THE EFFECTS OF CAPITAL ADEQUACY REQUIREMENTS ON LIQUIDITY OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

I declare that this research project is my original work and has not been presented for a degree in any other university.

Signature……..Date…….

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The research project has been submitted for examination with my approval as the University Supervisor

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DEDICATION

I dedicate my research work to my family and many friends. A special feeling of gratitude to my loving parents, whose words of encouragement and support has seen me through during the period of my study and to my sister and brothers for their moral support.

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My great appreciation and thanks goes to the Almighty God for His grace and good health. Secondly, to my supervisor Dr. Kennedy Okiro who passionately encouraged and guided me professionally throughout the study. I equally salute the University staff, for the adequate and timely resources.

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LIST OF ABBREVIATION

CIS- Credit Information Sharing

CBK- Central Bank of Kenya

CAR- Capital Adequacy Ratio

GDP- Gross Domestic Product

MFI- Micro Finance Institutions

R2- R-squared

ROE- Return on Equity

RWA- Risk weighted Average

ABSTRACT

The purpose of this study was to provide a better understanding on the effects of capital adequacy requirements on liquidity of commercial banks in Kenya. A research to determine the effects of capital adequacy requirements on liquidity was therefore carried out in order to bridge the gap in knowledge that is lacking by first understanding the effects of Capital adequacy on the commercial banks liquidity for all Commercial Banks in Kenya. Based on this research objective, a review of the relevant literature has been conducted, which was used to guide this study's data collection. A descriptive research design was employed. The target population of interest in was all the 43 commercial banks in Kenya. The data was collected from the secondary sources. The data was obtained from the CBK financial reports of 2010-2014 for all the banks in Kenya.The data was analyzed using descriptive statistics, regression and correlation analysis and analyzed using SPSS version 21.The study found that there was strong correlation coefficient between bank Liquidity Ratio and all independent variables. The findings concluded that capital adequacy, size of the bank and GDP growth rate all have a significant effects on liquidity ratio of commercial banks in Kenya. However size of the bank had the highest influence on liquidity ratio in banks followed by capital adequacy and GDP growth rate. With this finding in mind, the researcher recommends that the banks should reduce cash conversion cycle period so as it can lead the company liquidity higher. A careful reduction of cash conversion cycle period will improve the liquidity of a bank and excess cash can be reinvested in the bank.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The capital requirement is a bank regulation, which sets a framework on how banks and depository institutions must handle their capital. The first global minimum capital adequacy standard for the banking sector Basel I was agreed and adopted in 1988. It required banks to maintain minimum capital to asset ratio with the assets weighted using broad risk classifications. Basel II came in to effect in 2006 intended to keep the overall amount of capital required for the banking system as a whole broadly unchanged, while giving firms a modest incentive to incur the costs of building satisfactory models enabling them to adopt more advanced risk-sensitive approaches (Gudmundson, Nyoka, and Odongo, 2013).

Under Basel III banks will face stricter capital requirements implying that the ratio of equity to risk-weighted assets should increase to 8-12%. The aim of more stringent capital regulation is to increase banks' resilience to future financial downturns. Currently, there is a debate whether such an increase in capital requirements really benefits the economy as a whole. The basic concern is that banks' response to new capital regulation will be to reduce credit and increase lending rates, which, in turn, may deepen the economic recession. Capital reduces limited-liability-driven incentives of bank shareholders to take excessive risk by increasing their potential loss in case of bank failure (Holmstrom and Tirole, 1997; Perotti, 2011). The Basel III text sets a transition timetable for the implementation of the requirements. Although countries are required to implement the minimum ratios by 2015 in order to be compliant with Basel III, the capital conservation buffer is being phased in

and is not required to be fully implemented until 2019. The leverage ratio is subject to testing between 2013 and 2017 and does not become a core Basel III requirement until 2018.

In Kenya, the Central Bank of Kenya (CBK) increased the minimum capital requirement, aimed at strengthening institutional structures and improving resilience of the banking industry. According to the Finance Act (2008) new and existing banks have to comply with a minimum capital requirement of KES 1 billion (approximately US$ 12 million) as of December 2012, up from KES 250 million (US$4 million) in 2008, and in December 2014, the national treasury increased minimum requirement capital to KES 5 billion to be attained by December 2018,in order to operate as a commercial bank in Kenya. The main reason for the hastened build-up of capital was the perception that stronger banks are likely to withstand financial turbulences and therefore increase banking sector stability and growth. Higher capital for banking sector could encourage mergers of smaller lenders to have bigger banks to take up opportunities in the economy.

1.1.1 Capital Adequacy

Capital adequacy is the determination of the minimum capital amount required to satisfy a specified economic capital constraint (Miccolis, 2002). This is usually expressed as a capital adequacy ratio of equity that must be held as a percentage of risk-weighted assets. Capital requirements govern the ratio of equity to debt, recorded on the assets side of a firm's balance sheet. They should not be confused with reserve requirements, which govern the liabilities side of a bank's balance sheet in particular, the proportion of its assets it must hold in cash or highly-liquid assets (Bindseil, 2004).

Banks capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs. Greater bank capital reduces the chance of financial distress. Adequacy of capital is judged on the basis of capital adequacy ratio (CAR). CAR ratio shows the internal strength of the bank to withstand losses during crisis as sited by Dang (2011). A bank has many risks that must be managed carefully, especially since a bank uses a large amount of leverage. Without effective management of its risks, it could very easily become insolvent (Aburime, 2005). In 2013, Central Bank of Kenya (CBK) issued prudential guidelines requiring banks to maintain capital conservation buffer of 2.5% above the capital adequacy ratios. The rule took effect on January 2015 and has seen a number of banks busy in the market seek additional funds. As per the CBK Prudential Guideline on Capital Adequacy, the minimum regulatory capital adequacy requirements that are measured by the ratio of Core Capital and Total Capital to Total Risk Weighted Assets were 8.0 per cent and 12.0 per cent respectively. The decline is attributable to higher increase in total risk weighted assets, which grew by 31.0 per cent compared to the increase in the core capital and total capital, which grew by 20.5 per cent and 24.6 per cent respectively (CBK, Bank Supervision Annual Report 2014).

On the one hand, capital adequacy is seen as an instrument limiting excessive risk taking of bank owners with limited liability and, thus, promoting optimal risk sharing between bank owners and depositors. On the other hand, capital adequacy regulation is often viewed as a buffer against insolvency crises, limiting the costs of financial distress by reducing the probability of insolvency of banks (Caggiano and Calice, 2011).

1.1.2 Liquidity

According to Holmstrom and Tirole(1998),banks are better positioned than the financial markets to guarantee firms against liquidity shocks that may affect their investments because they can commit to finance firms in the future. Berger and Bouwman (2005) document that this is an important activity for banks because about half of the liquidity they create is done via loan commitments. Further, there is abundant evidence that banks' funding choices affect their credit provision role to corporations, suggesting that they may also affect their ability to provide liquidity to corporations. Finally, as banks increased their use of the wholesale funding markets and broadened their liquidity provision role to include special purpose vehicles (SPVs) and conduits, they became exposed to new sources of liquidity shocks with potential effects on their ability to provide liquidity.

Higher capital improves banks' ability to create liquidity. Liquidity creation exposes banks to risk, the more liquidity is created, the greater are the likelihood and severity of losses associated with having to dispose of illiquid assets to meet the liquidity demands of customers (Diamond and Dybvig 1983). Recent contributions suggest that bank capital may impede this liquidity creation process because bank capital diminishes the financial fragility that facilitates the liquidity creation process (Diamond and Rajan, 2000, 2001). According to the theory of financial intermediation, an important role of banks in the economy is to provide liquidity by funding long-term, illiquid assets with short-term, liquid liabilities. Through this function, banks create liquidity as they hold illiquid assets and provide cash and demand deposits to the rest of the economy.

According to Berger and Bouwman,(2005) for large banks, the net effect of capital on liquidity creation to be positive and statistically significant, consistent with empirical dominance of the risk absorption effect. In sharp contrast, they found a negative, statistically significant effect of capital on liquidity creation for small banks, consistent with dominance of the financial fragility-crowding out effect. Liquidity held by commercial banks depicts their ability to fund increases in assets and meet obligations as they fall due. The Kenyan banking sector's average liquidity in the twelve months to December 2014 was above the statutory minimum requirement of 20 per cent, with all the banks meeting the minimum requirement (CBK, Bank supervision report 2014).

1.1.3 Relationship between Capital Adequacy and Liquidity

Liquidity is one of the important financial stability indicators since liquidity shortfall in one bank can cause systemic crisis in the banking sector due to their interconnected operations. Banks with sufficient capital should be able to obtain extra liquidity from the central bank against adequate collateral. Furthermore, the aim of the New Basel Accord to create a better alignment of regulatory capital with the risk to which banks are exposed, and the stronger focus on diversification, should eventually reduce mismatches between solvency and effective liquidity (Lannoo & Casey, 2005). Regulation affects market quality, an important component of which is liquidity. Great strides have been made in improving market design in recent years, as a result of both more effective self-regulation and better-targeted government regulation, with positive consequences for liquidity. Confidence-enhancing market rules, such as best execution and price transparency requirements, and competition among market-makers, leading to reduced transaction costs from trading, are but just two examples of how market structure can influence liquidity (Levin, 2003).

