	1.000
	Sig. (2-tailed)	0.028	
	N	74	74

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Source: Research Data, 2014**

The relationship between government expenditure and banks' liquidity was positive and significant ( $r = 0.256, p < 0.05$ ). These findings are consistent with previous studies (Maysami and Sims, 2002, 2001a, 2001b; Islam, 2003; Ibrahim, 1999; Mukherjee and Naka, 1995 and Vuyyuri, 2005) found a positive relationship between level of government expenditure and banks' liquidity.

Pearson's bi-variate results between government expenditure and bank liquidity show that government expenditure positively associates with banks' liquidity.

#### 4.5 Effect of Economic Cycle on Liquidity Level of Commercial banks in Kisumu CBD

To achieve this objective, the respondents were asked to rate the extent they agreed to statements regarding the status the economic cycle and its effect on banks' liquidity. The results are presented in the sub-sections below:

**Table 4.9: Descriptive Statistics on the Effect of Economic cycle and Banks' Liquidity**

	5	4	3	2	1	Mean	Std. De
a. General business conditions in the Kisumu County affect your bank's liquidity.	22	26	8	10	8	3.5946	1.3336
	29.7 %	35.1 %	10.8 %	13.5 %	10.8 %		
b. The level and intensity of business activity in Kisumu County does not influence your bank's liquidity.	9	12	9	17	27	2.4459	1.43481
	12.2 %	16.2 %	12.2 %	23.0 %	36.5 %		
c. Economic and political stability of the county does not affect liquidity of your bank.	5	4	15	19	31	2.0946	1.206
	6.8 %	5.4 %	20.3 %	25.7 %	41.9 %		
						<b>Overall Mean</b>	<b>2.7117</b>
							<b>1.3251</b>

**Key:** Strongly agree=5, Agree=4, Neutral=3, Disagree=2, strongly disagree=1

**Source:** Survey Data, 2014

Table 4.9 above shows that majority of the respondents indicated that general business conditions in the Kisumu County affect bank's liquidity (Mean = 3.5946, Std.dev = 1.3336). Specifically, a vast majority of respondents agreed (35.1 %) that general business conditions in the Kisumu County affect bank's liquidity. Only 10.8 % strongly disagreed while 10.8 % were neutral about the question.

**Table 4.10 Bi-Variate Pearson's Correlation between Economic Cycle and Banks' Liquidity**

Variable		Economic Cycle	Bank Liquidity
<b>Economic Cycle</b>	Pearson Correlation	1.000	
	Sig. (2-tailed)		
	N	74	
<b>Banks' Liquidity</b>	Pearson Correlation	0.336*	1.000
	Sig. (2-tailed)	0.018	
	N	74	74

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Source: Research Data, 2014**

The relationship between economic cycle and banks' liquidity was positive and significant ( $r = 0.336, p < 0.05$ ). This finding is consistent with previous studies (Horvath *et al.*, 2012; Berger and Bouwman, 2009 and Athanasoglou, 2011) who found that economic cycle trends positively influenced the level of bank liquidity.

Pearson's bi-variate results between economic cycle and bank liquidity show that economic cycle positively associates with banks' liquidity.

## CHAPTER FIVE

### SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents a summary of study findings, conclusions and recommendations based on the major findings.

#### 5.2 Summary of the findings

The first objective was to determine the association between monetary policy and banks' liquidity. The findings were that majority of the respondents believed that the change in CBK lending rate to commercial banks had an impact on bank's liquidity (Mean = 3.7973, Std.dev = 1.28190). The association between monetary policy and banks' liquidity was positive and significant ( $r = 0.559$ ,  $p < 0.01$ ).

The second objective of the study was to effect of government expenditure on liquidity level of Commercial banks in Kisumu CBD and the findings of the study were that majority of the respondents indicated that when the government is facing financial distress it affected banks' liquidity (Mean = 3.8919, Std.dev = 1.27749). The relationship between government expenditure and banks' liquidity was positive and significant ( $r = 0.256$ ,  $p < 0.05$ ).

The third objective of the study was to establish the effect of economic cycle on liquidity level of Commercial banks in Kisumu CBD. The study found that majority of the respondents indicated that general business conditions in the Kisumu County affected bank's liquidity (Mean = 3.5946, Std.dev = 1.3336). The relationship between economic cycle and banks' liquidity was positive and significant ( $r = 0.336$ ,  $p < 0.05$ ).

