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Liquidity Risks as a Determinant of Capital Adequacy of Commercial Banks in Kenya

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Abstract

A bank's financial strength is evaluated by the capital adequacy (CA), which makes use of both its capital and assets. It is employed to safeguard depositors and advance the global financial systems' efficiency and stability. This study used Multiple Linear Regression Analysis and the Correlation Coefficient (Pearson Correlation) to assess whether liquidity risks are among the most significant factors that predict Capital Adequacy of Commercial Banks in Kenya for the period 2009–2013. During the five years from 2009 to 2013, all Kenyan commercial banks that were registered made up the target population. Secondary data was used from Nairobi Securities Exchange for listed banks and management of banks that are not listed. Following the financial crisis of the 2007-2009, stringent regulatory measures, such as higher capital requirements have become more prominent as a move towards having stable and more competitive banking sector. Banks play a critical role in the allocation of society's limited savings among the most productive investments, and they facilitate the efficient allocation of the risks of those investments. Data analysis results showed the existence of a non-significant direct relationship between liquidity risk and commercial banks capital adequacy at ($\alpha = 0.05$), where (t) value was (0.167) and ($\alpha = 0.868$), but Pearson correlation coefficient was (0.017). This implies that when liquidity risk is high capital adequacy is low. The study's recommendations are based on the findings, and financial statements and data reports should include the guidelines and foundation for capital adequacy measurement. This will increase public awareness of banking and finance and strengthen banks' ability to compete with regional and global banks.

Keywords: Liquidity Risks, Capital Adequacy

1. Introduction

The quantity of capital in relation to loans and other assets held by a financial organization is referred to as capital adequacy (Barsel II, 1988). It stands for the most important component of the stability and solidarity of banks (Wen, 2010). It appears that stakeholders and investors are unaware of the true factors influencing capital adequacy and the reasons why certain banks perform better than others (Ongore, 2012). It seems that investors and stakeholders in Kenya today are unaware of the true factors that influence capital adequacy and the reasons why certain banks outperform others (Ongore, 2012).

In an effort to promote efficiency in the banking industry, to control weaknesses resulting from worldwide liberalization and deregulation, the Basel Capital Accord of 1988 (Basel I) which led to the endorsement of a new capital adequacy framework (Basel II) in 2004 (operational from 2007) marked the beginning of a new phase of re-regulation with an attempt to bring about an international harmonization of banking regulations (Bichsel and Blum, 2005). In assessing bank's efficiency, the level, nature and composition of capital and the cost income ratio are some of the key measures used to determine performance of a bank

(Bourke,1989). Kwan and Eisenbeis (1995) and Hughes and Moon (1995) argued that it is necessary to recognize explicitly the concept of efficiency in the empirical models linking bank capital to risk and to distinguish between efficient and inefficient risk undertaking. There are conflicts in capital theories for example Capital buffer theory encourages high capital while capital structure theory does not (Modigliani and Miller, 1958).

Since capital adequacy is seen as one of the primary factors influencing any financial institution's profitability, it has been the subject of numerous theories and research projects (Bourke, 1989; White and Morrison, 2001). In contrast, other theories claim that in a world with ideal financial markets, capital structure and consequently capital regulation is meaningless (Modigliani and Miller, 1958). The surplus capital a bank has over the minimum required capital is known as the capital buffer, according to capital buffer theory. According to the capital buffer hypothesis, banks with large capital buffers seek to preserve their capital buffer, while banks with small capital buffers try to restore the proper capital buffer by increasing capital. This theory is relevant to this study because it explains why capital adequacy is critical to commercial banks as per Marcus (1984) However, White and Morrison (2001) posited that the regulator ensures that banks have enough of their own capital at stake.

Capital is one of the bank specific factors that influence the level of bank profitability. Capital is the amount of own fund available to support the bank's business and act as a buffer in case of adverse situation (Athanasoglou et al., 2005). In Kenya, Central Bank of Kenya (CBK) increased the minimum capital requirement, aimed at strengthening institutional structures and improving resilience of the banking industry In respect to the international standards. According to the Banking Act (2008), every bank was expected to maintain a minimum core capital of at least KES 1 billion (USD 12 million) by 2012.

