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Monetary Policy and Financial Performance of Commercial Banks in Kenya

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Abstract:
This study has been done to address the research gaps in the effect of monetary policy of commercial bank's financial performance. The key objectives of the study were to establish the following; the effect of changes in central bank rate on financial performance of commercial banks in Kenya, the effect of reserve ratio requirement on financial performance of commercial banks in Kenya and, the effect of repo rate on financial performance of commercial banks in Kenya. The study was carried out covering a five-year time frame period from 2016 to 2020. The independent variables of the study involved: cash reserve ratio, Central bank rate, and the repo rate. Return on equity was used as the dependent variable. The study used descriptive longitudinal research design. The total population consisted of all the commercial banks, which is forty-two in number, licensed to operate in Kenya by the Central Bank of Kenya. The study employed various research tests; Durbin-Watson, quantile-quantile plot and normality test were applied in research finding analysis.
The study found out that a negative relationship exists between both Central Bank rate and cash reserve ratio requirement and return on equity (financial performance) of commercial banks in Kenya. The research findings also showed that a positive relationship exists between repo rate and the return on equity (financial performance) of commercial banks in Kenya. In Conclusion, the study concluded that monetary policy affects profitability and financial performance of commercial banks in Kenya. The study recommends that, for central bank to stimulate economic growth, central Bank rate needed to be monitored and maintained low.

Keywords: Monetary policy, Contractionary Monetary Policy, expansionary monetary policy, inflation, open market operations & repo rate

1. Introduction

The financial performance of every listed firm in a country is very vital for economic growth in a country. For firms to thrive in a country, they require sound economic policies to be in place, especially monetary policies and fiscal policies. The main puzzle of every government is to encourage growth of firms through sound monetary policies. It is generally assumed that government monetary policies affect macro-economic variables such as price stability, employment level/creation, equilibrium in the balance of payment and gross domestic product growth of any developing country (Anowor & Okorie, 2016). The government in place in any country uses monetary policies as a technique to spur economic activities as well economic growth.

According to Ajayi (2014), monetary policy involves all the government regulations that are put in place to regulate interest rates and money supply through the central bank of a country, with an aim to stabilize the country's currency as well as control inflation. Monetary policy is a major economic stabilization weapon in any country which involves the regulation of volume of money in circulation. For any government to control the amount of money in circulation, the government must come up with policies that control access to credit by both households and firms.

Economic growth in a country is unachievable without sound monetary policies. Economic growth refers to the sustained increase in the output of goods, services and employment opportunities in a country. Economic growth is the very key in ensuring that there is improved economic and financial welfare of citizens in a country. Lack of sound monetary policies in a country is likely to lead to economic problems like inflation, price instability, unemployment, exchange rate fluctuations, poverty, and recession among others.

The main puzzle of every Central Bank is how to ensure that the monetary policies put in place can achieve their desired aim as well as how to balance on different monetary policy components and achieve economic growth. If a central bank applies ineffective monetary policy, it can lead recession among other economic problems. The existing monetary policies can either discourage or encourage business growth. For instance, when the interest rates are too high, fewer people access credit which means fewer businesses will be put in place, hence low production of goods and services as well as low job opportunities. Although various studies have been done on monetary policies and financial performance, very few studies have focused in Kenya. The existing studies have majorly focused on effect of monetary policies and financial performance of banks, hence leaving out other non-banking firms. This study intends to focus on all firms listed in the NSE so as to close this research gap.

2. Literature Review

2.1. Empirical Literature Review

Akinlo and Owoyemi (2012) investigated the determinants of interest rate spread in Nigeria by using a sample of 12 commercial banks from the year 1986 to 2007. The research study utilized panel data procedures as it was looking at sample data across the banking sector for a period of time. The results gathered from the research study indicated that monetary policy actions taken by the Central Bank to reduce the statutory reserve requirement helped in reducing the interest rate spread while policy measures in remuneration reduction and other costs leading to a reduction in the loan to total assets ratio would help in reducing the interest rate spread in Nigeria.

On the other hand, Ngugi (2001) conducted an empirical analysis on the monetary policy regime in Kenya specifically looking at the interest rate spread in Kenya in four phases; with phase 1 covering the period before 1974 when interest rates remained unchanged with phase 2 between 1974 and 1979, whereby interest rates were revised upwards. Phase 3 of the study was from 1980 to 1990, while phase 4 was from 1991 to 1999, which marked a significant era in Kenya as interest rates were liberalized. The research study modelled interest rates based on the accounting value of net interest margin and the firm maximization behaviour. Findings from the study showed that interest rate spread increased because of inefficiencies and high intermediation costs. Furthermore, variations in the spread reflected fiscal and monetary actions.