Exposure to common liquidity shocks has become an increasingly important source of vulnerability to market risk today. Whereas in the past, the concept of liquidity focused more on asset-specific liquidity or institutional liquidity, a bank's ability to effectively manage its liabilities without inducing excessive funding gaps, recent research points to aggregate, or market, liquidity effects, since the characteristic liquidity of assets is seen to co-vary (Porter, 2003). Regulatory attention has turned to banks, because they are increasingly vulnerable to wider fluctuations in market liquidity. Banks must therefore pay more attention to market liquidity, because its changing nature means that their traditional approach to liquidity management, which is intimately tied to asset liability management) is no longer sufficient (Lannoo & Casey, 2005).

Since liquidity is a major component of risk, it would seem logical that banks should set aside reserves of capital to mitigate this risk. In fact, there is evidence that they already do so. According to Hartmann (2004), if banks endogenize the capital decision, they will keep capital reserves above those required by the minimal regulatory capital amount in order to have a buffer against shocks to asset prices. But the fact that banks set aside liquidity reserves abstracts from the difficulties of implementing a common regulatory approach to managing liquidity risk.

1.1.4 Commercial Banks in Kenya

The companies Act, the Central Bank of Kenya (CBK) Act and the Banking Act are main regulators and governors of banking industry in Kenya. These Acts are used together with the prudential guidelines which Central bank of Kenya issues from time to time. In 1995, the exchange controls were lifted after the liberalization of the banking sector in Kenya.

As at 31st December 2014, the banking sector comprised of the Central Bank of Kenya, as the regulatory authority, 43 commercial banks and 1 mortgage finance company, 8 representative offices of foreign banks, 9 Microfinance Banks (MFBs), 2 Credit Reference Bureaus (CRBs), 13 Money Remittance Providers (MRPs) and 87 Foreign Exchange (forex) Bureaus. Out of the 44 banking institutions, 30 were locally owned banks that were comprised of 3 with public shareholding and 27 privately owned while 14 were foreign owned (CBK, Bank Supervision Annual Report 2014).

The outlook for Kenya's banking sector remains positive as regards the key pillars of stability, inclusiveness and integrity. Ongoing infrastructure investments currently being undertaken by the Government as well as other planned projects, both public and private, are expected to sustain growth in the demand for credit in 2015. Regulatory initiatives such as increased transparency in credit pricing, further entrenchment of the CIS mechanism and enhancement of the agency banking model are expected to impact positively on the banking sector's competitive structure and asset quality (CBK, Bank Supervision Annual Report 2014).

The Central Bank makes and enforces rules which govern the minimum capital requirement for Kenyan banks and are based on the international standards developed by the Basel Committee. The Kenya's banking sector has over the year complied with the implementation of the Basel accords, with implementation of Basel I and Base II being done in phases. The amendments by CBK through the Finance Act 2008 raised the minimum capital was intended to strengthen institutional structures in the banking sector (Sentero, 2013).

1.2 Research Problem

The global financial crisis in 2007-2009 inspired a growing literature on detecting systemic risks and characterizing their impact on financial stability. As liquidity problems of some banks during global financial crisis showed, liquidity is very important for functioning of financial market and the banking sector (Vodova, 2013). Capital adequacy ratios and liquidity requirements are two important regulatory instruments, which have typically been studied separately in banking theory and policy analysis. Regarding capital ratios, holding more capital increases the banks' stake and leads them to more prudent investment decisions. A drawback of this instrument is that raising capital is costly for banks. Liquidity requirements, holding a liquidity buffer makes banks more resilient under distress, but also implies a higher opportunity cost of foregone investment in high yield, risky assets (Cao & Chollete, 2014).The potential effects of bank capital on liquidity creation raise important research and policy issues. The research issues include the question of why banks generally have the lowest capital ratios of any industry; and why banks tend to fund loans with demandable deposits, creating potentially fragile institutions that are subject to runs. Recent contributions suggest that bank capital may impede this liquidity creation process because bank capital diminishes the financial fragility that facilitates the liquidity creation process (Diamond and Rajan, 2000, 2001).

Berger and Bouwman (2007) attempts to correct this situation by offering a new method for measuring liquidity created by banks and investigating the role of bank capital in liquidity creation for the US banks. The role of capital in minimizing the impact of losses has received considerable attention. However, how bank capital impacts liquidity creation should also be taken into account when assessing the role of capital on financial stability

Vodova (2011) did a study on determinants of commercial banks' liquidity in Poland, where, the results of panel data regression analysis showed that bank liquidity is strongly determined by overall economic conditions and dropped as a result of financial crisis, economic downturn and increase in unemployment.

Study by (Thumbi, 2013) on the effect of credit risk and working capital on capital adequacy suggested that credit risks, liquidity risk and bank size are important variables that influence banks' capital adequacy. The study found that there was strong positive association between capital adequacy and working capital. In general, the both credit and liquidity risk in banking sector influence the capital adequacy of commercial banks in Kenya positively. Santero, (2012) examined the effect of capital adequacy ratio on the efficiency of commercial banks and evidence found determined the correlation between the capital adequacy and efficiency of commercial banks.

Maore (2006) analyzed the determinants of liquidity of commercial banks. The aim of this study was to establish whether the determinants of liquidity are empirically robust. The study indicated that significant factors that determine the liquidity of the commercial banks in Kenya are liquid liabilities, growth and maturity. Liquid liabilities and maturity had a positive impact on liquidity whereas growth has a negative impact. Muriithi, (2014) conducted a study on the effect of non-performing loans on liquidity risk of commercial banks in Kenya. The findings of the study indicated that non-performing loans had an effect on liquidity risk among commercial banks in Kenya when banks with large capital had higher level of non-performing loans. Capital adequacy was indicated to affect liquidity of commercial banks when banks with large capital had little exposure to negative liquidity risk.

Research on the effects of capital requirement on liquidity of commercial banks in developing countries has received little attention despite rapid growth in this literature over the years. However, this literature generally does not tell us much about the effects on liquidity of commercial banks. A research to determine the effects of capital adequacy requirements on liquidity should therefore be carried out in order to bridge the gap in knowledge that is lacking by first understanding the effects of Capital adequacy on the commercial banks liquidity for all Commercial Banks in Kenya.

This research intends to address the research question: what the effects of capital adequacy requirements on liquidity of commercial banks in Kenya?

1.3 Research Objective

To determine the effects of capital adequacy requirements on liquidity of commercial banks in Kenya.

1.4 Value of the Study

Capital adequacy requirement and banks liquidity are clearly of enormous importance for regulators, industry participants and investors. The results of this research will have implications and importance to various stakeholders.

To regulators and policy makers, the research will provide the basis for regulatory policy framework to mitigate the financial system from financial crises. The findings will also help them in their efforts to monitor the commercial banks liquidity in relation to capital adequacy.

To the commercial banks the study will give insight to the management core capital and liquidity and contribute to the stock of existing body of knowledge.

It will also provide a basis for further research in capital adequacy, focusing on developing countries. Future researchers will have a reference point from the information gathered that will contribute to understanding of capital adequacy and liquidity in the financial sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses theories relevant to the study It follows the conceptual framework, incorporate scholarly works and theories.

2.2 Theoretical Review

This section contains review of theories relevant to the study. The literature is based on authoritative, recent and original sources such as journals, books, theses and desertions.

2.2.1 Financial Intermediation Theory

Financial intermediation theory suggests that liquidity creation is one of banks' raisons d'être (Diamond and Dybvig, 1983). Banks' ability to create liquidity may be hampered during times of distress. This is a primary source of concern because bank distress can negatively affect the overall provision of liquidity to the real economy (Bernanke, 1983; Ongena et al., 2003). Distressed banks may be subjected to different types of interventions. While regulators primarily focus on reducing risk at such banks in order to preserve them as going concerns, their actions may affect bank liquidity creation as well. It is therefore not surprising that issues surrounding bank liquidity creation and risk taking during episodes of stress lie at the heart of the discussion of academics, central banks, regulatory authorities, and policymakers (Bank of England, 2008).

According to the theory of financial intermediation, an important role of banks in the economy is to provide liquidity by funding long term, illiquid assets with short term, liquid liabilities (Wang, 2002). Through this function of liquidity providers, banks create liquidity as they hold illiquid assets and provide cash and demand deposits to the rest of the economy. Krueger (2002) emphasize the preference for liquidity under uncertainty of economic agents to justify the existence of banks: banks exist because they provide better liquidity insurance than financial markets. However, as banks are liquidity insurers, they face transformation risk and are exposed to the risk of run on deposits. More generally, the higher is liquidity creation to the external public, the higher is the risk for banks to face losses from having to dispose of illiquid assets to meet the liquidity demands of customers (Horne and Wachowicz, 2000).

2.2.2 The Financial Fragility Theory

Diamond and Rajan (2000, 2001) model a relationship bank that raises funds from investors to provide financing to an entrepreneur. The entrepreneur may withhold effort, which reduces the amount of bank financing attainable. More importantly, the bank may also withhold effort, which limits the bank's ability to raise financing. A deposit contract mitigates the bank's holdup problem – because depositors can run on the bank if the bank threatens to withhold effort – and therefore maximizes liquidity creation. Providers of capital cannot run on the bank, which limits their willingness to provide funds, and hence reduces liquidity creation. Thus, the higher a bank's capital ratio, the less liquidity it will create.

