

# MACROECONOMIC FACTORS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA

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**Abstract:** The banking industry is vital in respect to the financial allocation through its intermediation functions of funds transfer to deficit units from surplus units. To ensure the sustenance of these functions, good performance needs to be maintained which ultimately guarantee the survival of banks. This investigation aimed at ascertaining the influence of macroeconomic factors on financial performance of listed commercial banks at the NSE, Kenya. Research population comprised of the 11 listed banks at the NSE, Kenya. The findings of the study indicated that inflation has a positive and insignificant effect of inflation on financial performance of listed commercial banks at the NSE, Kenya. The study further found that exchange rate has a negative and significant effect on financial performance of listed commercial banks at the NSE, Kenya. Lastly, the regression output indicated a positive and insignificant effect of interest rate on financial performance of listed commercial banks at the NSE, Kenya. The study recommends that bank management should come up with policies or strategies regarding cross border transactions that will cushion the negative effect of exchange rate fluctuations on financial performance of listed commercial banks at the NSE, Kenya.

**Keywords:** Interest rates, Exchange rates, Inflation and Financial Performance.

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## 1. INTRODUCTION

Financial institutions globally are viewed to be key pillars enhancing countries growth. They bring various market participants together for business and investment purposes. As put forward by Ongore and Kusa (2013), commercial banks are regarded as the most vital financial which is due to the ability the posses of offering and providing a variety and rage of various services. They safeguard the money of depositors for when required and fueling of consumption and investment activities of borrowers.

In Kenya, the case is different as commercial banks have gone through various remarkable changes over time. These changes span from ownership structures of banks, number of banks, as well as various breadth and depth of operations which are geared towards positioning the banking sector as the financial hub of East Africa and Africa at large. External economic conditions are influential on the performance of banks. Cheruiyot (2012) opine that the factors determining or triggering banking crises which impact on banks' performance span from macroeconomic factors, institutional and financial factors. From the early 1980s, the systematic problems inherent in the financial sector have largely been macroeconomic factors.

Weak macroeconomic conditions usually result in a vulnerable banking crisis. High decreases in Gross Domestic Products increases the risk inherent in the financial sector, where commercial banks are susceptible to such risks. However, vulnerability to economic shocks does not always imply a sign of the banking sector being inefficient or inefficient, as the role of commercial banks as the financial intermediation role of banks is solely risk taking. High inflation rate in the economy also bring about increased risk in the financial sector (Were & Wambua, 2014). As such monetary policy is often tightened as a way of bringing about banking sector stability.

### **1.1 Statement of the Problem**

The continuous decline in Kenya's banking performance as documented in their ROE has been worrisome to policy makers and management of banks. The collapse of some banks which include the Capital Finance Ltd, Continental Bank of Kenya Ltd, Consolidated Bank of Kenya Ltd and Trust Bank of Kenya, chase bank and others served as a wakeup call to bank managers. All banking firms strive to improve on their performance as they strive to also have a large market share in the industry. This research aims at establishing the influence of vital economic elements of banking performance in the case of Kenya.

Few researches have been done on bank performance and external factors. Lack of a general consensus is however inherent in these studies. Ongore and Kusa (2013) in their study indicated that bank profits are insignificantly impacted by economic conditions. Though the regression outcome showed price level to impact banking performance, the direction was negative and at 5 percent non significant.

Previous studies were largely based on multiple regression analysis and were not based on listed commercial banks. This study sought to address these gaps by determining the effect of macroeconomic variables on Kenya's banking performance. This study furthermore was based on panel regression model and this study focused on listed commercial banks at the NSE, Kenya.

### **1.2 Specific Objectives**

The specific objectives of the study are:

- i) To determine the effect of inflation on financial performance of listed commercial in the NSE, Kenya.
- ii) To ascertain the influence of exchange rate on financial performance of listed commercial in the NSE, Kenya.
- iii) To investigate interest rate effect on financial performance of listed commercial in the NSE, Kenya.

## **2. THEORETICAL REVIEW**

Debt deflation theory was propounded by Fisher (1933). The theory brings financial intermediation to the center of attention as it explains the causes of economic depression. Fisher (1933) argues that economic expansion is triggered by net credit expansion while net contraction cause recession and as it persists depression. During periods of high GDP growth, income levels increase which improves debt servicing capacity by borrowers thereby resulting in timely repayment of loans which subsequently improves financial performance of banks. Also, during periods of high GDP, savings increase as a result of increase in business activities (Damena, 2011).

