Journal of Finance and Accounting

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ISSN: 2616-4965

Stratford Peer Reviewed Journals and Book Publishing
Journal of Finance and Accounting
Volume 4||Issue 5||Page 25-40 ||November||2020|
Email: info@stratfordjournals.org ISSN: 2616-4965

The Effect of Central Bank Rate on Financial Performance of Commercial Banks in Kenya

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***How to cite this article*: Mabati J., R. & Onserio R. F (2020) The Effect of Central Bank Rate on Financial Performance of Commercial Banks in Kenya. *Journal of Finance and Accounting,* Vol 4(5) pp. 25-40.**

Abstract

Interest rates are fundamental to profitability of any business organization and are normally expressed as a percentage rate over the period of one year. Interest rates as a price of money reflect market information regarding expected change in the purchasing power of money or future inflation. The objective of the study was to investigate the relationship that exists between the Central Bank Rate and the financial performance of the commercial banks in Kenya. This study was anchored on the classical theory of interest rates, the Keynesian Theory, The Rationale Expectation Theory of Interest Rates and Loanable fund theory. This study was descriptive in nature. The target population of the study comprised of all the 43 licensed commercial banks in Kenya as at 31st Dec 2014. The study used secondary data. Regression analysis revealed that there was a strong correlation between the quarterly return on assets of Kenyan commercial banks, the quarterly average central bank rate, the quarterly average liquidity risk and the quarterly average inflation rate. The study recommends that the monetary policy committee of the Central Bank of Kenya should sets the rate with a good level of effectiveness. The study also recommends that the committee should therefore enhance the initiatives that are employed in order to set a good rate. Some of the limitations were that the study used a limited period of 10 years, which yielded only 40 observations (Quarters). There could have been more insight where the study period could be extended for a longer period of more than 10 years. The data used was also largely aggregated, for the entire banking industry in Kenya. Considering the fact that the Central Bank Rate applies to

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all licensed commercial banks, the use of aggregated data became an ideal choice. It could however not allow for an examination of how individual commercial banks attempt coping with the changes that are normally occasioned by changes in the Central Bank Rate.

Key words: *Interest rates, Financial Performance and Commercial Banks*

Introduction

Interest rate is the price a borrower pays for the use of money they borrow from lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). Theoretically, there exist a relationship between inflation, central bank rate and the profitability of firms, since inflation can influence the central bank rate which directly influences the cost of capital and the return on savings. A change in interest rate affects the debt equity choice of a firm; Hualan (1992) found that interest rate is one of the most important factors that affect the overall bank financial performance. Interest rates are major economic factors that influence the economic growth in an economy. Corb (2012) argued that interest rate is an economic tool used by Central Bank of Kenya (CBK) to control inflation and to boost economic development, the rationale behind the need to control interest charged on credit or any financial instruments is based on the need to control economic patterns that has great effects to the entire economy. Howells (2008) revealed that increase in interest rates makes savings from current income more attractive, increases repayment of existing floating -rate debt and thus lowering disposable income, with possible loan default; increases the cost of goods obtained on credit; lowers the prices of financial assets and hence influence estimates of private sectors wealth and lowers house prices. Ngugi (2001) study established that Kenya's experience indicates a widening spread in the post-liberalization period.

Statement of the Problem

Kenya has been observed to have relatively high interest rates spreads (IRS) as compared to those prevailing in developed countries. Despite the ongoing financial sector reforms aimed at enhancing competition, the spread instead of narrowing down has been either stagnant or growing. High interest rates spread imply that a bank is charging high interest rate on loans thus decreasing its loan customer base. It also indicates that savers are paid low interest on their savings hence decreasing supply of loanable funds. This trend has significant implications for the banking industry. Fixing the exchange rate, by reducing risk premier (which cause deviations between domestic and world interest rates via the modified uncovered interest parity relationship), can provide a further stimulus to investment and growth, by bringing domestic interest rates more in line with (presumably efficient) world interest rates (Tireito, 2012).

Having introduced the CBR in 2005, the CBK hopes to emulate its older peers in the more developed markets in setting up an effective market signaling instrument of monetary policy that will be generally accepted by financial market players as a result of which, financial markets will be quick to align their retail interest rates with those of the policy rate. Shifts in money-market rates, including the policy rate, are not completely passed through to retail lending rates in the Euro Zone and as such loan rates (retail rates) depend on how commercial banks react to the shifts in money market rates (policy rates); if commercial banks do not promptly respond to a change in money market rates, then a policy shift will not be widely felt in the economy (Kobayashi, 2008).