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. In the year 2008, CBK reviewed the minimum capital requirements for commercial banks and mortgage finance institutions with the aim of maintaining a more stable and efficient banking and financial system. According to the Banking Act (2008) every institution was expected to maintain:- A minimum core capital of at least KES 1 billion (USD 12 million) by 2012 , core capital of not less than 8% of total risk adjusted assets plus risk adjusted off-SFP items, a core capital of not less than 8% of its total deposit liabilities and a total capital of not less than 12% of its total risk adjusted assets plus risk adjusted off-SFP items as per Kenya Banking act (2008)

The findings of this study will be of great importance to the policy makers when making policies touching on Capital. For regulators especially CBK, the findings will help them in their efforts to monitor the commercial banks financial performance in relation to capital adequacy. The study will as well assist the CBK as a regulator to know when there are distress symptoms and to form measures to further securitize the banking system and restore depositor's confidence.

1.1 Research gap

Investors and stakeholders do not appear to understand what really determines capital adequacy and why some banks perform better than others (Ongore, 2012). There are conflicts in capital theories, for example Capital buffer theory encourages high capital while Modigliani and Miller (1958) does not. In line with the capital buffer theory (Marcus, 1984, Milne and Whalley, 2001) banks aim at holding more capital than required as insurance against breach of the regulatory minimum capital requirement.

Banks with high capital buffers attempt to maintain their capital buffer. In contrast, some theories argue that in a world of perfect financial markets, capital structure and hence capital regulation is irrelevant (Modigliani and Miller, 1958) while in capital buffer theory, capital buffer is the excess capital a bank holds above the minimum capital required.

Despite financial sector reforms and regulation by CBK for all financial institution with an aim of

improving profitability, efficiency and productivity, commercial banks' determinants of capital adequacy are still not understood by many investors (Mathuva, 2009). Nag and Das (2002) studied the impact of capital requirement norms on flow of credit to the business sector by public sector banks in India and found that in the post reform period, public sector banks shift their portfolio in a way that reduced their capital requirements this did not capture determinants of capital adequacy. A study conducted by Al-Tamimi (2013) on Commercial banks capital adequacy in Jordan found out that there is negative non-significant relationship between capital adequacy and capital risk. In a study conducted by Ogilo (2012) on Impact of credit risk management on financial performance of commercial banks in Kenya, the study found out that there is a strong impact between CAMEL components on financial performance of commercial banks. Another study conducted by (Agoraki et al., 2011) found out that imposing high capital requirements, banks will be constrained to some extent by competitive pressures, which would occur due to competition on loans, deposits and even the sources of equity and debt investments.

Discussion in previous studies seems to have suggested a number of factors that may influence the failure pattern of banks, bank products and management. There is little done on a model designed on determinants of capital adequacy of commercial banks in Kenya. The study attempted to address the following research question: What are the factors that determine capital adequacy of commercial banks in Kenya?

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1.2 Objective of the research study

The objective of research study was to establish whether a liquidity risk is a determinant of capital adequacy of commercial banks in Kenya.

1.3 Study research question

Is liquidity risk a determinant of capital adequacy of commercial banks in Kenya?

2. Literature Review

Reviewed literature which contains information related to area of study which investigates the determinant of capital adequacy of commercial banks in Kenya are presented here. It involves reviews of empirical studies, historical records, government reports and newspaper accounts. This chapter also reviews literature on various theories and concepts that have been brought forward by other scholars and researchers in the area of capital adequacy of commercial banks.

2.1 Capital Structure Theory

The fundamental concept of capital structure was introduced by Modigliani and Miller (1958), the theory of capital structure was also introduced by Modigliani and Miller (1958). Capital structure theory suggests the value a firm is irrelevant to the capital structure of a company. Whether there is highly levered or has lower debt component, it has no bearing on its market value. The market value of a firm is dependent on the operating profits of the company (Modigliani and Miller, 1958). Capital structure which determines capital adequacy of a company is the way a company finances its assets. A company can finance its operations by either debt or equity or different combinations of these two sources. Capital structure of a company can have majority of debt component or majority of equity, only one of the two components or an equal mix of both debt and equity. Each approach has its own set of advantages and disadvantages (Kwan and Eisenbeis, 1995).

Capital structure theory has been used by many researchers in their theoretical and empirical research on capital structure of financial or non-financial sectors. These studies are mainly focused on the non-financial sector; only limited studies were previously conducted on the capital structure of the financial sector and

only few of them on the determinants of Capital Adequacy Ratio (CAR) in banking sector especially in developing countries as per Bourke (1989).

2.2 The Capital Buffer Theory

In capital buffer theory, banks aim at holding more capital than recommended. Regulations targeting the creation of adequate capital buffers are designed to reduce the procyclical nature of lending by promoting the creation of countercyclical buffers (Milne & Whalley, 2001). Moreover these regulations are designed to reduce the procyclical nature of lending by promoting the creation of countercyclical buffers (Khawish, 2011).