In addition, the rise in bank loans during the boom period is linked to investors being optimistic on the future returns of their investments. It leads to the demand for more higher by the customers/ investors in order to invest in new investments. On the other hand, as GDP growth declines, the demand for credit falls (Athanasoglu and Delis, 2006). This is because decline a decrease in economic growth decreases income levels which results to customers having difficulty in repaying their loan installments. Moreover, during the period of depression, loans reduce since banks are reluctant in lending and also the investors are over conscious and pessimistic in venturing into new investments (Ongore, 2013).

Trade off Theory is attributed to Myers in 1984. The theory postulates that interest rate on debt include a premium in order to compensate lenders for expected losses in case default materializes. This is because lenders are unwilling to lend money at an amount which would trigger off default. As a result of the unwillingness by lenders to lend out their money, there is a borrowing constraint on the firm. Generally, lenders ensure that there is an interest to be earned on any loan they give out. Trade off theory of debt holds in the case where constraint in borrowing is found not to be binding and the firm is faced with high probability of loan default (Frank and Goyal, 2003). In simple terms, optimal debt is ascertained by the equality existing between marginal tax shield and marginal cost of default which is commonly link to an additional debt. In this theory, the optimal amount of debt equates the marginal cost of a unit of debt arising from the tax deductibility of

payments of interest with the marginal cost of a unit of debt emanating from higher default exposure (Damena, 2011). This in turn means that leverage changes over time are linked to the variations in interest tax shield and that of marginal default cost. When the tradeoff theory holds, an upward trend in future expected or current profits decrease the optimal leverage (Atiyet, 2012).

Resource dependency theory was propounded by Pfeffer and Gerald (1970). The theory seeks to explain how external resources of organizations affect the behavior of the organization. The theory of Resource Dependency rests on the view that institutions are engaged in various transactions with various participants and institutions in its operation environment which are aimed towards acquiring resources, while improving and sustaining good performance.

In a situation whereby an individual is appointed by an institution into its board, there are various expectations which come along with that. The individual is expected to provide support for the institution and work toward the betterment of such institution. This in turn brings about increase institutional performance (Pfeffer and Salancik, 1978). Sometimes the institutions' board may offer advice and counsel and communication from the institution and external institutions and vice versa. The adequate provision of resources by the board is therefore directly linked to the financial performance of such institutions. This is linked to the notion that firm resource aid in reducing dependency between the institutions and their external contingencies while at the same time lowering costs incurred in transactions and ensures that institution survive or continue existing.

## **2.1 Empirical Review**

### **2.2 Inflation and Financial Performance**

A study was conducted by Kiganda (2014) focusing on external variables and bank profitability in the case of Kenya. Equity Bank Limited was the focus of the research. Rate of exchange, inflation and GDP were considered in the research. The investigation was done using annual data spanning from 2008 – 2012. Multiple regression technique was utilized in the research. Inflation was found to positively and insignificantly influence the performance of Equity Bank. The weakness of the research rests on the fact that only Equity bank was considered, it therefore becomes unrealistic for generalization for all listed banks in Kenya. In closing the stated gap, census approach was used by focusing on listed banks.

Otuori (2013) in another vein did a research to analyze the exchange rate influence on banking performance for Kenyan banks. While focusing on commercial banks, research output indicate rate of inflation to be negatively and strongly linked to profitability of Kenya commercial banks. Macharia (2013) similarly did an enquiry on rate of inflation and banking performance. Kenyan commercial banks offering mortgage finance was the interest of the study where the time period 2012 up to the year 2016 was used. Research results show inflation to inversely relate bank performance for banks offering mortgage finance. The ongoing study however, looked at listed banks other than a single bank or banks offering mortgage finance.

Ongore and Kusa (2013) conducted a study on the determinants of Kenya banking performance for the case of commercial banks with the use of a multiple linear regression model. Inflation had significant negative association with Kenyan banks ROA, NIM and ROE. The researchers concluded inconclusive the effect of external variables on banking performance for the duration 2001 to 2010. This study is looking at the listed banks on the NSE.