A study by Ngugi (2001) showed that Kenya's experience indicates a widening spread in the post-liberalization period. The results show that the interest rate spread increased because of yet-to-be

gained efficiently and high intermediation costs. The increase in spread in the post-liberalization period stemmed from the failure to meet the prerequisites for successful financial reforms and the lag in adopting indirect monetary policy tools ad reforming the legal system. The study also found that commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans.

Most of the studies conducted have concentrated on the relationships between the interest charged by commercials banks and the levels of nonperforming loans in commercial banks in Kenya this includes: Musya (2009), who focused on the impact of non-performing loan on the performance of commercial banks in Kenya. Akahegae (2011), who examined the determinants of nonperforming among commercial banks in Kenya. Gaitho (2010), who carried out a survey on the main causes of nonperforming loans in commercial banks in Kenya; Kiptoo (2011), who carried out research on strategic response adopted by KCB to cope with nonperforming loans and Tereito (2012), who studied the relationship between interest rate and non-performing loans in commercial banks in Kenya. None of above has focused on the relationship between the changes in CBR and financial performance of commercial banks yet CBR is one of the most watched interest rate in the economy. This leads to the question; what is the nature of relationship between the changes in central bank rate and the financial performance of commercial banks in Kenya?

Objective of the Study

The objective of the study was to investigate the relationship that exists between the Central Bank Rate and the financial performance of the commercial banks in Kenya.

Literature Review

Theoretical Foundation

This study was anchored on the classical theory of interest rates, the Keynesian Theory, The Rationale Expectation Theory of Interest Rates and Loanable fund theory.

The Rationale Expectation Theory of Interest Rates

The theory is based on the idea that people formulate expectations based on all the information that is available in the market. Rationale expectation theory holds that the best estimation for future rates is the current spot rate and that changes in the interest rates are primarily due to unexpected information or changes in the economic factors. The rational expectation theory can be incorporated with the loanable fund theory in order to better consider the available information within the economy.

The limiting factors of rational expectation theory are mostly related to the difficulties in gathering information and understanding how the public uses its information to form its expectations (Caplan 2000), if the expectation of the people is that interest rates will rise many people will avoid borrowing this in turn will affect the banks performance due to reduced earnings on the interest rates, but if people expect interest rate to drop then people will be willing to borrow and this will improve the performance due to increase in interest earning (Bekaert, 1998)

Loanable Funds Theory

The concept of the Loanable Fund Theory formulated by Wicksell (1893) the well-known Swedish economist, states that the rate of interest is calculated on the basis of demand and supply of

loanable funds present in the capital market. It advocates that both savings and investments are responsible for the determination of the rates of interest in the long run. Ngugi (2001) argued that interest rate is the price that equates the demand for loanable funds with the supply of loanable funds. The loanable funds theory is in many regards nothing but an approach where the ruling rate of interest in society is- pure and simple- conceived on nothing else than the price of loans or credit, determined by supply and demand in the same way as the price of eggs and strawberries on a village market (Ohlin, 1937). The amount of loans and credit available for financing investment is constrained by how much saving is available. Saving is the supply of loanable funds; investment is the demand for loanable funds and assumed to be negatively related to the interest rate. Lowering households' consumption means that via a lower interest increase investment (Mankiw, 2003)

The Keynesian Theory

Also called the monetary theory of interest was put forward by Keynes (1936). In the theory he stated that the rate of interest is determined by the supply of money and the desire to hold money. He thus viewed money as a liquid asset interest being the payment for the loss of that liquidity. Keynes formula is derived from free motives for holding money. Transaction motive is a desire to hold cash in order to conduct cash-based transaction. Usually high-income earners have high disposable income for transaction motive. Precautionary motive occurs in response to uncertainty regarding future income. The precautionary motive to delay consumption and save in the current period rises due to lack of completeness of insurance markets. Speculative motive is a desire to hold cash in order to be poised to exploit any attractive investment opportunity requiring cash expenditure in that might arise.

The Classical Theory of Interest Rates

This theory was advanced by classical economists Clark *et al.* (1790). The theory defines the rate of interest as the element that equates savings and investment. Here investment is nothing but the demand for investible resources and savings in their supply. The rate of interest that is determined by the interaction of investment and savings is the price of the investible resources. Proponents of the classical theory of interest have different ways of looking at the theory. The effect is an increase in the money supply, lower interest rates and a rise in aggregate demand. This will boast growth as measured by gross domestic product (GDP).

