Financial Risks Analysis and Performance of Commercial Banks in Kenya

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Abstract

Commercial banks in Kenya often record inconsistent financial performance with some ending up under statutory receivership due to inability to meet their commitments to the stakeholders. Central Bank of Kenya usually put sound risk management guidelines to be followed by all the commercial banks yet losses are experienced in the banking sector. This study sought to investigate the effects of financial risks on performance of Commercial banks in Kenya. Specifically, the study sought to determine the effect of Liquidity risk, credit risks, interest rate risks and foreign exchange risks on return of assets of commercial banks in the country. The study was anchored within, enterprise risk management theory and adopted explanatory research design. Financial performance of commercial banks was assessed in terms of return on assets where secondary data of the 42 commercial banks was collected for six years from 2010 to 2015.The source data collected was annual reports and financial statements of the commercial banks and Central Bank of Kenya and was analyzed by use of statistical panel data model. Diagnostics tests such as multicollinearity, autocorrelation and heteroscedasticity tests were performed to eliminate unbiasedness. The study found out that liquidity risk and return on assets are positively and significantly related (β=0.039, p=0.000).Credit risk and return on assets were negatively and significantly related (β=-0.014, p=0.041); interest rate and return on assets were positively and significantly related (β=0.002, p=0.000) while foreign exchange risk and return on assets were negatively and significantly related (β=-0.003, p=0.000). The study concluded that liquidity risk and

interest rate have a positive and significant effect on performance while credit risk and exchange risk have a negative and significant on performance of Commercial banks in Kenya. Based on the findings and conclusion, the study recommended that commercial banks to have a sound process for measuring, identifying, controlling and liquidity risk. It is essential that banking corporations have a comprehensive risk management process in place and that is subject to appropriate board and Senior Management oversight. Commercial banks should also determine the risk appetite of its key stakeholders such as directors. The study also recommends that commercial banks should explore avenues to enhance capacities within banks for managing interest rate risks. Lastly, the study recommends the use of Forward exchange contract. Forward exchange contract helps cushion businesses from the adverse shifts in exchange rates by fixing an exchange rate until future date.

Kew words: *Liquidity risk, credit risks, interest rate risks, foreign exchange risks, return on assets of commercial banks*

1.1 Introduction

Commercial Banks are the key contributors of economic growth globally (Cavusgil, Knight, Riesenberger, Rammal & Rose, 2014). They play vital role of economic development by collecting savings from entities that have idle surplus fund and mobilize savings of investment in industrial projects. Commercial banks provides capital needed for development to entrepreneurs starting businesses, they give direct loans to the government, provides managerial advices to small scale businessmen and also provide payment services to its clients. Economic development of any country is determined by the activities of the commercial banks. Banking sector globally serves both surplus and deficit units by channelizing a variety of services.

The Global Financial crisis impacted banking systems worldwide. Various markets reported fall in growth of Bank credit. Return on Assets (ROA) of Banks (indicator of Banking system's profitability and soundness) showed variation during the period 2016, initially reducing and thereafter improving by the year 2010 on account of recovery post crisis. In 2016, the global commercial bank performance measured in terms of ROA showed that the average in France was 0.4, Germany 0.3, Greece 1.0, Italy 0.7, Japan 0.7, United Kingdom 0.4 and United States 1.2. Under emerging economies, financial performance measured as ROA was 3 in Russia, 0.9 in China, 0.9 in India, 1.5 in Malaysia and 3.4 in Brazil (Shukla, 2016).

Bank plays a very key role when it comes to allocating limited savings in the society in the most investments that are most productive, and facilitate the allocating of the risks efficiently among the investments (Diamond & Dybvig, 1983). Financial crisis depicted that changes in the process can lead to disrupted economies worldwide. The financial crises also revealed bank regulations importance in hedging against higher risks attributed bank's financial position imbalance.

Mishkin (2000) asserts that every nation should have Central bank whose major responsibility is to ensure that inflation is controlled to avoid devaluation of Kenyan currency hence stabilizing the economy. Central Bank (CB) ensures that the commercial banks are well governed to protect the loss of funds from its citizens. CB is the body that is obligated to licensing and to regulating banks thereafter meeting all the requirements and has the power to withdraw license from any bank that does not comply with its regulation. The efficient management of the bank, determines its stability. One of the regulations is that all commercial banks should adhere to sound financial risk management.

Reinhart and Rogoff (2008b) contents that the defaults in emerging market economies tend to rise sharply when many countries simultaneously experience domestic banking crises. In addition there are evident symptoms of chronic failings such as high inflation and currency debasement despite the mandate of fiduciary banks controls. According to the Ninth Edition Global Risk management survey by Delloite University Press risk data and technology systems continue to pose challenges (Sumner 2000).This study intended to shows that besides many banks worldwide embedding risk management practices , a lot needs to be done to iron out the inefficiency so as to improve profitability. The effect of inadequate practice is manifested in the non-performing loans, frauds, money laundry, and cybercrimes among other vices caused by lack of risk management culture

Ara, Bakaeva and Sun (2009) portends that Basel II standard is about how much capital commercial banks need to put aside against the numerous risks facing them. Basel II seeks to achieve this by setting up meticulous risk and capital management requirements aimed at ensuring that a bank holds capital reserves that is appropriate to the risks that commercial banks are exposed to. This implies that the greater the risk the greater the amount of capital required especially when commercial banks are competing with each other in the market.