#### 5.3 Conclusions of the Study

The study conclusions are outlined as per the objectives as follows:

From the findings of objective one, it can be concluded that the association between monetary policy and banks' liquidity is positive and significant.

Objective two, it can be concluded that the effect of government expenditure is a significant positive predictor of banks' liquidity.

Finally, with regard to the findings of objective three, it can be concluded that the effect of economic cycle is a significant positive predictor of banks' liquidity.

## **5.4 Recommendations**

Based on conclusion of objective one, the CBK should continue to tightening monetary policies as this enhances liquidity of commercial banks in Kisumu CBD.

From the conclusion of objective two, the management of commercial banks and the CBK should monitor government expenditure and make appropriate adjustments as these were found to influence banks' liquidity positively.

Similarly, from conclusion of objective three, the management of commercial banks and the CBK should monitor economic cycle and make appropriate adjustments as these were found to influence banks' liquidity positively.

## **5.5 Limitations of the Study**

The outcome of the study cannot be generalized to all financial institutions since the study was limited to commercial banks in Kisumu CBD. The study adopted a descriptive research design. The use of predetermined questions may have forced respondents to respond to questions even without properly understanding them. Some respondents did not provide answers to all questions asked and this could have influenced the final result.

## **5.6 Suggestions for Further Research**

In order to improve this study, the researcher would like to suggest the following for further investigation. An exclusive study on the macro-economic factors that influence the banks' liquidity in Kenya. Future research should be conducted on categories of demographic characteristics. Such characteristics could be on the bank ownership and size of the bank among others.

Testing of the other factors that were put forward other than those tested by the questionnaire to determine their relative importance.

Further research could be conducted based on various geographical areas since such areas represent a variation in target markets and consequently the customers banking habits. Comparisons could be done on whether or not there is any variation or similarity.

A study of the non-banking financial institutions should be undertaken in order to make a comparison of the results. Since the study tested only the banking institutions, other financial institutions should be studied in order to compare the results.

## REFERENCES

- Adedeji A. (1975-86), "Towards a Dynamic African Economy". *Selected Speeches and Lectures*. 21<sup>st</sup> July 1975, Compiled and Arranged by Senghor J. c., Ghana.
- Allan B. (2003), *The Need for Liquidity Regulations*. Mauritius.
- Argenti, I. (2006), *Corporate Collapse: The Causes and Systems*. McGraw Hill, Boston.
- Averbach R. D. (2002), *Money Banking and Financial Markets*. 3<sup>rd</sup> edition. Mac Millan Publishing Company, New York.
- Bank of Mauritius. *Guidelines and Banking Act* (2007).
- Basel Committee on Banking Supervision (2008), "Liquidity risk: Management and supervisory challenges. Bank for International Settlements, Basel,
- Bathaluddin, M.B, Adhi, N.M, dan Wahyu, A.W. (2012). Dampak Persistensi Ekses Likuiditas terhadap Kebijakan Moneter. *Buletin Ekonomi Moneter dan Perbankan*. 14(3),45-87.
- Baumol I. W. and Blinder A. I. (2001), *Economics, Principles and Policy*. HBJ Publishers, San Diego.
- Beaver W. H.(2006), *Financial Ratios as a Predictor of Failure, Empirical Research in Accounting*. Selected Studies. Pp 71-111
- Berger, A.N., dan Bouwman, C.H.. (2009). Bank liquidity creation, monetary policy, and financial crises. University of South Carolina.
- Bernstein L.A. & Wild J. J. (2004), *Analysis of Financial Statements*. Fifth Edition. McGraw hill, New York.
- Bhattacharyya I and Sahoo S (2011), Economic research International; Comparative Statistics of Central Bank liquidity Management, Some insights, Volume 2011(2011).
- Brockington R. (2001), *A Concise Dictionary of Accounting and Finance*. Pitman Publishing, Great Britain.
- Brunnermeier M. and L. H. Pedersen (2005), "Predatory Trading" *The Journal of Finance*, 1825-63.
- Central Bank of Kenya (2002), Liquidity Regulations Supplement 72, Nairobi.
- Central Bank of Kenya (2010), Liquidity Regulations Supplement 72, Kenya
- Chong, C. S. & Goh, K. L. (2003). Linkages of economic activity, stock prices and monetary policy: the case of Malaysia.
- Comer G. M. (2004), *New Jersey Law Journal*, New Jersey.
- Cooper D. R. and Schindler P. S.(2003), *Business Research Methods*. International Edition, McGrawhill, Boston.