Empirical Literature Review

Determinants of Financial Performance of Commercial Banks

Factors affecting commercial bank's performance according to profitability are broadly categorized into internal and external factors. Internal factors are mainly influenced by a bank's management decision and policy objectives (Staikouras & Wood, 2004), whereas external factors focus on industry related and macroeconomic variables reflected in the economic and legal environment where banks operate (Athanasoglou, Delis & Staikouras, 2006). Bernanke and Blinder (1992) in their research 'the federal fund rate and the channel of monetary transmission' studied disaggregated data on bank's balance sheet to provide a test of the lending view of monetary transmission. They found through analysis of the data that the interest rate on federal funds is really informative about future movements of real macroeconomic variables (that includes financial performance of commercial banks and other depository institutions). In conclusion, the reason for this forecasting success is that the funds rate sensitively records shocks to the supply of banks reserve; i.e. the fund rates is a good indicator of monetary policy action. Cheng (2006) did

a study titled "A VAR analysis of Kenya's monetary policy transmission mechanism: How does the Central Bank's Rate REPO Rate affect the economy?", this paper examined the impact of a monetary policy shock on output prices and the nominal or effective exchange rate for Kenya using data during 1997-2005. Based on techniques commonly used in the vector auto regression literature, the main results suggest that an exogenous increase in the short-term interest rates tends to be followed by a decline in the prices and appreciation in the nominal exchange rate. It highlights that short-term interest rate changes account for significant fluctuations in the exchange rates and prices.

Moessner and Nelson (2008) did a study titled "central bank policy rate and financial market functioning". They found that forecasts of future policy rates released by the Reserve Bank of New Zealand have a significant effect on New Zealand interest rate futures whereby they used RBNZ provided forecasts of the ninety –day bank bill rate from July 1997 to 2007 and match this with the market interest rates of the same particular period. In a highly volatile market, bank interest rates were shown to react accordingly to the policy rates whereby increase in the former lead to a corresponding increase in the latter. It contends that central bank policy rates provide guidance about the current and future bank interest rates and therefore notes one of the frequently made arguments against the provision by central banks of such guidance is that it runs the risk of impairing financial market performance. It is therefore imperative that in an economy where market participants have imperfect information about the determination of monetary policy, central bank communication of interest rate projections is desirable because this projection can help shape out commercial banks objectives and financial expectations.

Capital Adequacy

Min (2006) defined the adequate capital for banks as the level at which the deposit insuring agency would just breakeven in guaranteeing the deposits of individual banks with the premium the banks pay. An option of theoretical framework was employed in his study for measuring fair capital adequacy holdings for a sample of depository institutions in Taiwan, during 1985-1992 except for 1989 where the banks had a crisis. Mpunga (2004) argued that the inadequacy of minimum capital standards in accounting for risks in banks assets portfolio could be one of the major factors leading to bank failures. He studied the 1998-99 banking crisis in Uganda and how the new banking guidelines in Uganda were to increase bank solvency and capital inadequacy.

Market Structure

The market structure matters for the bank's power in setting interest rates that can directly affect its performance. A positive statistical relationship between measures of market structure, such as concentration or market share, and profitability has been reported by many banking studies. (Tregenna, 2009; Fu & Heffernan, 2009) distinguish two theoretical approaches concerning the market- structure profitability in banking: the Market-Power (MP) and Efficiency- Structure (ES). The MP paradigm states that the market structure of banking industry affects bank's behavior and their performance. This paradigm argues that in more concentrated banking industry banks may use market power in ways that may enhance banks' profitability. In contrast, the ES paradigm states that more efficient banks are capable to expand their market share and earn higher profits.

Inflation

Revel (1979), first analyzed the effect of inflation on bank profitability and discovered that it depends on whether banks operating expenses increased faster than the inflation rate. Therefore,

the impact of inflation is contingent on the overall macroeconomic stability that allows the correct predicting of inflation. According to Perry (1992) the relationship between inflation and banks performance depends on whether the inflation is anticipated by a bank's management. By correctly predicting inflation and adjusting interest rates, managers can raise revenues faster than costs.

Firm Size

Size is described by the accounting value of banks total assets. However, increase in size can lead to decreasing profits for banks due to cumbersome bureaucracy (Davydenko, 2010). Short (1979) argues that size is closely related to the capital, and, hence, appear more profitable. He linked bank size to capital ratios, which he claimed to be positively related to size, meaning that as size increases- especially in the case of small to medium- sized banks- profitability rises. However, many other researchers suggest that little cost saving can be achieved by increasing the size of a banking firm (Berger et al., 1987), which suggests that eventually very large banks could face scale inefficiencies.