Prior to the 2007-2008 financial crisis many countries banking sector had excessive on- and off balance sheet leverage built up together with gradual erosion of banks' capital base level (Bank of International Settlements (BIS), (2009)). Consequently the banking industry did not absorb the credit losses, trading systematically nor deal with the off-balance sheet large intermediation exposures that occurred in the banking system. To address the financial crisis problems, bank regulatory authorities worldwide embarked on important reforms of the prudential framework internationally in the banking industry in order to ensure global capital strengthening and regulations on liquidity to create a banking sector that is resilient and ensure financial stability (BIS, 2009; Naceur & Kandil, 2009; Financial Service Authority, 2009).

The global financial crisis showed bank regulations importance in hedging against higher risks due to banks' imbalance. Stulz (2008) suggested that there exists five methods that systems in financial risk management breaks down, as learnt from the major global crisis and other minor ones: risks miss-measurement, use of inappropriate risk metrics; not

taking risks already known into account; not communicating risks to the management; failure to monitor and manage risks. Central Bank Supervision Report, 2008 indicates that many banks that collapsed in Kenya in the late 1990's were as a result of the poor management of credit risks which was portrayed in the high levels of nonperforming loans. It is important therefore to study how banks are managing the broader financial risk.

As at 31 December 2015 the financial performance aspects of commercial banks as well as financial risks management in Kenya was guided by the CBK prudential guidelines issued in January 2015. Commercial banks in Kenya were required by CBK to submit audited annual reports which include their financial performance and in addition disclose various financial risks in the reports including credit risk, interest rate risk, foreign exchange risk, liquidity risk as well as capital management risk on a yearly basis by 31 March of every year. The Kenyan banking sector registered improved performance in 2015 by registering a 15.9 percent growth in total net assets from Ksh. 2.33 trillion in December 2014 to Ksh. 2.70 trillion in December 2015. (Source: Central Bank of Kenya).

The Central Bank of Kenya (CBK) said that more than 90% of banks in the country reported loss reduction due to increase in risk management and most reported that there was increased risk awareness in the institutions. In a survey of banks and mortgage institutions in Kenya, the CBK contacted 43 significant institutions to assess the adequacy and impact of risk management guidelines the central bank had issued in 2005. The development of risk management as an autonomous function in particular has been rapid, with 95% of institutions surveyed saying they had created "independent and well-funded risk management functions.

1.2 Statement of the problem

Financial risks have led to the decline in the performance of commercial banks in Kenya. In 2015, financial sector's assets as a share of nominal GDP was 83.27 per cent compared to 88.41 per cent in 2014, with a decline attributed to exclusion of assets for three banks placed under receivership. Market Capitalization for all listed and actively trading equities at the Nairobi Securities Exchange (NSE) accounted for 32.27 per cent as at the end December 2015 compared to 42.61 per cent at the end December 2014, reflecting a decline in shareholders' wealth due to fall in share prices.

There has been a sharp rise in nonperforming loans and bad debts in commercial banks Credit risks are not well managed culminating to fluctuating performance of commercial banks. This has not only affected commercial banks but other financial institutions in Kenya making managers of commercial banks to liaise with the credit reference bureau before lending loans. The ratio of gross non-performing loans to gross loans increased from 9.2 percent in December 2016 to 12.3 percent in December 2017. The outstanding value of non-performing mortgages increased from Ksh.22.0 billion in December 2016 to Ksh.27.3 billion in December 2017. As a result credit risk increased. The slowdown in

economic activity affected debt servicing across the sectors, as well as overall asset quality in the banking sector. This was reflected by the increase in the ratio of non-performing loans from 9.3 percent in 2016 to 12.3 percent in 2017 (Bank Supervision annual Report, 2017).

Despite Central bank of Kenya providing prudential guidelines to guide commercial banks manage and improve their return on assets but some commercial banks have experienced liquidity risks making them unable to raise sufficient funds to fulfill their obligations resulting to statutory receivership. Imperial bank was one of the victims that were put to statutory receivership regardless of how well it was capitalized.

Commercial banks are affected by interest rate risks whereby rates of borrowing and lending have caused banks to lose money thereby leading to poor performance return on assets. Kenya commercial banks are involved in international business and have branches and parent commercial banks abroad.

Financial risk management has gained an important role for financial institutions. In today's dynamic environment, nothing is constant but risk. Managing financial risk involves setting appropriate risk environment, identifying and measuring the insurances risk exposure, mitigating risk exposure, monitoring risk and constructing controls for protecting the insurance companies from financial risk (Tcankova, 2002). The government of Kenya and private sector has provided a very conducive environment and invested heavily in the banking sector, as a result commercial banks have performed exceedingly well. However, some commercial banks such as Dubai commercial bank, Imperial commercial bank and Chase bank have experienced fluctuating financial performance to an extent of being put under statutory receivership by Central Bank of Kenya.

A number of research studies in Kenya have attempted to address the issues of financial risk which have been studied in piece meal manner. They have addressed the different components of financial risk individually. For instance, Fredrick (2012), Kargi (2011), and Kithinji (2010) and researched on credit risk while Abid and Mseddi (2004), Gatsi *et al.,* (2013), Nimalathasan *et al.,* (2012) and Wachiaya (2011) studied on market risk. Akhtar (2011), Said (2014) and Ogol (2011) studied on liquidity risk. By tackling the risks individually these studies fail to acknowledge the effect of financial risk on the financial performance of commercial banks. It was important therefore to study how banks are managing the broader financial risk.