Diamond and Rajan's model builds on Calomiris and Kahn's (1991) argument that the ability of uninsured depositors to run on the bank in the event of expected wealth expropriation by bank managers is an important disciplining mechanism. A related idea is proposed by Flannery (1994), who provides a rationale for maturity mismatching that does not focus on liquidity creation. Flannery's model focuses on the disciplining effect of depositors' ability to withdraw funds on demand, and thus prevent the bank from expropriating depositor wealth through excessively risky investments. Gorton and Winton (2000) show how a higher capital ratio may reduce liquidity creation through the crowding out of deposits. They argue that deposits are more effective liquidity hedges for investors than investments in bank equity capital. Thus, higher capital ratios shift investors' funds from relatively liquid bank deposits to relatively illiquid bank capital, reducing overall liquidity for investors.

2.2.3 The Risk Absorption Theory

According to Berger and Bouwman (2009) this insight is based on two strands of the literature that is the risk absorption theory predicts that higher capital enhances the ability of banks to create liquidity (Allen and Gale, 2004), and the other is bank capital allows the bank to absorb greater risk (Repullo, 2004). The standard view of liquidity creation is that banks create liquidity by transforming illiquid assets into liquid liabilities. Diamond and Rajan, (2000, 2001) and Gorton and Winton (2000) show, however, that banks can create more or less liquidity by simply changing their funding mix on the liability side. Thakor, (1996) shows that capital may also affect banks' asset portfolio composition, thereby affecting liquidity creation through a change in the asset mix. Berger and Bouwman, (2009) measures of liquidity creation incorporated these insights; they explicitly recognize that

liquidity creation by banks occurs through changes in the mixes on both sides of the balance sheet as well as off-balance sheet activities.

2.2.4 Theory of Bank Liquidity Requirements

Charles, Florian and Marie (2012) theory of Bank Liquidity Requirements states that, not only does cash mitigate the liquidity risks attendant to exogenous shocks; it also mitigates endogenous (banker-chosen) default risk. In the model, costly state verification makes debt the optimal form of outside finance (Calomiris, 1991). There is a conflict of interest between the banker/owner and the depositors with respect to risk management; the banker suffers a private cost from managing risk, and does not always gain enough as the owner to offset that cost (Tirole, 2010). Greater cash holdings increase the marginal gain to the banker from managing risk, and thereby encourage greater risk management.

Diamond and Dybvig (1983), physical costs of liquidation make liquidity risk (the possible need to finance early consumption) costly, which could motivate the holding of inventories of liquid assets. In Calomiris and Kahn, (1991), depositors receive noisy and independent signals about the risky portfolio outcome of the bank. By holding reserves, banks insulate themselves against the liquidity risk of a small number of misinformed early withdrawals in states of the world where the outcome is actually good. Without those reserves, banks offering demandable debt contracts (which are optimal in the Calomiris-Kahn model) would unnecessarily subject themselves to physical liquidation costs when they fail to meet depositor's requests for early withdrawal

2.3 Determinants of Capital Adequacy Ratio

Capital adequacy ratio (CAR) is the ratio that is set by the regulatory authority in the banking sector, and this ratio can used to test the health of the banking system, this ratio has mandatory requirement imposed by the state bank because this ratio ensures that the bank has the ability to absorb the reasonable amount of losses.

2.3.1 Risk Level

It is generally accepted that the capital is considered as shock absorber, due to unexpected losses, which reducing the probability of the insolvency and the cost of bankruptcy will managed, therefore the capital ratio set by the central bank is not fully reflected the risk faced by the banks, the risk of financial distress caused by the loss of franchise value. The risk level of banking sector can be measure through the RWA (risk weighted assets/Total assets). There is negative relationship between the capital adequacy ratio and the risk faced by portfolio. Therefore the capital adequacy ratio of the banks may differ from the regulatory authority due to the level of risk and size of banks, the risk assessment is conduct their own and the calculation of the risk-weighted assets may differ from other banks under the current method of the Basel II and regulations.

2.3.2 Alternative Cost of the Capital

Alternative capital cost is a major component of Capital Adequacy Ratio (CAR) in the banking system. Return on Equity (ROE) is more suitable tool for the analysis of the alternative cost of capital. Return on Equity (ROE) is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet (Athanasoglou et al., 2005). ROE is what the shareholders

look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally.ROE reflect the ability of the bank to use its own funds to generate profits (Yilmaz, 2013). When the cost of capital is low, then holding of excess capital then the regulatory requirements does not effect on the profitability. As the rate of alternative cost of capital increases there is willingness to decrease the holding more capital.

2.3.3 Share of Deposits in Non-Equity Liabilities

Another major factor that contributes in determining the CAR for the banks is funds deposited by the bank's clients. Deposits are cheap source of finance as compare to the external source of finance, such as bonds, loans from business angels and through syndications (Kleff & Weber, 2003). Hence the decrease in deposits trends will affect the increase in the cost of the borrowing through external sources; increase in the cost of alternative borrowing will reduced profit margin of the banks, more funds will be required to compensate the shortfall in profitability. Deposits include demand deposit and term deposits. They show the share of deposits compared to total assets. In order to understand the effect of deposits on the Capital Adequacy Ratio (CAR), the share of deposits in non liabilities is considered as variable in panel regression analysis.

2.3.4 The Average Capital Adequacy of the Sector

M&M theory on the capital structure is based on the assumption that market is fully efficient and flow of information is symmetry, however it difficult for the investors they gain complete information it also difficult for market participants to gain complete set of information that is relating to the market.

2.3.5 Economic Growth

Economic growth is the vital component which explaining the CAR (Capital Adequacy Ratio), Growth rate of gross domestic product shows the growth of economic activity in the country (Ayadi and Boujelbène, 2012). In the positive economic growth period there is low risk and the banks retain low capital ratio and make more investments in other financial sectors, while when there is negative growth rate then banking may need the relatively high capital or may face sudden economic losses, to hedge that risk banks maintain high capital ratio.

2.4 Empirical Review

Deep and Schaefer (2004) came up with a measure of liquidity transformation and apply it to data on the 200 largest U.S. banks from 1997 to 2001. They defined the liquidity transformation gap as (liquid liabilities – liquid assets) / total assets. They considered all loans with maturity of one year or less to be liquid, and they explicitly excluded loan commitments and other off-balance sheet activities because of their contingent nature. They found that the liquidity transformation gap is about 20% of total assets on average for their sample of large banks. They concluded that these banks do not appear to create much liquidity, and run some tests to explain this finding, examining the roles of insured deposits, credit risk, and loan commitments

Diamond and Rajan (2000 and 2001) model a relationship bank that raises funds from investors to provide finance to an entrepreneur. More importantly, the bank may also withhold effort, which limits the bank's ability to raise financing. A deposit contract mitigates the bank's hold up problem because depositors can run on the bank if the bank

threatens to withhold effort and therefore maximizes liquidity creation. Providers of capital cannot run on the bank, which limits their willingness to provide funds, and hence reduces liquidity creation. Thus, the higher a bank's capital ratio, the less liquidity it will create. Diamond and Rajan's model builds on Calomiris and Kahn's, (1991) argument that the ability of uninsured depositors to run on the bank in the event of expected wealth expropriation by bank managers is an important disciplining mechanism. A related idea is proposed by Flannery (1994), who provides a rationale for maturity mismatching that does not focus on liquidity creation. Flannery's model focuses on the disciplining effect of depositor's ability to withdraw funds on demand, and thus prevent the bank from expropriating depositor wealth through excessively risky investments

Berger and Bouwman, (2009) made a major contribution by suggesting a new method for measuring the liquidity created by banks. They proposed classification of all balance-sheet items as either liquid, semi-liquid, or illiquid. This classification applies to all items in a bank's assets, liabilities, equity, and off-balance-sheet activities. They then use four different measures of liquidity creation for each of the items. Two measures are based on a category classification of the balance-sheet items, while two measures are based on maturity. For each type, one measure includes off-balance sheet activities, while the other does not. They use this method to measure liquidity creation in the US banking industry between 1993 and 2003. They find that liquidity creation increased substantially between 1993 and 2003, as the US banking industry created $2.8 trillion in liquidity in 2003. They find that the relation between capital and liquidity creation varies with size and depending on whether off-balance-sheet items are added to the liquidity creation measure. With measures that include off-balance-sheet items, the relation is positive for large banks, not significant for medium banks, and negative for small banks

Kashyap, Rajan, and Stein (2002) provide empirical evidence of synergies between commitment lending and deposits, consistent with their model, but do not test the effect of bank capital on liquidity creation. Gatev, Schuermann, and Strahan (2004) and Gatev and Strahan find that banks have a comparative advantage in hedging liquidity risk in the economy because banks experience deposit inflows following a market crisis or liquidity shock that allow them to have more funds to provide the additional loans drawn down under commitments at such times. These studies do not focus on the role of bank capital and they do not examine the effect of bank capital on loan commitments. However, they do include the capital ratios in regressions of some liquidity categories, yielding ambiguous predictions related to the effect of capital on liquidity creation. For example, Gatev and Strahan find that a higher bank capital ratio tends to be followed by greater loans and deposits (which may increase liquidity creation) and greater liquid assets and non deposit liabilities which may reduce liquidity creation.