Liquidity Risk

Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to Dang, Gorton and Holmström (2011) adequate level of liquidity is positively related with bank performance. Thus, banks that maintain adequate level of liquidity tend to be more profitable. The most common financial ratios that reflect the liquidity position of a bank according to Samad (2004) are customer deposit to total asset and total loan to customer deposits. A study by Graham and Bordeleau (2010) suggests that a nonlinear relationship exist, whereby profitability is improved for banks that hold some liquid assets, however, there is a point beyond which holding further liquid assets diminishes a banks' profitability, all else equal. At the same time, estimation results provided some evidence that the relationship between liquid assets and profitability depends on the bank's business model and the risk of funding market difficulties.

Ownership

According to Jensen and Meckling (1976), the more the ownership structure is dispersed, the more the agency costs are higher. The presence of large shareholders mitigates the classic owner-manager agency problems through their strong incentives to collect information and substantial power to influence management (Shleifer & Vishny, 1986), which would result in a more efficient governance structure leading to an important value for shareholders. However, the ownership concentration stresses the entrenchment of the large shareholder and the incentives to expropriate minority shareholders and depositors. Large shareholder can obtain private benefits of control which will negatively affect the corporate value (Johnson et al., 2000; Gutiérrez &Tribo, 2004). In the banking sector, the extraction of private benefits is detrimental not only to minority shareholders but also to the depositors. With large power, dominant shareholder may expropriate small ones (Stulz, 1988). It induces insider expropriation, distorts management decision making and may reduce small-shareholder welfare (Shleifer &Vishny, 1997).

Interest Rate

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). Ngugi (2001) analyzed the interest rates spread in Kenya from 1970 to 1999 and found that interest rate spread increased because of yet-to-be gained efficiency and high intermediation cost. Fiscal policy actions saw an increase in Treasury bill rates and high inflationary pressure that called for tightening of monetary policy. As

a result, banks increased their lending rates but were reluctant to reduce the lending rate when the Treasury bill rate came down because of the declining income from assets. They responded by reducing the deposit rate, thus maintaining a wider margin as they left the lending rate at a higher level. Postulating an error correction model and using monthly data for the study period, it was found that for Kenya, rising inflation resulting from expansionary fiscal policy, tightening of monetary policy, yet-to-be realized efficiency of banks and high intermediation costs explained interest rate spreads.

Conceptual Framework

This study was guided by the following model as presented in Figure 1

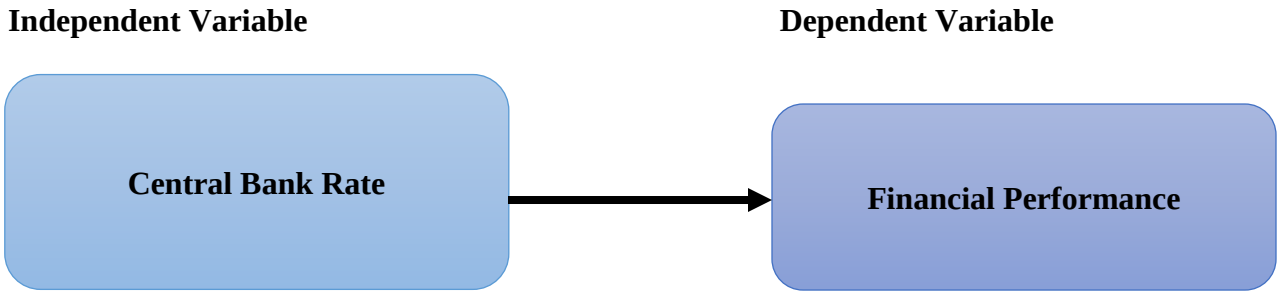

Figure1: Conceptual Framework

Research Methodology

Research Design

This was generally a descriptive study. The design involves planning, organizing, collecting and analyzing of the data to provide information and also solutions to the research problems. The study will use descriptive research design. Descriptive research describes the characteristics of the population with respect to important variables with the major emphasis being establishing the relationship between the variables Kothari (2004). Descriptive studies are more formalized and typically structured with clearly stated hypothesis or investigative questions. The study employed both qualitative and quantitative analytical methods to enable in-depth analysis of the problem.

Target Population of the Study

According to Mugenda and Mugenda (2003) a population refers to an entire group of individuals, objects or events having common observable characteristics while Cooper and Schindler (2000) described population as the entire group of individuals or objects to which researchers are interested in generalizing the conclusion. The target population of the study comprised of all the 43 licensed commercial banks in Kenya as at 31st Dec 2014.

Data Collection and Analysis

The study used secondary data. The data on the CBR was collected from the Central Bank's website, data on Financial Performance of the commercial banking sector was collected from CBK Banking and Economic Reports, on Inflation was collected from the National Bureau of Statistics (KNBS). After the data has been analyzed, the researcher used a cross examination to predict the trends and patterns of the ratio and model used to enable for accurate and complete interpretation.