- Dernburg F. (2005), *Economics, Concepts, Theories and Policies*. 6<sup>h</sup> Edition. McGraw Hill, New York.
- Drehmann, M, and N. Nikolaou (2008), "Funding Liquidity Risk: Definition and measurement
- Duettl H. and Zuniga M. (2001), *Effect of The Monetary Policy on Money Supply*. State University, Mississippi.
- Easterly W., Rodriguez C. A., and Schmidt H. K. (1994), *Public Sector Deficits and Macroeconomic Performance*. A World Bank Publication Oxford University Press, New York
- Eddy J. (2001), *Effect on Emerging Markets Infrastructure Finance*.
- Eljelli M. A. (2004), *Liquidity-profitability tradeoff: An empirical investigation in emerging market*. International Journal of Management Vol. 14. Emerald Publishing Ltd.
- Freixas, X., Martin, A., dan Skeie, D. (2009). Bank Liquidity, Interbank Markets, and Monetary Policy. *Federal Reserve Bank of New York Staff Reports*, no. 371.
- Gardner M. 1. & Mills D. L. (2004), *Managing Financial Institutions; An Asset Liability Approach*. The Dryden Press Harcourt Brace College Publishers, Philadelphia.
- Gordon 1. R. (2000), *Macro- Economics*. Little Brown and Co., Boston.
- Granger, C. W. J. 1986. Developments in the study of cointegrated economic variables. *Oxford Bulletin of Economics and Statistics* 48: 213-228.
- Hardwick P., Khan B., and Langmead 1. (2008), *An Introduction to Modern Economics*. 4<sup>th</sup> Edition. Longman, London .
- Hassan, A. H. (2003). Financial integration of stock markets in the Gulf: A multivariate cointegration analysis. *Journal of Business Management and Accounting* 8(3), 34-48.
- Hempel G., Simonson D. G. and Coleman A. B., (2003), *Bank Management Texts and Cases*. Fourth Edition. John Wiley and Sons inc., New York.
- Hubbard G. R. (2003), *Money, The Financial System And The Economy* 2<sup>nd</sup> Edition. Addison-Wesley, Massachusetts.
- Islam, M. (2003). The Kuala Lumpur stock market and economic factors: A general -to-specific error correction modeling test. *Journal of the Academy of Business and Economics*, 5 (4), 41-60.
- Islam, S. M. N. & Watanapalachaikul, S. (2003). Time series financial econometrics of the Thai stock market: a multivariate error correction and valuation model. *Journal of the Academy of Business and Economics*, 5(5), 81-98.
- Johansen, S. & Juselius, K. (1990). Maximum likelihood estimation and inference on

cointegration with application to the demand for money. *Oxford Bulletin of Economics and Statistics* 52: 169-210.

Kombo, D. K. & Tromp, D. L. A (2006). *Proposal and Thesis Writing*. Nairobi. Paulines Publications.

Kothari C. R. (2001), *Research Methodology; Methods and Techniques*. 2<sup>nd</sup> Edition. Wishwa Prakashan, New Delhi.

Lipsey R. G., Steiner P. O. & Sparks G. R.(2001), *Economics*. Third edition. Harper and Row Publishers, New York.

Litter L.S., Silber W.L. and Udell G. F. (2004), *Principles of Money, Banking, And Financial*

Loth R (2012); Liquidity Measurement Ratio: Current Ratio; Investopedia

*Markets*. 9<sup>th</sup> Edition. Addison Wesley, Massachusetts.

Maghyereh, A. I.( 2002). Causal relations among stock prices and macroeconomic variables in the small, open economy of Jordan. *Journal Pengurusan* 25:43-52.

Maysami, R. C., Loo, S. W., & Koh, T. K. (2004). Co-movement among sectoral stock market indices and cointegration among dually listed companies. *Journal Pengurusan* 23:33-52.

Maysami, R. C. & Koh, T. S. (2000). A vector error correction model of the Singapore stock market. *International Review of Economics and Finance* 9: 79-96.