Fungáčová et al. (2010) extend the debate by analyzing how a deposit insurance scheme affects this relation. To do so, they study Russia. Russia provides a natural experiment to investigate this issue because a deposit insurance scheme was implemented there in 2004. Even if the deposit insurance scheme has effects, its implementation does not change the sign of the relation. They find a negative relation between capital and liquidity creation before and after the deposit insurance scheme. Moreover, they observe that the relation varies with size and ownership. It is significantly negative for small and medium banks and for private domestic banks, while the relation is not significant for large banks, foreign banks, and state-owned banks.

Barth et.al, (2004) used data on bank regulations and supervision in 107 countries to assess the relationship between specific regulatory and supervisory practices and banking-sector development, efficiency, and fragility. The results raise a cautionary flag regarding government policies that rely excessively on direct government supervision and regulation of bank activities. The study by Demirguc¸-Kunt et.al (2003) analyzed the impact of bank regulations as well as other internal determinants; including concentration, and institutions, on bank profit margins. The study analyzes the impact of bank regulations, concentration, and institutions using bank-level data across 72 countries while controlling for a wide array of macroeconomic, financial, and bank-specific traits. Al – Maleeji (2002) conducted a study aimed at developing an accounting model for judging the Egyptian commercial banks and to establish a standard that includes various elements needed to assess capital adequacy, which reflects most of the risks facing commercial banks in general and credit, inflation liquidity and market risks in particular. The study reheated that capital adequacy established according to Basel banking decisions (1988) and Egyptian central bank decisions (1991), are not effective, as well as the new framework for capital adequacy

Gorton and Winton (2000) show how a higher capital ratio may reduce liquidity creation through the crowding out of deposits. They argue that deposits are more effective liquidity hedges for investors than investments in bank equity capital. Thus, higher capital ratios shift investors' funds from relatively liquid bank deposits to relatively illiquid bank capital, reducing overall liquidity for investors. Kim and Santomero, (1988) suggest that increases in bank capital requirements would induce bank risk taking and have perverse effects on bank safety. Furlong and Keeley,(1990) and Keeley and Furlong(1989), however, demonstrate that this conclusion depends upon the assumption of a constant cost of funds,

and therefore, it ignores the impacts that increased capital would have on reducing the risk exposure of debt-holders who would accept lower returns. Hence overall bank returns would be enhanced by increased capital requirements,' the positive correlation between returns and capital has been demonstrated by Berger (1994).

Campello's (2009) theory, that an increase in aggregate risk creates liquidity risk for banks leading them to increase the cost of liquidity for aggregate risky firms. They unveil supporting evidence for their theory by documenting a negative relationship between the fraction of the firm's liquidity that is provided by lines of credit and the beta of the lending bank

Longworth (2010) Bernanke (2008) noted that liquidity was an instrumental factor during the recent financial crisis. As uncertainty led funding sources to evaporate, many banks quickly found themselves short on cash to cover their obligations as they came due. In extreme cases, banks in some countries failed or were forced into mergers. As a result, in the interest of broader financial stability, substantial amounts of liquidity were provided by authorities in many countries, including Canada and the United States. Since liquid assets such as cash and government securities generally have a relatively low return, holding them imposes an opportunity cost on a bank.

Kamau (2004) used the simultaneous equations approach to model the regulatory impact of minimum capital requirements on bank risk behavior and capital levels in Kenya for the period 2000-2002. Using the three stages least square method the study estimated the relationship between capital adequacy ratio and the risk portfolio in the banking sector. The study findings revealed that risk-based capital requirements have been effective in

increasing capital for the capitalized bank while the effect has been minimal for the under-capitalized banks. According to the study findings, regulatory constraints affect bank behavior particularly for the capitalized banks

Ochieng,' (2006) studied the relationship between working capital of firms listed in NSE and economic activities in Kenya. The objective was to examine how the changes in economic activities affect changes in working capital by firms listed in NSE. The liquidity position of the 50 small firms included in this study as measured by the current and quick ratios increased slightly during economic expansions and decreased during economic slowdown, however the liquidity positions reacted differently to different economic indications.

Maore (2006) analyzed the determinants of the liquidity of the commercial banks in Kenya using a multiple linear regression model. The motivation was to establish whether the determinants of liquidity are empirically robust. The focus was exclusively on a cross section of 30 commercial banks in Kenya. The findings from a cross sectional analyses indicate that significant factors that determine the liquidity of the commercial banks in Kenya are liquid liabilities, growth and maturity. Liquid liabilities and maturity have a positive impact on liquidity whereas growth has a negative impact. The other factors such as liquid assets and cash flows have a positive but insignificant effect on the liquidity of commercial banks. Similarly, leverage, size, profitability and loan commitments have an insignificant negative effect on banks' liquidity.

Gudmundson, Nyoka, and Odongo, (2013), examined the banking sector in Kenya in relation to minimum capital requirement and its implications on bank competition. Using

two empirical measures of competition they analyzed the impact of core capital on banks' competition and performance. Using the Lerner index, which is the indicator of competitiveness to a number of variables, they found that regulatory efficiency improves competition in the banking sector. They found evidence that capital has a nonlinear effect on competition. The benefits of increasing capital requirements on competitiveness are realized once consolidation starts to take place (captured by core capital squared). Bank structure also has a significant and important effect on banking performance. The results point to the role of capital regulation on bank competition and the performance of banks and financial stability in Kenya. Moreover, the state of the macroeconomic condition is a major factor that determines the competition and performance of the banking industry.

Mugwang'a (2014) carried out a research on factors that determine Capital Adequacy of Commercial Banks in Kenya for the period 2009–2013 using Multiple Linear Regression Analysis and the Correlation Coefficient. The study showed that there existed a significant relationship between capital adequacy and capital risk. There was no existence of a significant relationship between capital adequacy and the following: liquidity risk, credit risk, interest rate risk, return on assets ratio, return on equity ratio and revenue power ratio. The liquidity risk, credit risk, capital risk, interest rate risk, return on asset ratio, return on equity ratio and revenue power ratio combined with a relatively high effect on the Capital Adequacy and the changes that occur within, as the percentage of the interpretation reached approximately eighty one percent

2.5 Summary of Literature Review

This research intends to examine the effects of capital adequacy requirements on liquidity of commercial banks in Kenya. The central bank requires banks to maintain certain levels of liquidity within the banks and with the recent increase on the capital requirements on the core capital of banks. Liquidity management theories try to bring into perspective how liquidity is measured and monitored, and the measures that banks can take to prevent or tackle a liquidity shortage.

Empirical literature sheds some insight on the relationship between bank capital and liquidity creation. A general conclusion, from above literature is that; there is some relative effect of capital regulation on liquidity. Some of the studies test the liquidity creation theories, but do not focus on the role of bank capital requirement. Studies of the recent financial crisis have focused on banks' role as providers of credit and disregarded their role as liquidity providers to corporations. The study recommend on how commercial banks can address the capital adequacy requirement and liquidity problems.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design and methodology of the study. It clearly describes the research design, the target population and the sampling design, data collection methods, as well as the methods to be used in analyzing the data and presentation.

3.2 Research Design

The study employed a descriptive research design. A research design is a master plan specifying the methods and procedures for collecting and analyzing the needed information (William, 2002). This is a plan of procedures used by a researcher to collect data. Descriptive design allows researchers to gather, present and interpret information for purposes of clarification. Descriptive study has its objective as a description of something in regard to who, what, where, when, and how, of a phenomenon, which is the concern of the current study hence descriptive research design will therefore be employed to study the effects of capital requirements on liquidity of commercial banks in Kenya.

3.3 Target Population

According to Mugenda and Mugenda (1999), a target population is one the researcher uses to generalize the result of the study. The study therefore targeted a population of all the 43 commercial banks in Kenya. The commercial banks that comprises of the population are banks that operated in Kenya registered and regulated by Central Bank of Kenya (CBK) and Kenya Bankers Association (KBA).

3.4 Data Collection

The study used data from secondary sources. The data for the banks was extracted from the banks' annual reports and financial statements for the period 2010-2014. This was obtained from the banks supervision department of the Central Bank of Kenya. Data collected was in areas of; capital adequacy ratio, growth rate (GDP) and bank size taking into account the total asset base of the bank which are the independent variables while liquidity as the dependent variable was also collected. Data on liquidity was obtained from banks' Statement of Financial Position.

3.5 Data Analysis

The data collected was analyzed using descriptive statistics, correlation, and linear regression analysis. In addition to the comparative analysis, the study examined the relationship between dependent variables (liquidity) and the independent variables (capital adequacy). Statistical Package for Social Scientists (SPSS) was used as a tool to help analyze the data.

3.5.1 Model and Variable

This study estimates a model to capture the relationship between capital adequacy requirement and liquidity. To analyze the relationship between capital adequacy and liquidity of all commercial banks in Kenya, regression analysis technique and correlation was used to establish whether a relationship exists or not and the extent of such a relationship.

Analytical Model

This study will adopt the following model:

$Y=\alpha+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\varepsilon$

Y=Liquidity Ratio

β=Beta Coefficient,α= Constant term

X_1= Capital Adequacy Ratio

X_2=Size = Natural logarithm of total assets

X_3= GDP growth rate

ε = Error term

The variables are to be computed as follows:-

Y = Represents the liquidity of the bank which is the dependent variable and it is measured by the banks liquidity ratio

$$\text{Liquidity Ratio(Y)} = \frac{\text{NLA}}{\text{TLL}}$$

GDP (growth rate) = C+I+G+(X-M)

Consumption(C), Investment (I), Government (G), Net exports (Import-M, Export-X)

$$\text{Capital Adequacy Ratio} = \frac{\text{CC}}{\text{TDL}}$$

It shows the strength of bank capital against the vagaries of economic and financial environment. Generally, the capital is positively related to the financial performance of banks (Gul, 2011).