Sutian (2011) did an analysis on Korea commercial banks focusing on the time duration of 1992 to 2003. Regression analysis was used on the research data where output signified an inverse impact of inflation on banking performance as assessed by ROA. The enquiry was however on the context of Korean banks. The current investigation therefore closed the contextual gap as it looks as Kenya commercial banks; this is because the findings of such study cannot be extended to the Kenyan context.

An empirical analysis was undertaken by Buyinza (2010) which focused on commercial banks of countries in SSA Sub Sahara Africa. Twenty three banks were adopted as the research sample where 1999 to 2006 served as the study period. The study adopted panel data regression technique and the output reveal a significant direct impact of inflation on bank profitability. Buyinza however, studied SSA commercial banks which based on cross country approach. This study is different as it looked at a single country and at the end produced results specific to Kenya.

### **2.3 Exchange Rate and Financial Performance of Commercial Banks**

Also, an empirical analysis was conducted by Kiganda, (2014) which aimed at ascertaining macroeconomic influence on banking profitability with emphasis on Equity bank limited. Multiple regression/OLS technique was utilized based on 5% significance level and research findings indicate the rate of exchange to be a non significant predictor of bank profits. It is however key to note that the study only focused on just equity bank, as such, its generalization is therefore unrealistic. As against using multiple regression, this investigation utilized panel regression approach.

An analysis was undertaken by Macharia (2013) which attempted to ascertain the financial crisis impact on banking performance through the use of exchange rate. Kenyan commercial banks offering mortgage finance were the study focus. Multiple regression technique was use and results show rate of exchange to be inversely related to banking performance. Notably, the investigation was largely on banks offering mortgage services. in response to this gap, this investigation looked at all listed banks where ROE served as performance proxy.

Sutian (2011) did a research exchange rate effect on financial performance while focusing on 32 banks in the context of Korea. The research focused for the period 1992-2003. The research analysis was done using multiple regression technique and results reveal that exchange rate has a negative and significant effect on financial performance. However, the study was centered on commercial banks in Korea. This investigation centered on commercial banks in Kenya.

### **2.4 Interest Rate and Financial Performance**

In investigation was done by Macharia (2013) which was centered interest rate impact on bank performance in the context of Kenyan commercial banks. The focus of the research was on bank rendering mortgage finance services such as interest rate, exchange rate and price level. Regression analysis reveals an inverse relation of banking performance and interest rate. The research investigation was though on commercial banks rendering mortgage finance whereas this study looked at listed banks on the NSE.

Poudel (2012) examined the determinants of banks' financial performance in Nepal. Secondary data 31 banks for 11 years 2001 to 2011. Regression technique was utilized where assets retuynrs which was used to assess banking performance was found to significantly nut inversely relkated to interest rates in the context of Nepal. Unlike the previous study which was on Nepal, listed banks on the NSE were the focus of this research.

A research was conducted by Alper and Anbar (2011) external determinants of banking profits in the context of Turkey covering the duration 2002 - 2010. Banking profits were assessed through assets returns and equity returns which were are expressed as a function of external factors. The findings of the study show that rate of interest positively affects banking profits. This Implies that increasing rates of interest lead to increasing profits. However, Alper and Anbar (2011) focused on banks in Turkey. This research focused on Kenya listed banks.

Afriyie (2011) also carried out a research on interest rate impact on bank profitability. Brong Ahafo Region community banks in Ghana were the focus of the research. The sample was made of 10 banks covering the time scope of 5 years from 2006 to 2010. Panel regression technique was utilized and results indicated a strong inverse link of interest rate and rural banks' profitability. The research was centered on banks in Ghana. This study was based on banks in Kenya whereas listed banks in Kenya were the focus of this research.

## **3. METHODOLOGY**

### **3.1 Research Design**

The study adopted exploratory research design because the research is exploratory in nature which is recommended in the case where there exist no or few researches on the subject matter. In line with this position, exploratory research design becomes idle as the research aims at ascertain the influence of macroeconomic conditions on banking performance for listed banks in Kenya.

### **3.2 Target Population**

Population is viewed as various collections of elements of interest in an investigation (Cooper & Schindler, 2009). These elements are used to make conclusions in a study. 11 commercial banks listed at the Nairobi Securities Exchange, Kenya that have been in existence from 2012 to 2017 made up the research population. The 11 banks and their financial statements were the research unit of analysis and unit of observation respectively.