1.3 Objectives of the Study

i. To determine the effect of liquidity risk on return on assets of commercial banks in Kenya.

ii. To determine the effect credit risks on return on assets of commercial banks in Kenya

iii. To determine the effect of interest rate risks on return on assets of commercial banks in Kenya.

iv.   To determine the effect of foreign exchange risks on return on assets of commercial banks in Kenya

1.4 Research Hypotheses

i.   There is no statistically significant relationship between Liquidity risk and return on assets of commercial banks in Kenya.
ii.   There is no statistically significant relationship between credit risks and return on assets of commercial banks in Kenya.
iii.   There is no statistically significant relationship between interest rate risks and return on assets of commercial banks in Kenya.
iv.   There is no statistically significant relationship between foreign exchange risks and return on assets of commercial banks in Kenya.

2.0 Theoretical Review

2.1 Agency Theory

The agency theory was put forward by Jensen and Meckling in 1976. Agency theory refers to a set of propositions in governing a modern corporation which is typically characterized by large number of shareholders or owners who allow separate individuals to control and direct the use of their collective capital for future gains (Percy, 2013). The agency theory is concerned with reducing the agency problem which will lead to increase value maximization. It provides a direct link between corporate governance and financial performance. Meckling (1976) on agency theory, argue that a firm is made of binding contracts between the owners of factors of productions and agents. Information asymmetry is the most common problem between the principal and the agent. The theory therefore suggests that to balance the demands of the parties information flow between them must be enhanced.

This theory applies to the study in the sense that when the demands of the owner are made agency costs are minimized. Agency costs can cause a firm to experience financial problems that leads to liquidity risks which undermines the normal operations of the bank for case. The theory supports the decision making role of the top management to ensure commercial banks and its employees adopt the best financing strategies and optimally utilize the resources within the organization to reduce the bad effects of liquidity risks.

2.2 Stakeholder Theory (Freeman 1984)

This theory was founded by Freeman in (1984) as a managerial instrument that addressed morals and values in managing an organization. This theory argued that there are other parties involved in the operation of any organization including employees, customers, suppliers, financiers and governments that have interests in the organization. Stakeholder theory underpins the study by identifying the interested parties who are affected when the financial risks either benefit the company or deprives the value of the company. According to Klimczak, (2005) corporate risk management practices lead to decreased expected costs, and high company value. Therefore stake holders provide new insights

into possible rationale for risk management. Commercial banks can mitigate the possibility of financial distress by hedging variability in earning through finding how financial risks are related to financial performance of the firm.

For example, while shareholders generally define value in financial terms, others stakeholders may seek benefits such as the satisfaction of pioneering a particular breakthrough, supporting a particular kind of corporate behavior or where the owner is also the operator, working in a particular way. It means stakeholders have non-equity stakes which requires management to develop and maintain all stakeholder relationships, and not of just shareholders. This suggests the need for reassessing performance evaluation based on traditional measures of shareholder wealth and profits by including measures relating to different stakeholder groups who have non-equity stakes. Nonetheless many firms do strive to maximize shareholder value while, at the same time, trying to take into account the interest of the other stakeholders.

2.3 Enterprise Risk Management Theory

A company can employ risk management through two major ways by either managing risk separately, or by managing all the risks together. Managing of risks together is referred to as enterprise risk management (ERM). According to Tseng (2007), Enterprise Risk Management (ERM) focuses on a consistent and systematic proven approach to manage various risks in a company is exposed to. Gordon et al. (2009) explains ERM as the way an organization's exposure is managed to uncertainty by emphasizing on managing and identifying the events that could be preventing the organization from reaching it goals. ERM is applicable in all management levels of the firm.

According to Committee of Sponsoring Organizations (COSO) (2004), Enterprise risk management is a way, that the management, board of directors and other staff in the organization effects. ERM identifies potential events that might hit the organization, is applied across the enterprise in strategy setting, management of risk within the risk appetite, and provide reasonable assurance towards entity objectives achievement.

ERM looks at various methods that an organization's risk manager con concentrates on ie intellectual assets, people, brand values, skills, business expertise, the regulatory environment, principle source of profit stream (Searle, 2008). This helps an organization to balance business pressures like delivering success to stakeholders and manage risks to sustain the business. The risk constantly monitors the risk exposure and is positioned to change strategy and ensure risk is at manageable level. The theory is applicable to the study by outlining the steps of managing financial risks.

2.4 International Fisher Effect Theory (Irving Fisher 1930)

This theory was developed by Irving Fisher in his journal The Theory of Interest (1930) which postulated the inflation rate and nominal interest rate relationship stating that that inflation rate is explained by nominal interest rate after a long time hence real interest rate is a constraint in the long run without being affected by inflation expectations. The emphasis of this theory in the banking sector is due to differences in the supply and

demand of currencies which involves changes in price, thus its exchange rate. Commercial banks are highly affected by foreign exchange rate risk due to: international commerce, investment, arbitrage and speculation (Gonzales, 2000). Kozikowski, (2000) portends that the currencies exchange rates shows weaknesses of the interest rates with regard to risk free instruments of various currency alternative. Countries whose currencies are faced by the challenge of high interest rates in the markets should appreciate with time.