Size = size of the bank = natural logarithm of total assets

Size can show the economies of scale. The large banks benefit from economies of scale which reduces the cost of production and information gathering (Boyd and Runkhle, 1993).

Test of significance

The significance of the effects of capital adequacy on liquidity of commercial banks will be analyzed using the regression analysis SPSS output. Test of significance include coefficient of correlation (R), coefficient of determination (R-squared), F-test and ANOVA. The F- test will be used to determine the significance of the regression while the coefficient of determination,R^2, will be used to determine how much variation in Y is explained by X.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents analysis and findings of the research.The analysis is based on the research objective the objective is tackled according to the analysis techniques designed in the methodology. Data collected was analyzed and the findings are as presented in this chapter inform of tables and narration/ discussion of the results. The objective of this study was to establish the effects of capital adequacy requirements on liquidity of commercial banks in Kenya.

4.2 Data Analysis and Findings

4.2.1 Findings on Capital Adequacy Ratio of Commercial Banks

The researcher sought to investigate trends in capital adequacy ($\frac{\text{C}\quad\text{C}}{\text{T}\quad\text{ID}\quad\text{L}}$) in commercial banks of Kenya from 2010 to 2014. The results are displayed on figure below.

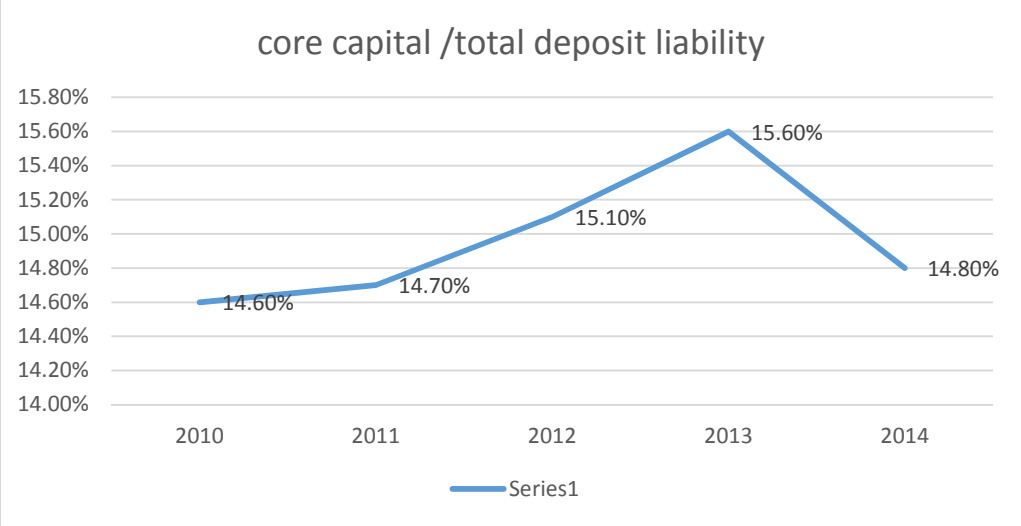

Figure 4.1: Descriptive Statistics on Capital Adequacy

The commercial banks system remained well capitalized during 2013 with the sector's core capital and total deposit liability at 15.6%. The capital adequacy was low 2010, 2011 2014 and 2012 (14.6%, 14.7% 14.8% and 15.1%) respectively.

Capital adequacy is the capital level required to maintain balance with the operational, credit and market risks exposure of the financial institution in order to accommodate potential losses and safeguard the debt holders of the financial institution. Bank supervisors use the capital-risk asset ratio to measure the capital adequacy Karlyn (1984). Capital adequacy focuses on the management ability to deal with marginal capital needs, the nature of the composition of the balance sheet, the quality of capital and ability to access sources of capital including capital markets, the volume of assets and capability of acquiring loans (Uniform Financial Institutions Rating System, 1997).

4.2.2 Size of the Bank

The researcher sought to investigate trends in Size of the commercial banks (Natural logarithm of total assets) from 2010 to 2014. The results are displayed on table below.

Table 4.1: Size of the Bank

Year	**Median (000,000)**	**Minimum (000,000)**	**Maximum (000,000)**	**Mean (000,000)**	**Std deviation**
2010	9.31	5.32	10.11	9.88	0.13
2011	10.11	6.44	11.91	10.90	0.54
2012	12.31	9.25	13.15	12.99	1.26
2013	12.41	8.47	11.54	12.33	1.13
2014	13.11	10.43	13.76	13.23	1.21

From the findings, it can be noted that the year 2014 recorded the highest value for the Size of financial Institutions as shown by a mean of value of 13.23 while the year 2010 recorded the lowest value for the Size of financial Institutions as shown by mean value of 9.88. In addition, values for stardard deviation depicts variability in Size of financial Institutions during the five year period with the highest deviation of 1.26 in the year 2012 and the lowest 0.13 in the year 2013. The findings revealed that there have been a significant increase in Size of financial Institutions during the five-year period.

Bank size accounts for the existence of economies or diseconomies of scale (Naceur & Goaied, 2008). The variable is measured as the natural log of total assets (Saona, 2011). Economic theory suggests that market structure affects firm performance (Haron, 1996) and that if an industry is subject to economies of scale, larger institutions would be more efficient and could provide service at a lower cost (Rasiah, 2010a). Also, the theory of the banking firm asserts that a firm enjoys economies of scale up to a certain level, beyond which diseconomies of scale set in. This implies that profitability increases with increase in size, and decreases as soon as there are diseconomies of scale. thus, literature has shown that the relationship between the bank size and profitability can be positive or negative (Staikouras & Wood, 2004; Athanasoglou et al., 2005; Flamini et al., 2009; Dietrich & Wanzenrid, 2009; Naceur & Omran, 2011).

4.2.3 GDP Growth Rate

The researcher sought to investigate trends in GDP growth rate (measured by Consumption(C), Investment (I), Government (G), Net exports (Import-M, Export-X)) in Kenya from 2010 to 2014. The results are displayed on table below.

Table 4.2: GDP Growth Rate

Year	GDP growth rate
2010	8.6%
2011	6.1%
2012	4.6%
2013	5.7%
2014	5.3%

The table above shows the trend in GDP growth rate in Kenya from the years 2010 to 2014. The findings show that the year 2010 recorded the highest percentage of GDP as shown by 8.6% while the year 2012 recorded the lowest GDP value of 4.6%. GDP growth rate is used as a proxy of business cycle in which banks operate, and controls for variance in profitability due to differences in business cycles which influence the supply and demand for loans and deposits. In this study, GDP is used in defining favorable/unfavorable conditions. Thus, higher GDP in 2010 indicates favorable business opportunities under which a bank can achieve higher profitability. This is because an increase in economic activities of the country signals that customers' demand for loans will increase, and with improved lending activities, banks are able to generate more profits.

According to Ommeren, (2011) economists traditionally use Gross Domestic Product (GDP) to measure economic progress. If GDP is rising, the economy is good and the nation is moving forward. If GDP is falling, the economy is in trouble and the nation is losing ground. From a strictly numerical perspective, GDP provides an easy-to-follow indicator of economic health. From the perspective of a citizen living with the day-to-day realities

of life, it’s misleading. The gross domestic product (GDP) is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period; you can think of it as the size of the economy. Usually, GDP is expressed as a comparison to the previous quarter or year. For example, if the year-to-year GDP is up 3%, this is thought to mean that the economy has grown by 3% over the last year.

Measuring GDP is complicated, but at its most basic, the calculation can be done in one of two ways: either by adding up what everyone earned in a year (income approach), or by adding up what everyone spent (expenditure method). Logically, both measures should arrive at roughly the same total. The income approach, which is sometimes referred to as GDP (I) is calculated by adding up total compensation to employees, gross profits for incorporated and non-incorporated firms, and taxes less any subsidies. The expenditure method is the more common approach and is calculated by adding total consumption, investment, government spending and net exports.

As one can imagine, economic production and growth, what GDP represents, has a large impact on nearly everyone within that economy. For example, when the economy is healthy, you will typically see low unemployment and wage increases as businesses demand labor to meet the growing economy. A significant change in GDP, whether up or down, usually has a significant effect on the stock market. It's not hard to understand why: a bad economy usually means lower profits for companies, which in turn means lower stock prices. Investors really worry about negative GDP growth, which is one of the factors economists use to determine whether an economy is in a recession.

4.3 CorrelationAnalysis

The Karl Pearson's product-moment correlation was used to analyse the association between the independent and the dependent variables. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by *r*. The Pearson correlation coefficient, *r*, can take a range of values from +1 to -1.