#### 4. DATA ANALYSIS AND PRESENTATION

##### 4.1 Correlation Analysis

Correlation analysis is performed in a study to ascertain the degree of association among research variables (Greene, 2012). The correlation matrix was used to establish the degree of association among the independent and dependent variables.

**Table 4.1: Correlation Matrix**

The correlation matrix is presented in Table 4.1 where the level of association between macroeconomic factors and financial performance is shown.

	ROE	Inflation	ExchangeRate	InterestRate
ROE	1.0000			
Inflation	0.0973 0.4795	1.0000		
ExchangeRate	-0.3697* 0.0055	-0.1292 0.3473	1.0000	
InterestRate	0.0505 0.7142	-0.9007* 0.0000	-0.2156 0.1140	1.0000

Source: Research Findings, 2019

The correlation matrix as indicated in Table 4.1 indicates a positive and insignificant relationship between inflation and return on equity (ROE) as indicated by a coefficient of correlation (r) of 0.0973 and a p-value of 0.4795. Exchange rate was revealed to have positive and significant association with ROE as indicated by r of -0.3697 and p-value of 0.0055. Additionally, interest rate and ROE had a coefficient of correlation (r) of 0.0505 and p-value of 0.7142 which implies a positive and weak association between the two variables.

##### 4.2 Test for Fixed and Random Effect

The test for random or fixed effect model is performed in a study based on panel regression analysis so as to identify the most appropriate model for the regression analysis. A hausman test was undertaken to establish the best model to be utilized in performing the panel regression analysis. The hausman test is based on a null hypothesis of the random effect model being the preferred model and the alternative hypothesis of the fixed effect model being the preferred model. The test is guided by a 5 (0.05) percent level of significance. Therefore, a p value lower than 0.05 implies that the null hypothesis is to be rejected meaning that the preferred model to be utilized is the fixed effect model. Conversely, a p value above 0.05 means that the random effect model is the best model and as such the null hypothesis is not rejected.

**Table 4.2: Hausman Test**

	Coefficients		(b-B) Difference	sqrt (diag (V <sub>b</sub> -V <sub>B</sub> )) S.E.
	(b) Random	(B) Fixed		
Inflation	.007181	.007181	-4.15e-16	1.91e-09
ExchangeRate	-.0027554	-.0027554	-8.24e-17	3.05e-10
InterestRate	.007408	.007408	-5.47e-16	2.36e-09

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

$$\begin{aligned} \text{chi2}(3) &= (b-B)' [(V_b - V_B)^{-1}] (b-B) \\ &= 0.00 \\ \text{Prob} > \text{chi2} &= 1.0000 \end{aligned}$$

Research Findings (2019)

The output of the hausman test as exhibited in Table 4.2, a p value of 1.0000 was found. In line with the decision rule for hausman test, the null hypothesis was not rejected since the p-value was more than 0.05, as such the random effect model was utilized in the study to perform the panel regression.

### 4.3 Inferential Analysis

Inferential analysis entails making or deduction of conclusions based on the research data (Wooldridge, 2012). In carrying out inferential analysis, the study relied on panel regression analysis. Considering the study is based on panel data, panel regression analysis became the most appropriate technique to be used.

**Table 4.3: Panel Regression**

Random-effects GLS regression	Number of obs	=	55
Group variable: banks	Number of groups	=	11
R-sq:	Obs per group:		
within = 0.0000	min =		5
between = 0.0000	avg =		5.0
overall = 0.1432	max =		5
	Wald chi2(3)	=	29.40
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
Inflation	.007181	.0066531	1.08	0.280	-.0058589 .0202209
ExchangeRate	-.0027554	.0010661	-2.58	0.010	-.0048449 -.0006659
InterestRate	.007408	.0081083	0.91	0.361	-.008484 .0233
_cons	.3161726	.2045625	1.55	0.122	-.0847626 .7171078
sigma_u	.05603754				
sigma_e	.03546109				
rho	.71405726	(fraction of variance due to u_i)			