Nissim and Penman (2001) investigated the effects of monetary policy variable, interest rates on return on assets and equity. The empirical analysis covered firms listed in the New York Stock Exchange for a period of 36 years from 1964 to 1999. The econometric results from the study showed that changes in interest rates are positively related to unexpected growth in book values and as such residual earnings and interest rate variations are negatively correlated. Chakraborty (2012) examined interest rate determination in India from the year 2006 to 2011. The study employed multivariate vector autoregressive model and unit root testing in a bid to establish relationship between increase in fiscal deficit and rise in interest rates. The econometric results from the study revealed that in India, fiscal deficit has no effect on both long-term and short-term interest rates.

Ngumi (2013) examined the effect of bank innovations on financial performance of commercial banks in Kenya. The study used descriptive survey research design and sampled 20 banks from a population of 44 commercial banks. The research findings showed that combined effect of bank innovations influenced bank performance positively. In addition, Caporale and Gil-Alana (2010) investigated interest rate dynamics in Kenya, commercial banks' rates and the 91-day Treasury bill rate. The research study employed models based on long range dependence. The econometric results from the findings indicated that macro-economic policies would be needed to achieve mean reversion of interest rates.

Davoodi, Dixit and Pinter (2013) conducted an empirical study on the monetary policy transmission mechanism in East Africa. The study employed a multivariate time series and Bayesian vector auto regression methodology across the five East African countries. The study looked at monetary policy goals, instruments and targets set by the respective 'Central Banks' of the East African states. The empirical findings revealed that the effects of monetary policy in some EAC countries did not last beyond three months and that expansionary monetary policy increased output in economic returns.

2.2. Theoretical Literature Review

2.2.1. Quantity Theory of Money

According to Jain and Khanna (2006), this theory was propounded by economist Bodin (1566) and reviewed further by Ivan Fisher and Marshall. The theory states that the quantity of money supplied has a direct proportional relationship with the price level and the existence of an inverse relationship between quantity of money and value of money. Humphrey (1974) argued that this theory is a hypothesis about the main cause of changes in money supply in that the value of money is determined by circulation such that the stock of money (M) is the main determinant of price level. According to Fisher (1998), money supply in the economy is influenced by interest rates in the short run and he further proposed the following model:

$M.V=P.Q$

- Where: M - the total amount of money, V - Velocity of money, P - Price level, Q - real value of final expenditures.

2.2.2. Theory of Monetary Neutrality

According to the theory of monetary neutrality, money is said to be neutral when changes in money supply in the economy have no effect on real quantities real output, employment, real expenditures, interest rate, and other real economic measures and prices. According to Barro (1997), when the stock of money doubles, the price level doubles as well as the nominal value of production followed with that of consumption. As such $P.Y=P.C$ as no changes occur in the real variables which are output (Y) and consumption (C). Since interest rates are taken to be real variables, they don't change.

2.2.3. Liquidity Preference Theory

According to Hicks (1939; as cited in Puhle, 2008), in this theory, long-term interest rates not only reflect investor assumptions about future interest rates but also include a premium for holding long term bonds, called liquidity premium. It was observed that liquidity premium compensates investors for the risk of having their funds tied up for a long period of time with the possibility of price fluctuations. As a result of this, long-term bond yields are higher compared to short-term. In addition, the risk premium causes long-term yields to be higher due to risk of default of holding a security for a long time.

2.2.4. Preferred Habitat Theory

The preferred habitat theory asserts that in addition to interest rate expectations, investors have distinct investment horizons and require a meaningful premium to buy bonds with maturities outside their preferred habitat (Modigliani, 1966; as cited in Puhle, 2008). Proponents of this theory believe that short term investors are more prevalent in the fixed income market and thus long-term rates tend to be higher than the short term rates.

3. Research Methodology and Model Specification

This study adopted a descriptive longitudinal design. For the purposes of this study, the total population comprised 42 commercial banks licensed by the Central bank of Kenya. Banks put under statutory management and receivership was not considered for the study. The research study focused on a five-year frame period spanning from the year 2016 to the year 2020. The study relied on secondary data collected using a secondary data sheet as the research instrument. Data was collected from the Central Bank of Kenya publications, accredited institutional reports, Kenya National Bureau of Statistics and annual published financial statements of commercial banks from the year 2016 to 2020.