A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. A value less than 0 indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases. Pearson's Correlation Coefficient was carried out and the results obtained are presented in table below

Table 4.3: Correlation

		Liquidity Ratio	Capital Adequacy	size of the bank	GDP growth rate
Liquidity Ratio	Correlation Coefficient	1.000			
	Sig. (2-tailed)	.			
	N	215			
Capital Adequacy	Correlation Coefficient	.592	1		
	Sig. (2-tailed)	.004			
	N	215	215		
size of the bank	Correlation Coefficient	.611	.046	1	
	Sig. (2-tailed)	.008	.001	.	
	N	215	215	215	
GDP growth rate	Correlation Coefficient	.558	.018	.124	1.
	Sig. (2-tailed)	.013	.003	.000	.
	N	215	215	215	215

On the correlation of the study variable, the researcher conducted a Pearson moment correlation. From the finding in the table above, the study found that there was strong correlation coefficient between bank Liquidity Ratio and Capital Adequacy as shown by correlation factor of 0.592, this strong relationship was found to be statistically significant as the significant value was 0.004 which is less than 0.05, the study also found strong positive correlation between Liquidity Ratio and size of the bank as shown by correlation coefficient of 0.611, this too was also found to be significant at 0.001 level. The study also found strong positive correlation between bank Liquidity Ratio and GDP growth rate made through agents as shown by correlation coefficient of 0.558 at 0.013 level of confidence.

4.4 Estimated or Empirical Model

A multiple regression analysis was also conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions. The model summary are presented in the table below

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.838[a]	.702	.725	.35813

R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.838. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table the value of adjusted R squared was 0.702 indications that there was variation of 70.2 percent on liquidity of commercial banks due to changes in Capital Adequacy, size of the bank and GDP growth rate at 95 percent confidence interval. This shows that 70.2 percent changes in liquidity ratio of commercial banks could be accounted to changes in Capital Adequacy, size of the bank and GDP growth rate.

The study further tested the significance of the model by use of ANOVA technique. The findings are tabulated in table below.

Table 4.5: Summary of One-Way ANOVA Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	78.9	4	19.725	9.618	.000[b]
	Residual	79.980	39	2.0508		
	Total	158.88	43			

Critical value = 2.38

From the ANOVA statics, the study established the regression model had a significance level of .000 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (9.618>2.38) an indication capital adequacy, size of the bank and GDP growth rate all have a significant effects on liquidity ratio of commercial banks in Kenya. In addition, the study used the coefficient table to determine the study model. The findings are presented in the table below.

Table 4.6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.911	.232		3.926	.000
	Capital Adequacy	.488	.100	.357	4.88	.004
	Size of the bank	.489	.102	.376	4.794	.001
	GDP growth rate	.421	.113	.333	3.725	.008

As per the SPSS generated output as presented in table above, the equation

$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon}$ become:

$\mathbf{Y = 0.}911\mathbf{+ 0.}\ 488\mathbf{X_1 + 0.}\ 489\mathbf{X_2 + 0}.421\mathbf{X_3}$

The findings indicate that while holding other factors at constant a unit change in Capital Adequacy for year would lead to an increase in liquidity ratio of commercial banks in Kenya by a factor of by a factor of 0**.** 488, unit change in size of the bank would lead to an increase in liquidity ratio of commercial banks in Kenya by a factor of by a factor of 0.489, while holding other factors at constant a unit increase in GDP growth rate, would cause an increase in liquidity ratio of commercial banks in Kenya by a factor of 0.421. The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and α=0.05. If the probability value was less than α, then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than α=0.05.

4.5 Discussion of the Findings

Based on the findings the commercial banks system remained well capitalized during 2013 with the sector's core capital and total deposit liability at 15.6%. The findings also established that the year 2014 recorded the highest value for the Size of bank measured by natural logarithm of total assets as shown by a mean of value of 13.23 this implied that there have been a significant increase in Size of commercial banks during the five-year period.The findings further revealed that the year 2010 recorded the highest percentage of GDP as shown by 8.6%. On the correlation of the study variable, the researcher conducted

a Pearson moment correlation. The study found that there was strong correlation coefficient between bank Liquidity Ratio and all independent variables (capital adequacy, size of the bank and GDP growth rate). On regression analysis the model had an average adjusted coefficient of determination (r^2) of 0.702 an indication that there was variation of 70.2 percent on liquidity of commercial banks due to changes in Capital Adequacy, size of the bank and GDP growth rate at 95 percent confidence interval. The study further established that the model used had a significance level of .000 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (9.618>2.38) an indication Capital Adequacy, size of the bank and GDP growth rate all had a significant effects on liquidity ratio of commercial banks in Kenya. On coefficients the findings indicated that while holding other factors at constant a unit change in Capital Adequacy for year would lead to an increase in liquidity ratio of commercial banks in Kenya by a factor of by a factor of 0**.** 488, unit change in size of the bank would lead to an increase in liquidity ratio of commercial banks in Kenya by a factor of by a factor of 0.489, while holding other factors at constant a unit increase in GDP growth rate, would cause an increase in liquidity ratio of commercial banks in Kenya by a factor of 0.421. The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and α=0.05. If the probability value was less than α, then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than α=0.05.

These findings concur with Lannoo& Casey (2005) findings that banks with sufficient capital should be able to obtain extra liquidity from the central bank against adequate collateral. Additionally, Bernanke, (2008) pointed out that great strides have been made in improving market design in recent years, as a result of both more effective self-regulation and better-targeted government regulation, with positive consequences for liquidity. Confidence-enhancing market rules, such as best execution and price transparency requirements, and competition among market-makers, leading to reduced transaction costs from trading, are but just two examples of how market structure can influence liquidity (Levin, 2003). According to Hartmann (2004), if banks endogenize the capital decision, they will keep capital reserves above those required by the minimal regulatory capital amount in order to have a buffer against shocks to asset prices. But the fact that banks set aside liquidity reserves abstracts from the difficulties of implementing a common regulatory approach to managing liquidity risk.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the findings, conclusions, the discussion, recommendations of the study on the basis of the objective of the study and also the suggestions for further research.

5.2 Summary of the Findings

The aim of this study was to investigate the effects of capital adequacy requirements on liquidity of commercial banks in Kenya. Specifically the study established that effects of capital adequacy measured by (ratio between core capital and total deposit liability), size of the bank and GDP growth rate on liquidity of 43 commercial banks in Kenya. The study used both correlation and regression analysis to establish the relationship between the variable under study.

Using the correlation analysis the study found that there was strong correlation coefficient between bank Liquidity Ratio and all independent variables (capital adequacy, size of the bank and GDP growth rate). On regression analysis the model had an average adjusted coefficient of determination (r^2) of 0.702 indication that there was variation of 70.2 percent on liquidity of commercial banks due to changes in Capital Adequacy, size of the bank and GDP growth rate at 95 percent confidence interval. The study further established that the model used had a significance level of .000 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (9.618>2.38) an

indication Capital Adequacy, size of the bank and GDP growth rate all had a significant effects on liquidity ratio of commercial banks in Kenya. On coefficients of determination, the findings indicated that while holding other factors at constant a unit change in Capital Adequacy for year would lead to an increase in liquidity ratio of commercial banks in Kenya by a factor of by a factor of 0**.** 488, unit change in size of the bank would lead to an increase in liquidity ratio of commercial banks in Kenya by a factor of by a factor of 0.489, while holding other factors at constant a unit increase in GDP growth rate, would cause an increase in liquidity ratio of commercial banks in Kenya by a factor of 0.421. The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and α=0.05. If the probability value was less than α, then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than α=0.05.

5.3 Conclusion

Based on the findings it can be concluded that capital adequacy, size of the bank and GDP growth rate all have a significant effects on liquidity ratio of commercial banks in Kenya. However size of the bank had the highest influence on liquidity ratio in banks followed by capital adequacy and GDP growth rate. This was an implication that capital adequacy, size of the bank and GDP growth rate promoted liquidity ratio in banks.

Capital adequacy is the capital level required to maintain balance with the operational, credit and market risks exposure of the financial institution in order to accommodate potential losses and safeguard the debt holders of the financial institution. Bank supervisors use the capital-risk asset ratio to measure the capital adequacy. Capital adequacy focuses

on the management ability to deal with marginal capital needs, the nature of the composition of the balance sheet, the quality of capital and ability to access sources of capital including capital markets, the volume of assets and capability of acquiring loans. Thus, study findings has shown that the relationship between the capital adequacy and liquidity was positive from 2010 to 2014 even though capital adequecy had irregular trend.I.e. the commercial banks g system remained well capitalized during 2013 with the sector's core capital and total deposit liability at 15.6%. The capital adequacy was low 2010, 2011 2014 and 2012 (14.6%, 14.7% 14.8% and 15.1%) respectively.

GDP growth rate is used as a proxy of business cycle in which banks operate, and controls for variance in profitability due to differences in business cycles which influence the supply and demand for loans and deposits. Thus, higher GDP in 2010 indicates favorable business opportunities under which a bank can achieve higher profitability. This is because an increase in economic activities of the country signals that customers' demand for loans will increase, and with improved lending activities, banks are able to generate more profits hence the positive relationship between GDP and liquidity ratio between years 2010 to 2014. However the trends in GDP growth rate in Kenya from the years 2010 to 2014 had irregular trends with the year 2010 recording the highest percentage of GDP and the year 2012 recorded the lowest GDP value of 4.6%.

Bank size accounts for the existence of economies or diseconomies of scale. The variable is measured as the natural log of total assets. Profitability increases with increase in size, and decreases as soon as there are diseconomies of scale. Thus, study findings has shown that the relationship between the bank size and liquidity was positive from 2010 to 2014.

Liquidity is one of the important financial stability indicators since liquidity shortfall in one bank can cause systemic crisis in the banking sector due to their interconnected operations. Banks with sufficient capital should be able to obtain extra liquidity from the central bank against adequate collateral. Since liquidity is a major component of risk, it would seem logical that banks should set aside reserves of capital to mitigate this risk. In fact, there is evidence that they already do so. According to Hartmann (2004), if banks endogenize the capital decision, they will keep capital reserves above those required by the minimal regulatory capital amount in order to have a buffer against shocks to asset prices. But the fact that banks set aside liquidity reserves abstracts from the difficulties of implementing a common regulatory approach to managing liquidity risk.