Madura (2010) contents that foreign currencies bearing high interest rates usually depreciates due to high nominal interest rate due to prospect of high rate of inflation. Many industries always use commercial banks as a platform to fix future rates in forward contracts so as not to suffer from foreign exchange loss, this has made banks to engage foreign exchange trade and gain spread as gains. The theory is applicable to the study by explaining the relationship existing inflation rate and nominal interest rate and how they existing inflation rate and nominal interest rate influence financial performance of commercial banks.
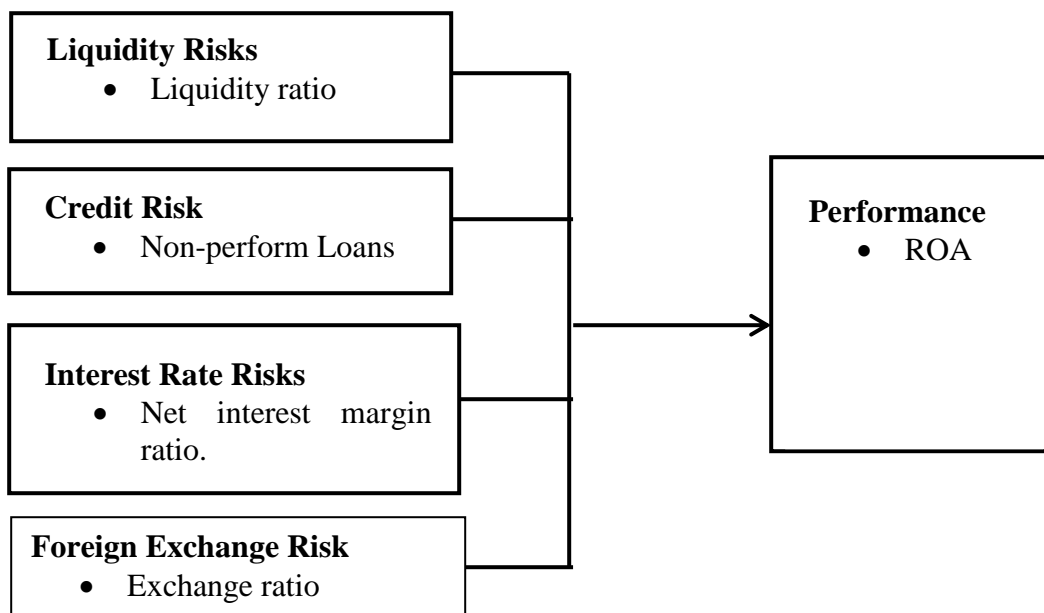
2.2 Conceptual framework

Figure 1: Conceptual Framework

3.0 Research Methodology

The study adopted positivism philosophy. The study adopted explanatory research design. The target population was 42 commercial banks in Kenya. Census was adopted since it gives equal chance to capture the data of every commercial bank in Kenya. The researcher used secondary data of the commercial banks in Kenya. The data was collected for the period of five years from 2010 to 2015. Analysis involved descriptive,

correlation and panel regression. Analytical model that tested and estimated the effect of financial risks on financial performance of commercial banks in Kenya using panel data was as follows:

$$P_{it}=\alpha+\beta_1 x_{1it}+\beta_2 x_{2it}+\beta_3 x_{3it}+\beta_4 x_{4it}+\text{€}$$

Where:

P= Performance as measured by ROA

α = Constant.

€=Error term

x_{1it} = liquidity risk

x_{2it}=Credit risk

x_{3it}=Interest risk

x_{4it}=Foreign exchange risks

$\beta_1\ \beta_2\quad \beta_{3\ \&}\beta_4$

Where Betas 1 to 4 are the coefficients for independent variables respectively.

4.0 Data Analysis

4.1 Descriptive Statistics and Trend Analysis

Results in table 1 indicate the descriptive statistics of ROA, liquidity ratio, credit risk, interest rate risk and foreign exchange risk together with their respective trend analysis. The trend analysis is performed to determine the variables movements in the study and also help to perform analysis of unit root and the trend graphically showing the variables pattern of movement.

Table 1: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Std. Dev
ROA	-0.136	0.104	0.027	0.028
Liquidity Ratio	0.100	0.900	0.430	0.220
Credit Risk	-0.200	1.000	0.085	0.260
Interest rate risk	0.200	23.900	2.923	2.492
Foreign Exchange Risk	0.100	22.600	0.996	2.307

As indicated in the table 1 the total mean of ROA for the period 2010 to 2015 was 0.027 implying that the performances of commercial banks in Kenya on average are profitable. With a standard deviation of 0.028 indicating small variability in ROA over time. The Maximum and minimum values of ROA during the period of time were -0.136 and 0.104 respectively this indicating that whereas some commercial banks are performing well to the maximum of 0.104, there are some which are performing below average hence -0.136.The total mean of liquidity ratio for the period 2010 to 2015 was 0.430 with a