The following model was developed for the purposes of this study:

$Y_{it} = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + e$

Where;

Y_{it} = Financial performance (ROE)
β = Constant
X_1 = Changes in central bank rate
X_2 = Changes in cash reserve ratio requirement
X_3 = Changes in repo rate
e = error term

The above statistical tests were conducted through the use of SPSS Statistical software.

4. Presentation and Discussion of Results

4.1. Descriptive Statistics

Descriptive statistics for ROA, CBR, and Cash reserve and repo rate are presented in Table 1.

	N	Minimum	Maximum	Mean	Std. Deviation
ROE	20	.07	3.76	.3668	.80418
CBR	20	5.83	18.00	9.1250	3.63176
CASHRESERVE	20	.11	168.43	11.6863	37.70543
REPO RATE	20	.08	10.61	4.4288	3.82666

Table 1: Descriptive Statistics

According to the findings in Table 1, from the population of commercial banks considered, the minimum value of return on equity in the banking industry across the 5 year period was 0.07, while on the other hand, the maximum return on equity was 0.376. The mean return on equity from the findings was 0.3668 and results varied with a standard deviation of 0.80418. Over the period, the CBR had a maximum of 18 and minimum value of 5.83 over the four quarters when the monetary policy committee met. The CBR findings over the period had a mean of 9.1250 in all the four quarters covered and a standard deviation of 3.63176 in the data analysed. The other parameter being tested was the cash reserve ratio requirement whereby the Central Bank's lowest and minimum figure in this study was 0.11 and the maximum recorded was 168.43. The cash reserve ratio requirement over the 5 year period in the four quarters recorded a mean of 11.6863 with a standard deviation of 37.705. The repo rate, which is the rate at which the government lends to commercial banks, had a maximum value of 10.6, while the minimum value was 0.08 across the five years. The analysed findings on Repo rate yielded a mean of 4.4288 and had a standard deviation value of 3.8266.

4.2. Correlations

Correlation analysis was conducted so as to establish the association between the dependent and the independent variables. Results are presented in Table 2.

		ROE	CBR	Cash Reserve	Repo
ROE	Pearson Correlation	1			
	Sig. (2-tailed)				
CBR	Pearson Correlation	-.184	1		
	Sig. (2-tailed)	.438			
Cash Reserve	Pearson Correlation	-.384	.032	1	
	Sig. (2-tailed)	.095	.894		
Repo	Pearson Correlation	.155	-.034	-.355	1
	Sig. (2-tailed)	.515	.888	.125	

Table 2: Correlation Matrix

According to the analysis of findings obtained from Table 2, negative correlation co-efficient was observed between return on equity and the central bank rate. The correlation co-efficient of -0.184 observed suggested an inverse relationship between the two variables, return on equity and the central bank rate when tested in that when one of the variables i.e. Central Bank rate was increased during the five year period, and then the return on equity decreased or declined. The correlation co-efficient of -0.184 suggested a weak downhill negative linear relationship between the two variables.

The study findings revealed that return on equity and cash reserve ratio shared an inverse relationship as shown in the table with the negative correlation co-efficient of -0.384 as shown in Table 2. These results suggested that as the central bank adjusted the cash reserve ratio required to be maintained by the commercial banks, the return on equity declined over the period. The correlation co-efficient of -0.3.84 suggested a weak negative linear relationship between the two variables and as such while the Central Bank may have adjusted the cash reserve ratio, the impact on return on equity wasn't very much.

The correlation results in Table 2 showed that there was a positive correlation between return on equity and the repo rate. The observed correlation coefficient figure of 0.155 suggested positive linear relationship albeit not perfect. These findings suggest that both variables (return on equity and the repo rate) moved in the same direction in that when the independent one was increased, the dependent one also increased and vice versa. This can be attributed to the fact that as the Central bank increased the repo rate, commercial banks adjusted their lending rates to cover their borrowing costs thereby benefitting from a large interest rate spread.