5.4Policy Recommendations

Based on the findings study makes the following recommendations regarding the working capital management and liquidity risk of commercial banks in Kenya as measures that can be undertaken to improve liquidity.

The banks should reduce cash conversion cycle period so as it can lead the company liquidity higher. A careful reduction of cash conversion cycle period will improve the liquidity of a bank and excess cash can be reinvested in the bank. Additionally, banks should stretch the accounts payable so that they can reduce the cash conversion cycle period. On capital adequacy banks can improve their liquidity by increasing the number of days accounts are payable in as far as they do not strain their relationships with the creditors and reducing the cash conversion cycle up to an optimal level. With this finding in mind,

the researcher recommends that managers of commercial banks should concentrate on other factors that affect the liquidity of the commercial banks.

5.5 Limitations of the Study

Researchers on the subject of capital adequacy and Liquidity in commercial banks were few and little literature on the international arena was also not available on the subject, much of the literature obtained related to the developed economies whose circumstances may be different from that of a developing economy like Kenya.

The researcher acknowledges that GDP is not the only macroeconomic variable that affects liquidity ratio of commercial banks. Due to time and resource constraints the study did not focus on other macro-economic variables alongside GDP, which may have given a different result. Moreover the data was borrowed from Kenya National Bureau of Statistics which the researcher had no control on how it was determined.

5.6 Suggestions for Further Research

This study explored the effects of capital adequacy requirements on liquidity of commercial banks in Kenya. The study therefore suggests a similar study should be carried in micro financial institutions in Kenya.

A study on the effect of the liquidity requirements on profitability of commercial banks might also be worth looking at considering Basel III essential liquidity ratios. This will help determine if the requirements are appropriate as they are, or if this should be adjusted to ensure optimal performance of commercial banks.

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APPENDICES

APPENDIX 1: LIST OF COMMERCIAL BANKS IN KENYA

1. ABC Bank

2. Bank of Africa

3. Bank of Baroda

4. Bank of India

5. Barclays Bank Kenya

6. CfCStanbic Holdings

7. Chase Bank Kenya

8. Citibank

9. Commercial Bank of Africa

10. Consolidated Bank of Kenya

11. Cooperative Bank of Kenya

12. Credit Bank

13. Development Bank of Kenya

14. Diamond Trust Bank

15. Dubai Bank Kenya

16. Eco bank Kenya

17. Equatorial Commercial Bank

18. Equity Bank

19. Family Bank

20. Fidelity Commercial Bank Limited

21. First Community Bank

22. Giro Commercial Bank

23. Guaranty Trust Bank Kenya

24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya
29. I&M Bank
30. Imperial Bank Kenya
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. K-Rep Bank
34. Middle East Bank Kenya
35. National Bank of Kenya
36. NIC Bank
37. Oriental Commercial Bank
38. Paramount Universal Bank
39. Prime Bank
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank

Appendix II: Secondary Data

Banks	**Total assets**		**Core capital**	**Total Deposit liabilities**
Year	**Ksh. Million**	**log(B)**	**Ksh. Million**	**Ksh. Million**
ABC Bank				
2010	10,297	4.012711	1,338	8,353
2011	12,507	4.097153	1,531	10,471
2012	19,071	4.280373	1,645	15,255
2013	19,639	4.293119	1,774	15,905
2014	21,439	4.331205	1,928	16,050
Bank of Africa				
2010	26,699	4.426495	1,899	19,784
2011	38,734	4.588092	3,408	23,986
2012	48,958	4.689824	3,567	35,100
2013	52,683	4.72167	4,803	36,740
2014	62,212	4.793874	6,105	41,671
Bank of Baroda				
2010	32,332	4.509633	3,319	25,600
2011	36,701	4.564678	4,464	30,264
2012	46,138	4.664059	5,637	38,382
2013	52,022	4.716187	7,414	41,877
2014	61,947	4.79202	9,324	48,683
Bank of India				
2010	19,671	4.293826	2,694	16,076
2011	23,352	4.368324	3,447	18,475
2012	24,877	4.395798	3,989	18,282
2013	30,721	4.487435	4,951	22,778
2014	34,370	4.53618	5,902	24,668
Barclays Bank Kenya				
2010	172,691	5.23727	28,424	123,826
2011	167,305	5.223509	29,013	124,207
2012	185,102	5.267411	28,329	137,915
2013	207,010	5.315991	31,798	151,122
2014	226,043	5.354191	37,980	164,779
CfC Stanbic Holdings				
2010	107,139	5.029948	7,915	72,778
2011	140,087	5.146398	10,155	74,335
2012	133,378	5.125084	17,034	75,633
2013	170,726	5.2323	21,778	95,708
2014	171,347	5.233877	25,587	96,830

Banks	**Total assets**		**Core capital**	**Total deposit liabilities**
Chase Bank Kenya				
2010	21,859	4.33963	1,586	16,880
2011	36,513	4.562448	2,561	24,822
2012	49,105	4.691126	4,651	36,506
2013	76,569	4.884053	6,596	51,942
2014	107,112	5.029838	9,613	79,124
Citibank				
2010	62,070	4.792882	12,493	38,215
2011	74,646	4.873007	15,377	46,534
2012	69,580	4.842484	16,931	44,012
2013	71,243	4.852742	15,431	43,762
2014	79,398	4.89981	17,592	51,150
Commercial Bank of Africa				
2010	63,592	4.803402	5,728	53,195
2011	83,283	4.920556	7,661	67,303
2012	100,456	5.001976	9,712	79,996
2013	124,882	5.0965	10,378	90,993
2014	175,809	5.245041	13,779	122,044
Consolidated Bank of Kenya				
2010	10,479	4.02032	896	8,008
2011	15,318	4.185202	1,027	12,010
2012	18,001	4.255297	1,171	13,747
2013	16,779	4.224766	843	11,711
2014	15,077	4.178315	1,088	10,642
Cooperative Bank of Kenya				
2010	153,984	5.187476	17,971	124,012
2011	167,772	5.224719	22,103	142,705
2012	199,663	5.300298	29,414	162,267
2013	228,874	5.359596	32,123	174,776
2014	282,689	5.451309	37,462	216,174
Credit Bank				
2010	4,530	3.656098	898	3,258
2011	5,394	3.731911	945	3,937
2012	6,407	3.806655	1,188	4,781
2013	7,309	3.863858	1,199	5,512
2014	8,865	3.947679	1,112	7,213
Development Bank of Kenya				
2010	10,650	4.02735	1,352	4,105

Banks	**Total assets**		**Core capital**	**Total deposit liabilities**
2011	11,523	4.061566	1,424	4,171
2012	13,417	4.127655	1,372	6,953
2013	15,581	4.192595	1,553	8,419
2014	16,954	4.229272	1,745	8,465
Diamond Trust Bank				
2010	58,606	4.767942	6,637	44,904
2011	77,453	4.889038	8,229	59,772
2012	94,512	4.975487	12,029	72,505
2013	114,136	5.057423	15,508	84,672
2014	141,176	5.149761	22,245	101,594
Dubai Bank Kenya				
2010	1,874	3.27277	586	1,206
2011	2,316	3.364739	696	1,561
2012	2,584	3.412293	893	1,361
2013	2,927	3.466423	1,012	1,418
2014	3,502	3.544316	1,017	4
Ecobank Kenya				
2010	26,892	4.429623	2,758	16,494
2011	27,210	4.434729	2,647	16,566
2012	31,771	4.502031	4,374	21,475
2013	36,907	4.567109	5,079	25,351
2014	45,934	4.662134	5,079	32,414
Equatorial Commercial Bank				
2010	10,399	4.016992	810	8,037
2011	12,927	4.111498	1,051	9,834
2012	14,109	4.149496	548	12,963
2013	15,562	4.192065	1,216	13,856
2014	16,589	4.21982	934	14,306
Equity Bank				
2010	133,890	5.126748	19,931	95,204
2011	176,911	5.247755	19,589	121,774
2012	215,829	5.33411	29,525	140,286
2013	238,194	5.376931	34,759	158,527
2014	277,116	5.442662	40,733	202,485
Family Bank				
2010	20,188	4.305093	2,986	15,731
2011	26,002	4.415007	2,997	21,444
2012	30,985	4.491152	4,619	24,630

Banks	**Total assets**		**Core capital**	**Total deposit liabilities**
2013	43,501	4.638499	5,631	34,615
2014	61,813	4.79108	10,184	47,186
Fidelity Commercial Bank Limited				
2010	8,209	3.91429	753	7,204
2011	10,789	4.032981	913	9,490
2012	11,772	4.07085	1,119	10,527
2013	12,779	4.106497	1,309	11,263
2014	16,515	4.217879	1,551	13,559
Fina bank ltd				
2010	14,112	4.149589	1,121	11,590
2011	14,630	4.165244	1,325	12,395
2012	17,150	4.234264	1,561	13,747
2013				
2014				
First Community Bank				
2010	6,380	3.804821	565	5,611
2011	8,740	3.941511	767	7,812
2012	9,959	3.998216	1,008	8,833
2013	11,305	4.053271	1,140	9,932
2014	15,278	4.184067	1,423	13,339
Giro Commercial Bank				
2010	10,234	4.010045	1,278	8,308
2011	11,846	4.073572	1,500	10,069
2012	12,280	4.089198	1,694	10,420
2013	13,623	4.134273	2,005	11,457
2014	15,082	4.178459	2,330	12,451
Guaranty Trust Bank Kenya				
2010				
2011				
2012				
2013	25,638	4.408884	4,142	18,447
2014	32,992	4.518409	4,667	17,734
Guardian Bank				
2010	8,031	3.90477	948	6,971
2011	8,836	3.946256	1,065	7,648
2012	11,745	4.069853	1,219	10,374
2013	12,835	4.108396	1,494	11,181
2014	14,571	4.163489	1,729	12,643
Banks	**Total assets**		**Core capital**	**Total deposit liabilities**