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Analytical Model

To determine the patterns to be revealed from the data to be collected regarding the selected variables, data analysis was guided by the aims and objectives of the research and the measurement of the data collected. A linear regression model was used to test the significance of the influence of the independent variable on the dependent variable. The model is as shown below;

$Y= a+ß_1$

Where;

$X_1+ß_2X_2+ß_3X_3+ ß_3X_3+e$

Y = Financial performance (Profitability) of the Banks measured by ROA (Net Income/Total Assets)

X_1 =Central Bank Rate measured annually

X_2=Liquidity ratio (Net liquid assets divided by net deposits) to measure CBK liquidity risk

X_3=Interest rate, as a control variable (Average Interest Rates).

ß =Coefficient representing the various independent variables

e = error term which will be assumed to be normally distributed with mean zero and the constant variance

a = constant term

The results obtained from the model are presented in tables to aid in analysis and ease with which the conclusion was drawn.

Results and Findings

This section presents the data for the variables of the study. In particular, descriptive statistics of the variables are discussed below followed by the regression analysis of the variables.

Financial Performance

The financial performance of commercial banks was measured as the ratio of the aggregate profit before tax in every quarter of the study period (2005-2015) and the aggregate value of the total assets of commercial banks as at each quarter. Tabulated below are the descriptive statistics of the quarterly ROA.

Table 4.1: Descriptive Statistics, Quarterly Return on Assets.

	N	Minimum	Maximum	Mean	Std. Deviation
Quarterly Return on Assets	40	.00890	0.0217	0.0128	0.002706
Valid N (list wise)	40				

Source: Research Findings (2015)

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The study results showed that aggregate return on assets earned by Kenyan Commercial Banks in the quarters from 2005 to June 2015 stood at an average of 0.0128. The lowest ROA in the quarters studied was 0.0089 in the fourth quarter of 2010, whereas the highest was 0.0217 in the first and second quarter of 2012. The standard deviation of the ROA in all the 40 quarters in the period from the mean quarterly ROA was 0.002706, suggesting a relatively low level of variability in the Quarterly ROAs from the mean value.

Central Bank Rate

This was the key independent variable of the study. The monthly Central Bank rate was obtained from the annual reports issued by the Central Bank of Kenya for the last five years starting from the third quarter of 2005. The quarterly average rate was then computed for every three months in every quarter in a given year. The table below illustrates the descriptive statistics of the quarterly average Central Bank Rate.

Table 4.2: Descriptive Statistics, Quarterly Average Central Bank Rate

	N	Minimum	Maximum	Mean	Std. Deviation
Quarterly Central Bank Rate	40	4.87	17.00	8.364	2.702
Valid N (list-wise)	40				

Source: Research Findings (2015)

From the table, 4.2 there was a relatively high variation in the average Central Bank Rate from quarter to quarter among all the quarters studied, considering the wide range of the values observed. The minimum quarterly average Central Bank Rate was 4.87% in the fourth quarter of the year 2010, with the rate rising to as high as 17% in months (first and second quarter of 2012). The average CBK rate for the entire study period stood at 8.73425%, with a standard deviation of 2.702%. The CBR, being a policy instrument of the Central Bank may be expected to change as necessitated by economic circumstances. This could explain the wide variation observed between the minimum and maximum values observed over the entire study period. In addition, the Central Bank of Kenya is mandated by law to review the rate in at least every two months. This increases the variability of the rate within quarters of a given year.

Liquidity Risk

The financial performance of commercial banks is subject to influence by a variety of factors apart from the Central Bank Rate. In order to incorporate the multiple influences of other factors other than the Central Bank Rate, control variables were introduced. One of them was liquidity risk. It was measured as the ratio of aggregate liquid assets held by commercial banks in Kenya in each of the quarters covered in the study, and the total assets. The ratios obtained in respect of every quarter are as summarized in table 4.3.

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Table 4.3: Descriptive Statistics, Quarterly average Liquidity Risk

	N	Minimum	Maximum	Mean	Std. Deviation
Quarterly Liquidity Risk	40	.3000	.4200	.3416	.04270
Valid N (list-wise)	40				

Source: Research Findings (2015)

From the table 4.3, the minimum liquidity risk of the commercial banks in Kenya over all the quarters studied stood at 0.30 in the fourth quarter of the year 2011, going up to as high as 0.42 in the third quarter of the year 2010. The average ratio of the Commercial banks' liquid assets to their total assets stood at 0.3416, with the ratio in individual quarters exhibiting slight deviations from the average value. The standard deviation of the quarterly ratios of liquid assets to total assets was found to be 0.4270, suggesting that there were slight variations in the quarterly ratios from the mean.