The capital buffer is the excess capital a bank holds above the minimum capital required. The capital buffer theory implicates that banks with low capital buffers attempt to rebuild an appropriate capital buffer by raising capital and banks with high capital buffers attempt to maintain their capital buffer. More capital tends to absorb adverse shocks and thus reduces the likelihood of failure. Banks raise capital when portfolio risk goes up in order to keep up their capital buffer as sighted by (Marcus, 1984) which appear to relate to determinant of capital adequacy and performance of commercial banks.

2.3 Trade-Off Theory

The trade-off theory of capital structure refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing costs and benefits. The classical version of the hypothesis goes back to Kraus and Litzenberger (1973) who considered a balance between the dead-weight costs of bankruptcy and tax saving benefits of debt. It states that there is an advantage to financing with debt, the tax benefits of debt and there is a cost of financing with debt, the costs of financial distress (Brealey and Myers, 2003). In order to generate an “adequate” return on equity, commercial banks have to incur higher risks to receive higher risk premium on their investments. Thus, increased risk requires greater proportions of equity in the firm’s capital structure to prevent an inefficient cost of capital. The net effect of this negative incentive effect and the buffer effect is ambiguous (Brealey and Myers, 2003).

2.4 Liquidity Risk

Liquidity risks (LR) represented in those current and potential risks related to a bank profitability and capital which result from bank inability to meet its obligations which incurred including the inability to manage unexpected reductions or changes that might occur on market conditions and affect the ability to liquidate assets rapidly and with the least possible losses in their values; Liquidity risk is compounded when banks cannot forecast the demand on loans or deposits withdrawal accompanied by its inability to reach new sources of money to cover these demands (Abdelkareem & Salah, 2007).

Liquid assets are represented by cash at hand and at the central bank in addition to cash at other banks or financial institutions, while total liabilities are represented by all short and long-term liabilities such as demand deposits, time deposits, saving deposits in addition to borrowing processes from banks and financial institutions. This ratio reflects ability of bank liquid assets in meeting withdrawal process by customer (depositors); In other words there is an inverse relationship between liquidity risks and degree of capital adequacy (Heffernan, 1996).

2.5 Empirical Review

In a study published in 2000, Bevan examined the factors that influence commercial bank leverage, or debt, in Hungary. They identified leverage as the dependent variable and risky assets, bank size, long-term debt, short-term debt, and retained earnings as the independent variables. The study showed that each risky asset and debt (leverage) had an inverse relationship. It also showed how important it is for commercial banks to raise their capital in order to shield depositor money from exposure to leverage risks (Bevan, 2000).

In 2002, Al-Maleeji carried out research with the goal of creating an accounting model for evaluating Egyptian

commercial banks and establishing a standard that incorporates different elements required to evaluate capital adequacy, which reflects the majority of risks facing commercial banks generally and credit, inflation, liquidity, and market risks in particular. The analysis reiterated the conclusion that the new framework for capital adequacy (Basel, 1999) and the capital adequacy standards established by the Basel banking decisions (1988) and Egyptian central bank decisions (1991) are ineffective.

Berrosipide et al. (2008) study which sought to find out the effects of companies finance policy on their performance and value, focusing on the macroeconomics environment, using fixed effects statistical analysis methods, the study revealed a direct relationship between book and market values of the company, and security decisions with operational profits margin, Brazilian currency derived contracts, capital expenditures, Monetary budgets, but no statistically significant relationship between company size, sales growth rate with security banking decisions.

Barakat (2009) conducted a study which aimed at checking the extent to which (Basel 2) standards requirement are applied by commercial banks operating in Jordan. Data was collected through a questionnaire administered to more than (40) bank employees in Jordan. The study revealed that all banks operating in Jordan applied basils standards, as well as the existence of great differences in applying Basel 2 standards among local end foreign banks. Mathuva (2009) study provides evidence that supports the Central Bank of Kenya's move to gradually raise bank capital levels by 2012 and to tightly monitor the operations of banks so as to ensure that Kenyan banks are more efficient in their operations while at the same time being profitable.

3. Research Methodology

This chapter discussed the research design, population, data collection and data analysis. It further shows the data collection methods used techniques and instruments.

3.1 Research Design

This study adopted a descriptive research design. Descriptive research is a process of collecting data in order to test hypothesis or answer questions concerning the current status of the subject matter that was used in this study. A descriptive survey design allows researchers to gather information, summarize, present and interpret it for the purpose of clarification (Mugenda and Mugenda, 1999).