Maysami, R. C. & Sim, H. H. (2002). Macroeconomics variables and their relationship with stock returns: error correction evidence from Hong Kong and Singapore. *The Asian Economic Review* 44(1): 69-85.

Maysami, R. C. & Sim H. H. (2001a). An empirical investigation of the dynamic relations between macroeconomics variable and the stock markets of Malaysia and Thailand. *Journal Pengurusan* 20: 1-20.

Maysami, R. C. & Sim H. H. (2001b). Macroeconomic forces and stock returns: a general-to-specific ECM analysis of the Japanese and South Korean markets. *International Quarterly Journal of Finance* 1(1): 83-99.

Mukherjee, T. K. & Naka, A. (1995). Dynamic relations between macroeconomic variables and the Japanese stock market: an application of a vector error correction model. *The Journal of Financial Research* 18(2): 223-237.

Marshall A. (2003), *Principles of Economics*. The ELBS and MacMillan, London.

Mervin C. L.(2002), *Financing Small Corporations in Five Manufacturing Industries (1926-1936)*, National Bureau Of Economic Research.

Miegs R. F. & Miegs M. A. (2005), *Accounting; The Basis for Business Decisions*. Eleventh edition. Irwin Me. Grawhill, New York.

- Mukiri P. Maina (2001), *Perceived Service Quality: The Case of Mobile Phone Services*. Unpublished MBA Project.
- Mwinga M. (2002), June 2003, "*Liquidity Situations in Namibia*." The Namibia Economist. Pyxis Technologists, the Custodian of Business Intelligence. June 2003 .  
*Nairobi Residents*. Unpublished MBA Project.
- Niresh J.A (2012), Trade-off between liquidity and profitability. A study of selected manufacturing firms in Sri-lanka: Journal of Arts and Science and Commerce; Volume 111, No 4 (2).
- Nwaezeaku, N. C. (2006). *Theories and Practice of Financial Management*. Owerri. Ever Standard Publishing.
- Nwankwo U. (1992). *Economic Agenda for Nigeria*. Centralist Production Ltd. Lagos Nigeria.
- Nzzotta , S. M. (2004.) *Money, Bankung and Finance: Theory and Practice*. Owerri. Report on Banking Supervision.
- Omran, M. M. 2003. Time series analysis of the impact of real interest rates on stock market activity and liquidity in Egypt: Co-integration and error correction model approach. *International Journal of Business* 8(3), 45-76.
- Pontes, G. and Sol Murta, F. (2012). The determinants of the bank's excess liquidity and the credit crisis: the case of Cape Verde. Faculdade de Economia da Universidade de Coimbra.
- Ross L. (2001), *Individual Bank Characteristics*. Annual Report on Banking. Mauritius. Annual
- Saxegaard, M. (2006). Excess Liquidity and Effectiveness of Monetary Policy: Evidence from Sub-Saharan Africa. Working paper, International Monetary Fund.
- Saunders A. (2000), *Financial Institutions Management: A Modern Perspective*. 3<sup>rd</sup> Edition. Irwin McGraw hill, Boston.
- Sinkey J. F. (2002); *Commercial Bank Financial Management, in the Financial Services Industry*. Fourth Edition. MacMillan, New York.
- Stals C. (2002), *The Current Monetary Situation and Implications for 1998 Investment Conference* by Huyshamer Stals, Johannesburg November.
- The Economist. August 9<sup>th</sup> - is" 2003. *Central Banks as Clear as Mud*. Page 56.
- The Economist. March 13<sup>th</sup> - 19<sup>th</sup> 2004. *Americas Monetary Policy Overflowing. Enough Liquidity, Its Time for the Fed to Start Rising Interest Rates*. Page 77.
- The Thailand *Monetary Policy Committee of 9<sup>th</sup> July*, (2001). Bank of Thailand.
- Vishnani, S. and Bhupesh, K.S. (2007). Impact of working capital management policies on corporate performance: An empirical study. *Global Business Review* 8, 267-89.

Vuyyuri, S. 2005. Relationship between real and financial variables in India: A cointegration analysis. *Global Business Review* 5, 187-99.

Wahiu W. (2008), *The Relationship Between Liquidity and Macro Economic Factors An Inter Industry Comparison*. Unpublished MBA Project.