Inflation Rate

As earlier noted, incorporation of control variables was necessitated by the need to capture the necessary determinants of financial performance other than CBK rate in a comprehensive perspective. Therefore, the other control variable used in the study was inflation rate, which exerts an impact on financial performance by affecting other variables such as the cost of capital and aggregate demand for goods and services. The monthly inflation rates for each quarter were averaged in order to obtain a quarterly average inflation rate (Appendix II). A summary of the data obtained is tabulated in table 4.4.

Table 4.4: Quarterly Average Inflation Rate

	N	Minimum	Maximum	Mean	Std. Deviation
Inflation Rate	40	2.45	19.18	7.504	4.327
Valid N (list-wise)	40				

Source: Research Findings (2015)

The quarterly inflation over the period under the study averaged to 7.504%, with a standard deviation of 4.327%. The quarter in which the inflation rate was highest registered an average inflation rate of 19.18% (fourth quarter of 2011), whereas the quarter with the lowest inflation rate was the fourth quarter of 2006 with inflation rate of 2.45%.

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Regression Analysis

Researcher conducted a multiple regression analysis so as to test relationship among variables (independent) on the financial performance (Profitability). The researcher applied the statistical\ package for social sciences (SPSS V 20.0) to code, enter and compute the measurements of the multiple regressions for the study. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Financial performance (Profitability)) that is explained by all the three independent variables (Central Bank Rate, Liquidity Risk and inflations measured by change in Consumer Price Index).

Model Summary

The three independent variables that were studied, explain only 84.5% of the financial performance (Profitability) as represented by the R^2. This therefore means that other factors not studied in this research contribute 15.5% of the financial performance (Profitability) of commercial banks. Therefore, further research should be conducted to investigate the other factors (15.5%) that affect financial performance (Profitability) of commercial banks in Kenya. The results are presented in table 4.5

Table 4.5:Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.419[a]	0.845	0.789	0.6273

a. Predictors: (Constant), Inflation Rate, Quarterly Central Bank Rate, Quarterly Liquidity Risk

Source: Research Findings (2015)

The coefficient of correlation among the quarterly Return on Assets, Quarterly central bank rate and the quarterly average liquidity risk as indicated by the average ratio of liquid assets to total assets suggest that these variables have a low correlation. From the table, the value of the coefficient is 0.419. The proportion of variation in the ROA of the commercial banks from quarter to quarter in the study period that is explained by the variation in the study independent variables is also low. The R Square is 0.845, suggesting that approximately 84.5% of the variation in the ROA across all the quarters studied most likely arose from changes in the study's independent variables. Further tests were performed in order to examine the significance of the regression model obtained. Tabulated below is the ANOVA summary obtained from the significance tests performed.

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ANOVA Results

The significance value is 0.0179 which is less than 0.05 thus the model is statistically significance in predicting how central bank rate, liquidity risk and inflation as measured by change in Consumer Price Index affect the financial performance of commercial banks in Kenya. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant. The results are presented in table 4.6.

Table 4.6: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.534	2	1.267	9.475	.0179[a]
	Residual	9.307	40	2.327		
	Total	**11.841**	**42**			

a. Predictors: (Constant), Quarterly Average Inflation Rate, Quarterly Central Bank Rate,

Quarterly Liquidity Risk

b. Dependent Variable: Quarterly Return on Assets

Source: Research Findings (2015)

Coefficient of Determination

Multiple regression analysis was conducted as to determine the relationship between financial performance (profitability) and the three predictor variables. As per the SPSS generated table 4.7, the equation

Using unstandardized coefficients, the predictive model was of the form
$Y = 1.147 + 0.752\ QLR + 0.487\ QR + 0.545\ IR + \varepsilon$
Where;
QLR = Quarterly Liquidity Risk
QR = Quarterly Central bank Rate
IR = Inflation Rate

The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in central bank rate will lead to a 0.752 increase in financial performance in commercial banks; a unit increase in liquidity risk will lead to a 0.487 increase in financial performance in commercial banks, a unit increase in inflation will lead to a 0.545 increase in financial performance in commercial banks. This infers that central bank rate contribute most to the financial performance in commercial banks followed by inflation. At 5% level of significance and 95% level of confidence, central bank rate had a 0.0192 level of significance, liquidity rate showed a 0.0269 level of significance and inflation showed a 0.0251 level of significance, teachers' classroom

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management showed a 0.0454 level of significance hence the most significant profitability factor is central bank rate. The results are presented in table 4.7.