3.2 Population of the Study

The target population comprised all registered commercial banks in Kenya in a five year period 2009 to 2013. The researcher chose this period because it has got a relatively normal business environment while avoiding year 1997 and 1998 when there was post-election violence in the country. The commercial banks that comprised of the population are banks that operated in Kenya registered and regulated by Central Bank of Kenya (CBK) and Kenya Bankers Association (KBA)

3.3 Data Collection

Secondary data was used from NSE for listed banks and management of banks that are not listed. The compulsory requirement of publishing listed companies financial reports made it easy to obtain secondary data for the period 2009-2013 that was relevant for the study while special requests were made to management of unlisted banks to provide the researcher with their financial reports. All registered banks were approached.

3.4 Data Analysis

Correlation coefficient (Pearson Correlation) analysis was used to identify factors that determine capital adequacy of commercial banks in Kenya. Statistical Package for Social Sciences (SPSS) was used to aid in the data analysis.

3.5 Measurement of Variables

CA: Capital Adequacy defined as awareness of and caution from various types of risks, which might face commercial banks in their operational processes which represents the dependent variable that can be expressed by the following equation as per Brealey and Myers (2003).

$$(a) CA = \text{Owner's equity risky ratio} = \frac{\text{Owners Equity}}{\text{Risky Assets}}$$

$$(b) LR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

4. Data Analysis, Results and Findings

This chapter reported major findings in the study as they relate to the research objective. The research areas considered in this study were the analysis of determinants of capital adequacy of commercial banks in Kenya. The study used secondary data contained in annual audited reports in responding to the study objectives.

4.1 Regression Analysis

A regression analysis was conducted on Capital adequacy against determinants of capital adequacy, which was proxied by capital risk.

Table 4.1: Pearson Correlation

		Unstandardized		Standardized			95.0% Confidence Interval for B	
		Coefficients		Coefficients			Lower	Upper
		B	Std. Error	Beta			Bound	Bound
1	(Constant)	-.637	.532		-1.198	.235	-1.699	.425
	Liquidity Risk	.017	.100	.019	.167	.868	-.183	.216

The regression equation was as follows: $CA = a + \beta_1 LR + \varepsilon$

From the above equation it meant that when capital risk increased by one unit, capital adequacy increased by 1.7% (0.017). Data analysis revealed existence of an inverse insignificant relationship between liquidity risks and capital adequacy (P-Value = 0.868) meaning that the higher the liquidity risks, the lower the bank's capital adequacy.

5. Conclusions and recommendations

This chapter summarized the analysis in chapter four and underlined the key findings. It also drew conclusion and implications from the findings. Limitations of the study, recommendations and suggestions for further studies were outlined.

5.1 Summary of Findings

This study was conducted with the aim of establishing liquidity risk is among factors that determine capital adequacy of commercial banks in Kenya. To achieve the above objective, a regression analysis was conducted whereby capital adequacy was regressed against the predictor variables; liquidity risky assets for a period year

2009 to 2013. Data for both dependent and predictor variables were obtained from NSE and management of unlisted banks. The data was then subjected to a regression analysis.

5.2 Liquidity Risk

Data analysis indicated that there was existence of an inverse statistically significant relationship between liquidity risks and capital adequacy at (α 0.868), while Pearson correlation coefficient was (0.017), meaning that the higher the capital risks, the lower the banks' capital adequacy. An increase of liquidity risks requires an in turn of capital adequacy to meet investment risks.

5.3 Conclusions

The results indicated that liquidity risky Assets have influence on capital adequacy of commercial banks in Kenya. However, the study revealed that there exist an insignificant relationship between capital adequacy and liquidity risk implying that there was no existence of a significant relationship between capital adequacy and the liquidity risk. Since the P-value of the F-test is less than alpha, the overall conclusion of the study was that there is an insignificant relationship between the Liquidity Risk Variable and Capital Adequacy.

5.4 Recommendations

Overall, results revealed that liquidity risk (LR) has some influence on the dependent variable and changes occurring in it, where LR explained at least some percent of the total variance. On this basis of the findings the study recommended that report of financial statements and data should include rules and basis on which capital adequacy measurement is based, which will lead to raising banking and finance awareness that will enhance banks competitive positions with regional and international banks.

5.5 Suggestions for Further Studies

This researcher can argue that findings of this study reflect the actual status of commercial banks under study, and suggest urgent need and high importance of conducting more research to include other variables not included in this study such as financial leverage multiplier, and return on deposits ratio, working on measuring capital to deposits ratio or capital to debts ratio along with variables of the current study.

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