standard deviation of 0.220 indicating variability in liquidity ratio over time. The Maximum and minimum values of liquidity ratio over the same period of time were 0.100 and 0.900 respectively. This Data implies that liquidity risk of the commercial banks are managed well since there is no negative minimum mean, implying that the commercial banks are following the guidelines of Central Bank of Kenya as illustrated in the prudential guidelines. Figure 2 shows the trend line for ROA. Trend line shows that ROA decreased from 2010-2012, rose in 2013 and later decreased however at slow rate.
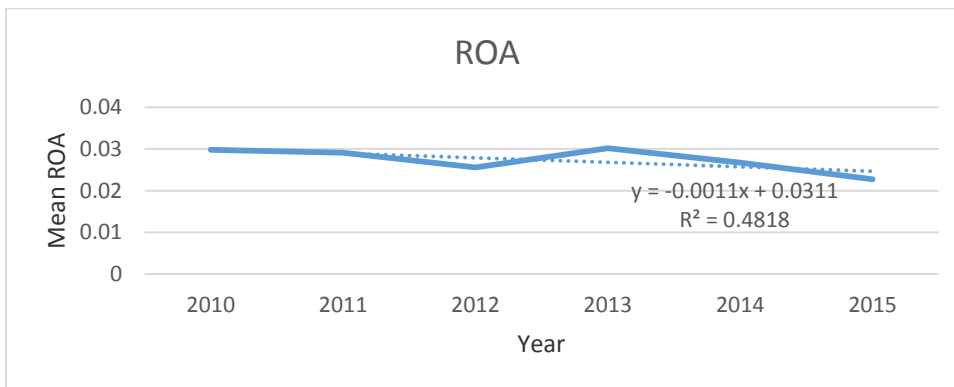

Figure 2: Trend of ROA for the year 2010-2015

Figure 3 shows the liquidity ratio trend for the 42 banks from the year 2010 to 2015. The trend indicates that liquidity ratio has generally been on a decrease over the years with a significant drop in the year 2014.
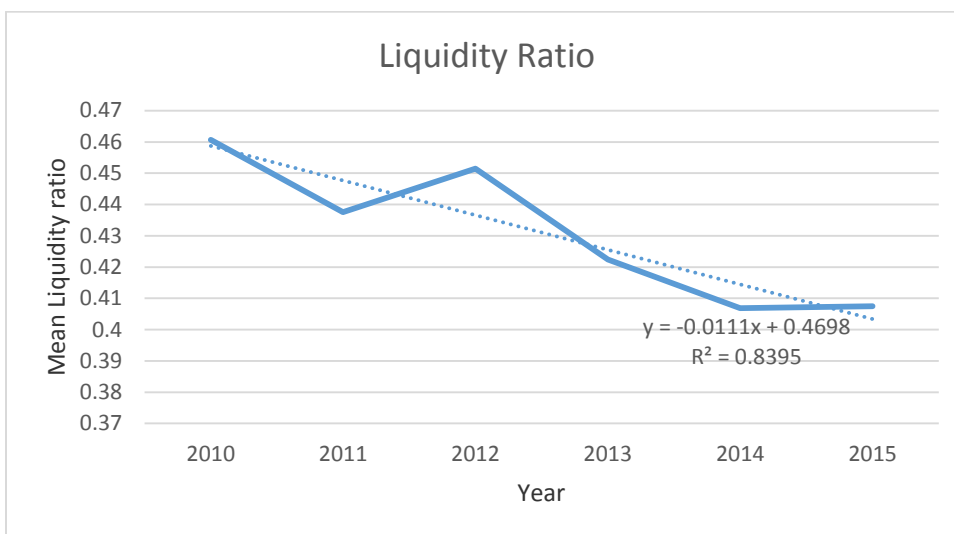

Figure 3: Trend of Liquidity ratio for the year 2010-2015

The results depicts the total mean of credit risk for the period 2010 to 2015 was 0.085witha standard deviation of 0.260 indicating small variability in credit risk over time. The Minimum and Maximum values of credit risk over the same period of time were -0.200and 1.000 respectively. The negative liquidity risk shows that some commercial banks were operating with too much non-performing loans as compared to the deposits which makes the commercial banks to perform poorly due to high default rate that tie the banks money in form of interests. Figure 4 shows the credit risk trend for the 42 banks from the year 2010 to 2015. The trend line indicates that the credit risk ratio has been increasing overtime since 2010 to 2015.
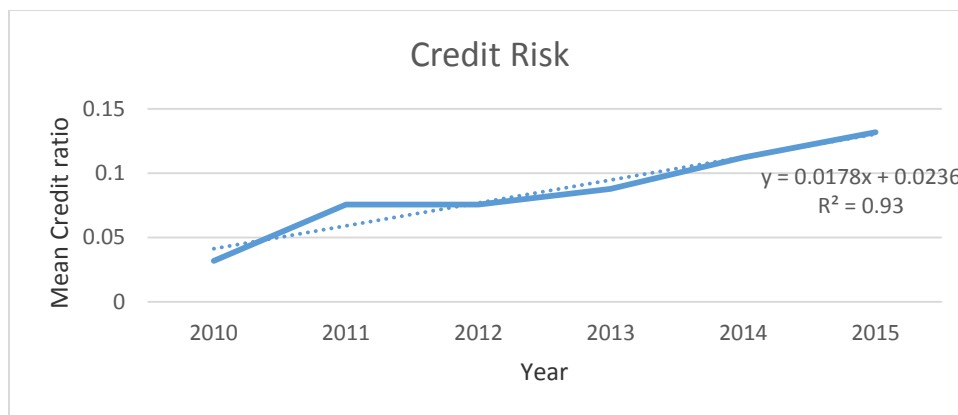