Table 4.7 Coefficient of determination

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.147	1.2235		1.615	0.367
	Quarterly Liquidity Risk	0.752	0.1032	0.152	4.223	.0192
	Quarterly Central Bank Rate	0.487	0.3425	0.054	3.724	.0269
	Inflation Rate	0.545	0.2178	0.116	3.936	.0251

a. Dependent Variable: Quarterly Return on Assets

Source: Research Findings (2015)

Interpretation of the Findings

From the findings, the correlation among the quarterly return on assets of commercial banks in Kenya; the quarterly average Central Bank Rate; the quarterly average inflation rate and quarterly liquidity risk is positively weak, just as in the case for the coefficient of determination. This suggests that over the study period, these variables tended to move together with a low magnitude. A very low proportion of the variation in the Return on Assets from Quarter to Quarter is explained by the variation in the liquidity risk, average inflation rate per quarter and the average central bank rate in every quarter that was included in the study.

The test of significance of the regression model using the ANOVA technique shows that the regression model is was statistically significant. The significance value is 0.0179 which is less than 0.05 thus the model is statistically significance in predicting how central bank rate, liquidity risk and inflation as measured by change in Consumer Price Index affect the financial performance of commercial banks in Kenya. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant. This implies that the changes that were observed in quarterly financial performance as the changes in the average quarterly CBK rate, average quarterly inflation and the average quarterly liquidity risk occurred were most likely due to random variations, and not as a result of the interrelations of these variables. This could be attributed to the stringent regulatory framework that the Central Bank of Kenya has put in place in recent times to ensure that commercial banks are adequately shielded against adverse economic events.

The significance of the model is further affirmed by the results of the significance tests for the regression coefficients. This infers that central bank rate contribute most to the financial

performance in commercial banks followed by inflation. At 5% level of significance and 95% level of confidence, central bank rate had a 0.0192 level of significance, liquidity rate showed a 0.0269 level of significance and inflation showed a 0.0251 level of significance, teachers' classroom management showed a 0.0454 level of significance hence the most significant profitability factor is central bank rate.

Conclusion

From the findings, notable variations were observed in the values of all the study variables across the study period. Regression analysis revealed that there was a strong correlation between the quarterly return on assets of Kenyan commercial banks, the quarterly average central bank rate, the quarterly average liquidity risk and the quarterly average inflation rate. The study independent variables explained a very low proportion of variation in the dependent variable, financial performance. The regression model and the coefficients were also found to be significant at the 0.05 level. This infers that central bank rate contribute most to the financial performance in commercial banks followed by inflation. At 5% level of significance and 95% level of confidence, central bank rate had a 0.0192 level of significance, liquidity rate showed a 0.0269 level of significance and inflation showed a 0.0251 level of significance, teachers' classroom management showed a 0.0454 level of significance hence the most significant profitability factor is central bank rate.

This could imply that the central bank rate significantly affects the financial performance of commercial banks. The central bank rate is essentially a measure used by the monetary policy committee to protect the local financial market against external shocks. It may therefore be expected that it should be used with due diligence to ensure that it does not compromise the very objective for which it is deployed.

Recommendations for Policy

The study findings suggest that the Central Bank Rate does affect the financial performance of commercial banks. The study recommends that the monetary policy committee of the Central Bank of Kenya should sets the rate with a good level of effectiveness. The study recommends that the committee should therefore enhance the initiatives that are employed in order to set a good rate. This may include benchmarking against best practices globally, which may help in ensuring best standards. The existent measures also need continuous reviewing in order to ensure that emerging issues and challenges are addressed promptly. It will also be in the best interests of the local economy if the Central Bank of Kenya's monetary policy committee was afforded all the support it requires in order to execute its mandate. This could mean ensuring it is made as autonomous as possible, with the legal framework from which it derives its mandate being made friendly by, for example, availing a wide variety of options that the committee can pursue and not limiting the scope of the activities it can undertake as it seeks to set a favorable rate. Such initiatives will go a long way in helping it achieve its mandate.

Limitations of the Study

Due to non-availability of adequate data, the study used a limited period of 10 years, which yielded only 40 observations (Quarters). There could have been more insight were the study period extended for a longer period of, for example, 10 years. The data used was also largely aggregated, for the entire banking industry in Kenya. Considering the fact that the Central Bank Rate applies to all licensed commercial banks, the use of aggregated data became an ideal choice. It could

however not allow for an examination of how individual commercial banks attempt coping with the changes that are normally occasioned by changes in the Central Bank Rate.

References

Akahege, B. (2011). *The determinants of non-performing loans among commercial banks in* Kenya. (MBA Project). University of Nairobi, Nairobi.

Athanasoglou, P., Delis, M., & Staikouras, C. (2006). Determinants of bank profitability in the South Eastern European region.