Gulf African Bank				
2010	9,594	3.982	1,153	8,163
2011	12,915	4.111094	1,253	10,865
2012	13,562	4.132324	1,482	11,684
2013	16,054	4.205583	2,668	12,970
2014	19,754	4.295655	3,056	15,795
Habib Bank				
2010	5,426	3.73448	884	3,933
2011	5,861	3.767972	1,044	4,718
2012	7,014	3.845966	1,314	5,195
2013	8,078	3.907304	1,603	5,599
2014	9,449	3.975386	1,846	6,399
Habib Bank AG Zurich				
2010	8,127	3.90993	1,027	6,672
2011	8,722	3.940616	1,188	6,661
2012	9,702	3.986861	1,457	7,748
2013	11,009	4.041748	1,765	8,336
2014	12,147	4.084469	2,179	8,948
I&M Bank				
2010	62,552	4.796241	8,467	45,995
2011	76,903	4.885943	10,884	56,944
2012	91,520	4.961516	11,862	65,640
2013	110,316	5.042639	14,700	74,494
2014	137,299	5.137667	19,122	86,621
Imperial Bank Kenya				
2010	19,399	4.287779	2,230	13,678
2011	25,618	4.408545	3,000	19,245
2012	34,590	4.538951	3,648	27,581
2013	43,006	4.633529	4,663	34,065
2014	56,599	4.752809	6,564	47,148
Jamii Bora Bank				
2010	1,723	3.236285	226	532
2011	2,070	3.31597	769	393
2012	3,480	3.541579	1,325	1,213
2013	7,010	3.845718	1,396	3,421
2014	13,118	4.117868	2,197	8,485
Kenya Commercial Bank				
2010	223,025	5.348354	35,221	163,189
2011	282,494	5.451009	38,403	210,174
2012	304,112	5.483034	42,125	223,493
2013	323,312	5.509622	50,905	237,213

Banks	**Total assets**		**Core capital**	**Total deposit liabilities**
2014	376,969	5.576306	57,805	276,750
K-Rep Bank				
2010	7,670	3.884795	1,097	5,454
2011	9,319	3.969369	1,275	6,446
2012	9,546	3.979821	1,419	6,650
2013	13,199	4.120541	1,818	9,165
2014	15,799	4.19863	2,337	12,065
Middle East Bank Kenya				
2010	4,018	3.60401	989	2,527
2011	4,639	3.666424	1,060	2,703
2012	5,870	3.768638	1,079	3,907
2013	5,766	3.760875	1,138	3,649
2014	5,937	3.773567	1,217	4,127
National Bank of Kenya				
2010	60,027	4.778347	9,082	47,805
2011	68,665	4.836735	9,576	56,728
2012	67,155	4.827078	9,622	55,191
2013	92,493	4.966109	10,312	77,993
2014	122,865	5.089428	10,343	104,734
NIC Bank				
2010	54,776	4.73859	6,874	45,318
2011	73,581	4.866766	9,073	62,009
2012	101,772	5.007628	12,569	77,466
2013	112,917	5.052759	14,108	84,236
2014	137,087	5.136996	18,826	92,791
Oriental Commercial Bank				
2010	4,558	3.658774	969	3,266
2011	5,030	3.701568	1,074	3,694
2012	6,220	3.79379	1,139	4,806
2013	7,007	3.845532	1,316	5,377
2014	7,858	3.895312	1,387	6,231
Paramount Universal Bank				
2010	4,420	3.645422	768	3,562
2011	4,727	3.674586	1,003	3,674
2012	7,255	3.860637	1,106	6,084
2013	8,029	3.904661	1,175	6,601
2014	10,402	4.017117	1,314	8,048
Prime Bank				
2010	32,444	4.511134	2,258	25,512
2011	35,185	4.546358	3,242	28,872

Banks	**Total assets**		**Core capital**	**Total deposit liabilities**
2012	43,463	4.63812	3,816	36,715
2013	49,461	4.694263	4,951	40,562
2014	54,918	4.739715	6,722	44,940
Standard Chartered Kenya				
2010	142,880	5.154971	11,394	100,504
2011	164,182	5.215326	14,122	122,323
2012	195,493	5.291131	21,623	140,525
2013	220,524	5.343456	25,831	154,720
2014	222,636	5.347595	28,944	154,067
Trans National Bank Ltd				
2010	4,762	3.677789	1,518	3,037
2011	7,287	3.862549	1,711	5,283
2012	8,801	3.944532	1,790	6,535
2013	9,658	3.984887	1,807	7,181
2014	10,240	4.0103	1,814	7,666
United Bank for Africa UBA				
2010	2,363	3.373464	887	1,168
2011	3,206	3.505964	723	1,270
2012	2,924	3.465977	1,215	1,343
2013	3,710	3.569374	1,059	2,483
2014	4,756	3.677242	1,127	3,576
Victoria Commercial Bank				
2010	6,215	3.793441	1,065	4,935
2011	7,645	3.883377	1,235	5,907
2012	10,323	4.013806	2,019	7,561
2013	13,644	4.134942	2,300	9,044
2014	17,244	4.236638	2,615	12,289

Source; CBK Supervision Department; Annual Reports

Liquidity and GDP Data

		Liquidity Ratio (%)				
	Year	2010	2011	2012	2013	2014
Bank Name						1
African Banking Corporation Ltd		40.95	34.64	42.5	38	30.6
Bank of Africa (K) ltd		42	26.1	25.6	34.5	28.3
Bank of Baroda		65.1	49.2	55.8	60.6	60.5
Bank of India		80.6	78.5	65.9	75.2	74.2
Barclays Bank Kenya Ltd		54.1	42.05	46.8	42	44.2
CFC Stanbic Holdings		36.8	37.8	46.4	67.9	41.4
Citi Bank		69	63	82	63	79.8
Chase Bank Ltd		42.4	47.2	38	40.5	46.4
Consolidated Bank of Kenya Ltd		32.9	27.6	47.4	27.5	36
Commercial Bank of Africa		44.71	44.95	47.62	41.12	34
Cooperative Bank of Kenya Ltd		39.4	27.2	35.8	32.6	33.8
Credit Bank Ltd		55.6	41.3	48.9	36.7	
Development Bank of Kenya Ltd		40	36	45.9	38.6	33.8
Diamond Trust Bank Ltd		35.8	35.7	38	32.6	35.6
Dubai Bank Kenya		49.5	33.9	24.1	21.5	
Ecobank Kenya Ltd		58	41	40.01	31.8	39.9
Equatorial Commercial Bank Ltd		39.1	36.5	35.66	34.61	27.82
Equity Bank Ltd		40	37	46	34	30.4
Family Bank Ltd		44.96	28.2	38.6	36.5	40.8
Fidelity Commercial Bank Ltd		32.7	30.6	34.3	42.6	41
Fina Bank Ltd		48	48	29	0	0
First Community Bank		40	48	40.1	28.7	29.6
Giro Commercial Bank Ltd		43.8	43.7	55.05	50.5	51.7
Guardian Bank		39.1	28	38.6	33.4	35.8
Guaranty Trust Bank (Kenya) Ltd				44	65	49.3
Gulf African Bank		28.9	38	29	33.8	28.7
Habib Bank		86.53	77.9	63	63	
Habib Bank AG Zurich		78.8	73.4	86.3	82.4	86.5
I&M Bank Ltd		43.47	38.37	35.46	34.02	30.52
Imperial Bank Ltd		28.8	33.6	39.3	33.8	44.2

Jamii Bora Bank		27	146	62	42.4	38
Kenya Commercial Bank Ltd		30.7	31.3	35.9	33.3	31.3
K-Rep Bank Ltd		30	29	27.9	31.1	36.8
Middle East Bank (K) Ltd		42.4	32.29	40.89	23	39.36
National Bank of Kenya Ltd		41	34	30	42	31.5
NIC Bank Ltd		30.38	27.41	35.38	28.54	33.08
Oriental Commercial Bank Ltd		42	44	45	44	42.6
Paramount Universal Bank		60	58	66	63	
Prime Bank Ltd		48.8	42.3	47.5	42.4	37.5
Standard Chartered Bank (K) Ltd		55	34	39	38	46
Trans-National Bank Ltd		77	67	60.4	49.6	40.4
United Bank for Africa		134.8	191.8	112.8	96.6	
Victoria Commercial Bank Ltd		30	36	38.4	30.8	32.6
Annual Average %		44.5	37.0	41.9	38.6	37.7

GDP Data

Year	**GDP growth rate**
2010	8.6%
2011	6.1%
2012	4.6%
2013	5.7%
2014	5.3%