Figure 4: Trend of credit risk ratio for the year 2010-2015

The total mean of interest rate risk for the period 2010 to 2015 was 2.923 with a standard deviation of 2.492 indicating a large variability in interest rate risk over time. The Minimum and Maximum values of interest rate risk over the same period of time were 0.200 and 23.900 respectively. This Implies that there are few banks that are making income due to very high interests while others are making very low interest margins causing some commercial banks to grow while others stagnate. This trend shows that commercial banks had been left to operate liberally and could set any interest rate as long as it has clients. Since this is the major source of income then there should be measures to manage it. Figure 5 shows the Interest Rate Ratio trend for the 42 banks from the year 2010 to 2015.The trend line indicates that Interest Rate Ratio trend has been fluctuating though with decreasing trend with a significant drop in the year 2012.
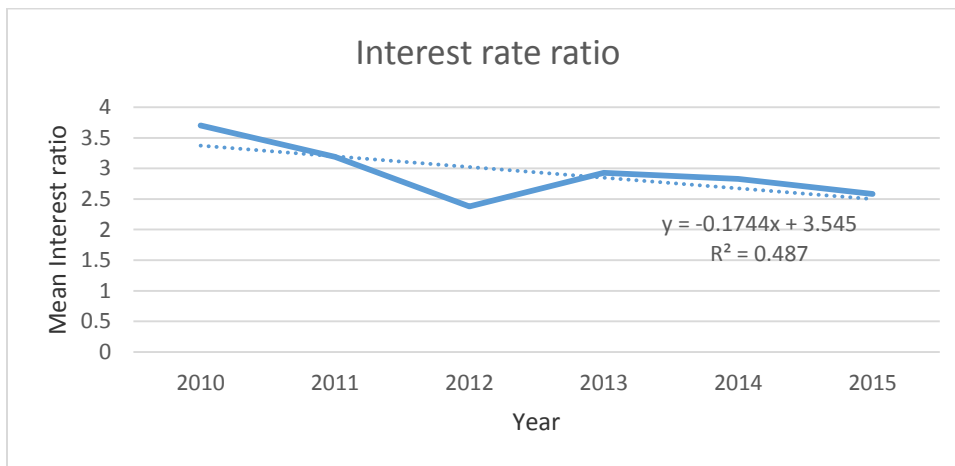
Figure 5: Trend of Interest Rate Ratio for the year 2010-2015

Lastly, as indicated in the1 the total mean of Foreign Exchange Risk for the period 2010 to 2015 was 0.996 with a standard deviation of 2.307 indicating a large variability in Foreign Exchange Risk over time. The Minimum and Maximum values of Foreign Exchange Risk over the same period of time were 0.100 and 22.600 respectively. There was a steep drop of foreign exchange rate in 2013 due to election period where by many investors divested there investment to safe havens causing Kenya shilling to drop hence decreasing the performance of commercial banks, after 2014 their performance increased. Figure 6 shows the Foreign Exchange Risk trend for the 42 banks from the year 2010 to 2015.The trend line indicates that Foreign Exchange Risk has been consistent over time.
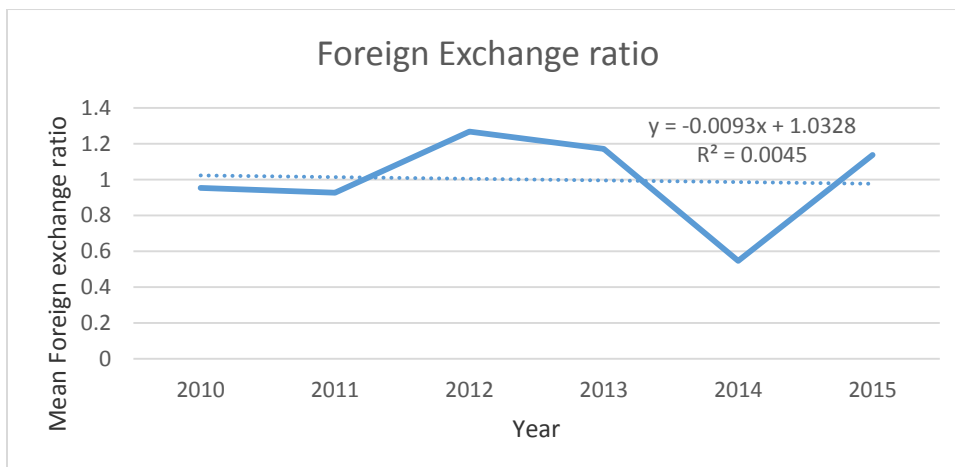

Figure 6: Trend of Foreign exchange ratio for the year 2010-2015

4.2 Correlation Analysis

Correlation analysis is the statistical tool that can be utilized to determine the level of association between two variables. Correlation matrix was developed to analyze the strength of association between the expenditure on internal audit and expenditure on environmental audit. Table 2 presents the results of the correlation analysis.

Table 2: Correlation matrix results

	ROA	Liquidity Ratio	Credit Risk	Interest rate ratio	Foreign exchange ratio
ROA	1.000				
Liquidity Ratio	0.1570*	1.000			
Credit Risk	-0.1566*	0.113	1.000		
Interest rate ratio	0.1667*	-0.096	-0.100	1.000	
Foreign exchange ratio	-0.2507*	-0.088	-0.104	0.100	1.000

The results shows a significant and positive association between ROA and liquidity ratio (r=0.1570, p<0.05). This implies that liquidity ratio move in the same direction with financial performance of commercial banks measured in terms of ROA. The results also agree with Maaka, (2013) who studied on the relationship between liquidity risk and financial performance of commercial banks in Kenya and found that profitability of commercial banks in Kenya is negatively affected due to increase in liquidity gap and leverage.