Berger, A., Hanweck, G. & D. Humphrey (1987). Competitive viability in banking: Scale, scope and product mix economies. *Journal of Monetary Economics* 20, 501-520

Bernanke, B. & Blinder, B. (1992). The Federal Funds rate and the transmission of monetary policy. *American Economic Review*, 82: 901–921.

Caplan, B. (2000). Rational irrationality: a framework for the neoclassical-behavioral debate. *Eastern Economic Journal*, *26*(2), 191-211.

Cheng, K. C. (2007). A VAR analysis of Kenya's monetary policy transmission mechanism: how does the central bank's REPO rate affect the economy?.

Cooper, D. R., & Schindler, P. S. (2000). *Business research methods*. Saddle Brook.

Corb, H. (2012). *Interest Rate Swaps and Other Derivatives*. New York: Columbia Business School.

Crowley, J. (2007). Interest rate spreads in English-speaking African countries. IMF Working Paper No. 07/101, Available at SSRN: https://ssrn.com/abstract=984606

Dang, T. V., Gorton, G., & Holmström, B. (2011). Ignorance and the optimality of debt for liquidity provision. *Yale University, unpublished working paper*.

Davydenko, A. (2010). Determinants of bank profitability in Ukraine. *Undergraduate Economic Review*, *7*(1), 2.

Fu, X. M., & Heffernan, S. (2009). The effects of reform on China's bank structure and performance. *Journal of Banking & Finance*, *33*(1), 39-52.

Gaitho, E. W. (2010). *A survey on causes of non-performing loans in commercial banks in* Kenya. (MBA Project). University of Nairobi, Nairobi.

Graham, C., & Bordeleau, E. (2010). The impact of liquidity on bank profitability. *Retrieved on*, *16*(10), 2012.

Gutierrez, M., & Tribo´, J. (2004). Private benefits extraction in closely-held corporations: The case for multiple large shareholders. *ECGI Working paper Series,* 53, October

Howells, P. G., & Bain, K. (2008). *The economics of money, banking and finance: a European text*. Pearson Education.

Hualan, C. (1992). Fiscal policy and interest rates how sustainable is the" new economy. *Washington, DC: International Monetary Fund, IMF Institute*.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

Johnson, S., Boone, P., Breach, A., & Friedman, E. (2000). Corporate governance in the Asian financial crisis. *Journal of financial Economics*, 58(1-2), 141-186.

Kobayashi, T. (2018). Incomplete interest rate pass-through and optimal monetary policy. *Fourteenth issue (September 2008) of the International Journal of Central Banking*. 1,77-118.

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Mankiw, N. G., & Reis, R. (2003). What measure of inflation should a central bank target?. *Journal of the European Economic Association*, *1*(5), 1058-1086.

Min, P. (2006). Corporate Governance of Commercial Banks: A Theoretical Analysis Based on the Characters of Banking Industry [J]. *Journal of Financial Research*, *3*(006).

Moessner, R., & Nelson, W. R. (2008). Central bank policy rate guidance and financial market functioning.

Mugenda, O.M and Mugenda A.G. (2003). *Research Methods: Quantitative and Qualitative Approaches.* Nairobi, Kenya.: Acts press.

Ngugi, R. (2001). An empirical Analysis of Interest Rate Spread in Kenya. (Research paper 106).

Perry, P. (1992). Do banks gain or lose from inflation?. *Journal of Retail Banking*, *14*(2), 25-31.

Revell, J. (1979). *Inflation & Financial Institutions*. Financial Times Limited.

Rotheim, R. J. (1981). Keynes' monetary theory of value (1933). *Journal of Post Keynesian Economics*, *3*(4), 568-585.

Samad, A. (2004). Performance of Interest-free Islamic banks vis-à-vis Interest-based Conventional Banks of Bahrain. *International Journal of Economics, Management and Accounting*, *12*(2).

Shleifer, A., & Vishny, R. (1986). Large shareholders and corporate control. *Journal of Political Economy*, *94*, 461-488.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, *52*(2), 737-783.

Short, B. K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe, and Japan. *Journal of banking & Finance*, *3*(3), 209-219.

Staikouras, C. K., & Wood, G. E. (2004). The determinants of European bank profitability. *International Business & Economics Research Journal (IBER)*, *3*(6).

Stulz, R. (1988). Managerial control of voting rights: Financing policies and the market for corporate control. *Journal of financial Economics*, *20*, 25-54.

Tireito, J. K. (2012). *The relationship between interest rate and non-performing loans in* Commercial *Banks in Kenya*. (MBA Project). University of Nairobi, Nairobi.

Tregenna, F. (2009). Characterizing deindustrialization: An analysis of changes in manufacturing employment and output internationally. *Cambridge Journal of Economics*, *33*(3), 433-466.