Source: Research Findings, 2019

Table 4.3 presents the panel regression model shows that inflation, exchange rate and interest rate are key in explaining the ROE of listed commercial banks in Kenya. The research findings that the overall model is significant as supported by a p-value of 0.0000. A unit increase in inflation brings about a corresponding increase of 0.007 in the financial performance of commercial banks as indicated in the ROE with a p-value of 0.280 which is insignificant. With regards to exchange rate, the findings from the regression analysis indicated that a unit increase in the rate of exchange between the Ksh and USD leads to a 0.002 decline in the ROE of listed commercial banks which is significant based on the 0.05 level of significance. In the case of interest rate, a unit increment brings about a corresponding 0.007 increase in the financial performance of commercial banks listed on the NSE, Kenya as measured by ROE.

### 4.4 Hypotheses Testing

The first null hypothesis of the research states that inflation has no significant effect on financial performance of listed commercial banks at the NSE, Kenya. With regards to the null hypothesis, the specific objective was to assess the effect of inflation on financial performance of listed commercial banks at the NSE, Kenya. The findings from the panel regression analysis revealed that inflation has a positive and insignificant effect on financial performance of listed commercial banks at the NSE, Kenya. As such, based on the threshold of 0.05 (5%) significance level, the null hypothesis which states that inflation has no significant effect on financial performance of listed commercial banks at the NSE, Kenya was not rejected. The findings of this research on the effect of inflation on financial performance of commercial banks is in agreement with that of Kiganda (2014) who did a research on external variables and bank profitability in the case of Kenya. Equity Bank Limited was the focus of the research. The investigation was done using annual data spanning from 2008 – 20112. Multiple regression technique was utilized in the research. Inflation was found to positively and insignificantly influence the performance of Equity Bank.

The second null hypothesis of the study was that exchange rate has no significant effect on financial performance of listed commercial banks at the NSE, Kenya. As such, the specific objective was to examine the effect of exchange rate on financial performance of listed commercial banks at the NSE, Kenya. The output from regression analysis provided evidence of a negative and significant effect of exchange rate on financial performance of listed commercial banks at the NSE, Kenya. The null hypothesis that exchange rate has no significant effect on financial performance of listed commercial banks at the NSE, Kenya was therefore rejected.

The findings of from the panel regression analysis on exchange rate and its effect on financial performance of commercial banks concurs with that of Sutan (2011) in the context of Korean banks studied exchange rate effect on financial performance. The negative and significant effect of exchange rate on financial performance of commercial banks can be linked to the fact that banks carry out inter border transactions, and some listed on the stock exchange of other countries

The third null hypothesis stated that interest rate has no significant effect on financial performance of listed commercial banks at the NSE, Kenya. The panel regression output indicated that interest rate has a positive and insignificant effect on financial performance of listed commercial banks at the NSE, Kenya. In line with this, the null hypothesis was therefore rejected at the threshold of 0.05 level of significance.

In agreement with the findings of this study on interest rate and financial performance of banks is the study by Alper and Anbar (2011) on external determinants of banking profits in the context of Turkey. The positive effect on interest rate on financial performance of commercial banks can be linked to the notion that the revenue and profitability of banks are largely sourced from their lending activities and as such increases in the rate of interests translate into positive effect on their financial performance.

## **5. CONCLUSION AND RECOMMENDATION**

The study concluded that the macroeconomic environment is key in predicting the financial performance of listed commercial banks at the NSE, Kenya. The study therefore concluded that inflation is positively and insignificantly linked to financial performance of commercial banks listed at the NSE, Kenya which though increases in price levels increases the return on equity of commercial banks, and its effect is minimal.

The study concluded that exchange rate is negatively and significantly linked to the financial performance of listed commercial banks at the NSE, Kenya. The impact on of this is that, depreciation in the local currency is detrimental to commercial banks financial performance. The study found exchange rate to significantly predict the financial performance of listed commercial banks at the NSE, Kenya. The study therefore recommends that bank management should come up with policies or strategies regarding cross border transactions that will cushion the negative effect of exchange rate fluctuations on financial performance of listed commercial banks at the NSE, Kenya. Lastly, the study concluded that the rate of interest is directly linked to the financial performance of listed commercial banks at the NSE, Kenya. The impact of interest rate is reported to be insignificant on financial performance of listed commercial banks at the NSE, Kenya.

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