The results revealed that there was a negative and a significant association between credit risk and ROA (r=-0.1566, p<0.05). This implies that credit risk move in opposite direction with financial performance of commercial banks measured in terms of ROA. The results also agree with Ara, Bakaeva and Sun (2009) who studied credit risk management and profitability in commercial banks of Sweden and revealed that credit risk management has an effect on profitability in all the four banks.

Further, the results shows a positive and significant relationship on interest rate ratio and ROA (r=0.1667, p<0.05). This implies that interest rate ratio move in the same direction with financial performance of commercial banks measured in terms of ROA. According to Ngalawa and Ngare, (2014) who conducted a study on interest rate risk management and financial performance of commercial banks in Kenya, there is sensitivity of income gaps to market interest rates as determined by the CBK through treasury instruments.

Finally, correlation analysis showed a negative and a significant association between foreign exchange ratio and ROA (r=-0.2507, p<0.05). This implies that foreign exchange ratio move in the opposite direction with financial performance of commercial banks

measured in terms of ROA. The exchange rate risk is associated with depreciation in the local currency, an increase in prices and a decrease in output (Berument & Dincer, 2004).

4.3 Hausman Test for random and fixed effects

In order to choose between fixed and random effects model for model, the Hausman test was used. Table 3 illustrates the results of the Hausmans test. The null hypothesis of the Hausman test was that the random effects model was preferred to the fixed effects model. For the model, Hausman test reported a chi-square of 1.09 with a p-value of 0.9855 implying that at 5 percent level, the chi-square value obtained was statistically insignificant. The researcher therefore failed to reject the null hypothesis that random effects model was preferred to fixed effect model for return on assets as recommended by Greene (2008).

Table 3: Hausman Random Test for random and fixed effects

Column1	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Liquidity Ratio	0.049384	-0.052279	0.003562	0.00742
Credit Risk	-0.027458	-0.028134	0.000676	0.001307
Interest rate ratio	0.007855	0.007356	0.000499	0.000893
Foreign exchange ratio	0.232333	0.2389956	-0.00666	0.011326

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
$chi2(4) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B) = 1.09$
Prob>chi2 =   0.9855
(V_b-V_B is not positive definite)

4.4 Regression Analysis

Liquidity Ratio, Credit Risk, Interest rate ratio and Foreign exchange ratio were found to be sufficient variables to explain financial performance. The coefficient of determination R square of 54.8% supports the results. This means Liquidity Ratio, Credit Risk, Interest rate ratio and Foreign exchange ratio explain 54.8% of the variations in the dependent variable which is financial performance.

Table 4: Model Fitness

Indicator	Coefficient
R	0.740
R Square	0.548
Adjusted R Square	0.540
Std. Error of the Estimate	0.0266786

The p-value shows the level of relationship that exists between the independent variable to the dependent variable. When the significance level is lower than the critical value/probability value (p) which is at 0.05 statistically, the conclusion is that the model is significant to explain the relationship.

Table 5 shows the results on the ANOVA. The model is statistically significant from the results. The independent variables are good predictors of the commercial banks performance in Kenya. The F statistic of 73.288 and the p value (0.000) which is lower than the required 0.05 probability of significance level agrees with the results.

Table 5: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.209	4	0.052	73.288	.000
Residual	0.172	242	0.001		
Total	.381	246			

Regression of coefficients results in Table 6 shows that liquidity ratio and ROA are positively and significantly related (β=0.039, p=0.000). This means that a one percent increase in liquidity ratio, leads to an increase in ROA by 3.9%. The results conger with Aneez, (2010) who studied on Liquidity risk and liquidity risk measures he carried out the study at Cape Town whose goal was to distil a clear definition for liquidity, molding organic groupings between the measures based on similarities of purpose and assessing them in terms of accuracy and practicality.

Table 6 further indicates that credit risk and ROA are negatively and significantly related (β=-0.014, p=0.041). This means that a one percent increase in credit risk, leads to a decrease in ROA by 1.4%. The results also agree with Ara, Bakaeva and Sun (2009) who studied credit risk management and profitability in commercial banks of Sweden and revealed that credit risk management has an effect on profitability in all the four banks. The results also agree with Afriyie and Akotey (2012) who examined the impact of credit risk on the profitability of rural and community banks in the Brong Ahafo Region of Ghana and found that there is a relationship between the credit risk management and profitability of selected rural banks in Ghana.

It was further established that interest rate and ROA were positively and significantly related (β=0.002, p=0.000). The results are in tandem with Tafri *et al.,* (2009) who examined the relationship between financial risk and profitability of the conventional and Islamic banks in Malaysia and established that interest rate risk influenced the profitability of commercial banks. This means that a one percent increase in Interest rate ratio, leads to an increase in ROA by 0.2% while foreign exchange risk and ROA were negatively and significantly related (β=-0.003, p=0.000). This means that a one percent increase in Foreign Exchange ratio, leads to a decrease in ROA by 0.3%. according to Gachua (2011) who did a study on the effect of foreign exchange exposure on a firm's financial performance of a case of selected listed companies in the Nairobi Stock

Exchange unrealized foreign exchange gains/losses had an effect on the Net Income of listed companies as it was posted to either income statement or owners' equity.

Table 6: Regression of Coefficient

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Liquidity Ratio	0.039	0.005	0.483	8.062	0.000
Credit Risk	-0.014	0.007	-0.094	-2.052	0.041
Interest rate ratio	0.002	0.001	0.236	4.042	0.000
Foreign Exchange Risk	-0.003	0.001	0.207	4.417	0.000

The specific model therefore was;

$ROA = 0.000 + 0.039X_{1t} - 0.014X_{2t} + 0.002X_{3t} - 0.003X_{4t}$

Where:

FP (ROA)= Financial performance as measured by ROA

X_{1t} = liquidity risk

X_{2t} = Credit risk

X_{3t} = Interest risk

X_{4t} = Foreign exchange risks

4.5 Hypothesis Testing

The hypothesis was performed using multiple linear regressions. The rejection and acceptance criteria were when p value is ≥ 0.05, the Ho_1 is not rejected but if it's < 0.05, the Ho_1 is rejected.

The first hypothesis was that there is no statistically significant relationship between Liquidity risk and return on assets of commercial banks in Kenya. Results in Table 5above show that the p-value was $0.000 < 0.05$. This indicated that the null hypothesis was rejected hence the conclusion is, there is a statistically significant relationship between Liquidity risk and return on assets of commercial banks in Kenya.

Further, the study hypothesized that there is no statistically significant relationship between Interest rate Risks and return on assets of commercial banks in Kenya. Results in Table 6 show that the p-value was $0.000 < 0.05$. This indicated that the null hypothesis was rejected hence the conclusion is that there is a statistically significant relationship between Interest rate Risks and return on assets of commercial banks in Kenya.

It was also hypothesized that there is no statistically significant relationship between foreign exchange risks and return on assets of commercial banks in Kenya. Results in Table 6 show that the p-value was $0.000 < 0.05$. This indicated that the null hypothesis

was rejected hence the conclusion is that there is a statistically significant relationship between foreign exchange risks and return on assets of commercial banks in Kenya.

5.0 Conclusions

Based on the findings above the study concluded that liquidity ratio and ROA are positively and significantly related. The null hypothesis was rejected hence there is a statistically significant relationship between Liquidity risk and return on assets of commercial banks in Kenya. The implication of the findings is that if the liquidity risk is well managed then the commercial banks gets very high returns but when liquidity risk is not managed well then the performance of commercial banks declines drastically. This study reveals that the liquidity risk of commercial bank has been well managed hence the theory of enterprises risk management is abides in this study.

The study concluded that credit risk has a negative and significant effect on ROA. The null hypothesis was rejected hence there is a statistically significant relationship between credit risk and return on assets of commercial banks in Kenya. When non-performing loans increases then the income of commercial banks declines since it has significant relationship with ROA.

Further, based on the findings, the study concluded that interest rate risk has a positive and significant effect on ROA. The study reveals that the higher the interest charged by the bank the higher the income the bank is likely to gain, the lower the interest the bank charges the lower the income hence the bank should abide by the CBK guidelines so as to charge optimal interest.

Lastly, the study concluded that foreign exchange risk has a negative and significant effect on ROA. The null hypothesis was rejected hence there is a statistically significant relationship between foreign exchange risks and return on assets of commercial banks in Kenya. The study showed that foreign currency exchange exposure has an adverse effect on banks income.

6.0 Recommendations

The study also recommends that it is vital for the management of the Kenyan bank to be aware of its liquidity position in different product segment. This will help in enhancing their investment portfolio and providing a competitive edge in the market. It is the utmost priority of a bank's management to pay the required attention to the liquidity problems. These problems should be promptly addressed, and immediate remedial measures should be taken to avoid the consequences of the bank becoming illiquid.

From findings, it is recommended that management of Kenyan commercial banks should enhance their capacity in credit analysis and loan administration. Clear credit policies and lending guidelines should be established. Management also is required to make sure that the terms and conditions are adhered to in loans approval. Hence lending guidelines should be approved by senior management and made aware to all staffs. This will reduce loss on nonperforming loans and improve the asset quality management which raises banks' expenses and consequently increase profitability. It is also recommended that the

bank need to monitor the loan and advances to total deposits ratio frequently since it also affect profitability.

From the findings of this study, high interest rate risk can lead banking corporations to huge losses and threaten their capital base. It is essential that banking corporations have a comprehensive risk management system put in place that effectively measures, identifies, controls and monitors exposures of the interest rate risk, subject to proper senior management and board supervision. The study also recommends that commercial banks should explore avenues to enhance capacities within banks for managing interest rate risks. Commercial banks especially locally owned are required to consider finding ways of mitigating the market risks such use of financial derivatives and asset securitization which will reduce their interest rate. This can be done by use of generally accepted financial concepts and techniques for risk measurement.

Finally, the study recommends that commercial banks need to identify the risk appetite of its stakeholders including the directors. This helps to determine the method appropriate for hedging against foreign exchange risk. The study recommends the use of Forward exchange contract. Forward exchange contract helps businesses to shield itself from the adverse shifts in exchange rates by fixing an exchange rate until future date.

7. 0 References

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