4.3. Regression Analysis

The study investigated the statistical relationship between the independent variables and dependent variables to establish the effect of changes in monetary policy on financial performance of commercial banks. The model incorporated all independent variables in the study i.e. Central Bank rate, cash reserve ratio, Repo rate and regressed them against financial performance. The model was observed to fit the data well when the differences between observed values and predicted values were small.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.521	.271	.253	8.80341	2.349

Table 3: Model Summary
Predictors: Repo, CBR, Cash Reserve

R square, also known as coefficient of determination, was applied as a statistical measure to determine how close the data fitted in the regression line and also measured the strength of association between the variables. According to Table 3, R was 0.521 and the coefficient of determination was 0.271. The findings suggested 27.1% of the variation in the response variable, financial performance and could be explained in a linear relationship with the predictors - repo rate, Central Bank rate and cash reserve ratio. This indicated a weak association between the predictors - Central Bank rate, cash reserve ratio and repo rate. This indicated that the predictors (Central Bank rate, cash reserve ratio and repo rate) were responsible for 27.1% of financial performance of commercial banks and the other percentage contributing to financial performance was as a result of other factors such as competition and internal management. The findings from the study also suggested some form of variation and spread in the data around the regression line.

The test statistic Durbin-Watson of 2.349 revealed that there was no auto-correlation in the residuals as the test statistic recorded was between 2.0 and 2.5 and for auto-correlation, it would have needed to be below 2.0. The standard error of estimate was observed to be 8.80341.

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4.908	3	1.636	2.524	.426[b]
	Residual	10.379	16	0.648		
	Total	12.287	19			
a. Dependent Variable: ROE						
b. Predictors: (Constant), REPO, CBR, CASHRESERVE						

Table 4
a.   Dependent Variable: Return on Equity
b.   Predictors: Repo rate, CBR, Cash reserve ratio

Analysis of Variance was done to determine whether there were any significant differences between the means. According to Table 4, the significance of the ANOVA analysis carried out was 0.426, which is greater than alpha (0.05). The results were not statistically significant and as such the null hypothesis should not be rejected. The F statistic measure, that compared differences between the means of the group and variability within value observed from the analysis, to be at 2.524.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.496	1.706		2.049	.057
CBR	-.421	.557	-.172	-.756	.461
Cash Reserve	-.686	.447	-.372	-1.535	.144
Repo	.101	1.476	.017	.068	.946

Table 5: Coefficients
a.   Dependent Variable: ROE
b.   Predictors: REPO, CBR, Cash Reserve

4.4. Summary of Findings

The findings in Table 5 gave a summary of the results of the regression function. $Y_{it} = \beta_0 - 0.172\,X_{1t} - 0.372\,X_{2t} + 0.017X_{3t}$ According to the findings in table 5, the expected value, when the independent variables are zero, was 3.496. The financial performance of commercial banks was hinged at that rate when no changes were made to the Central Bank rate, Cash reserve ratio and Repo rate during the period. The financial performance of the commercial banks was observed to have declined when the Central Bank rate was revised upwards and the other variables cash reserve ratio and repo rate remained unchanged during the 5 year period under study as indicated by the negative value of -0.421.

Upward changes in the central bank rate had a negative effect on return on equity of the commercial banks. The findings in table 5 revealed that when the cash reserve ratio was increased, the return on equity reduced provided that no changes were made to the Central Bank rate and the repo rate.

The cash reserve ratio was found to have influence on the financial performance of commercial banks. This was attributed to the negative relationship between the two variables which recorded a coefficient value of -0.686. The results from the study revealed that there was a positive association between changes in the Repo rate and financial performance of commercial banks.

The findings of 0.101 suggested that the two variables (repo rate and return on equity) moved in the same direction provided that the CBR and cash reserve ratio remained unchanged in that when the Repo rate was revised upwards, the return on equity of commercial banks increased and when the repo rate was revised downwards, the return on equity of the commercial banks declined.

From the descriptive analysis, the minimum value of return on equity was 0.07, whereas the maximum figure recorded was 3.76. On the other hand, the Central Bank Rate had a minimum of 5.83 with a maximum of 18. Cash reserve ratio requirements had a minimum of 10.88 and a maximum of 26.80. The repo rates recorded a minimum of 3.44 and a maximum of 10.61 over the 5 year study period.

5. Conclusions

The study concluded that banks' profitability is affected by change in monetary policies. More precisely, the study established that changes in central bank rate negatively affect commercial banks' financial performance. In addition, a negative relationship was also observed between cash reserve ratio requirement and commercial banks' financial performance. However, a positive relationship was showed to exist between the repo rate and the financial performance of commercial banks. In the correlation analysis, the study established that ROE and CBR had a negative correlation; cash reserve ratio and ROE also had a negative correlation, whereas the repo rate was observed to have a positive correlation with banks' financial performance as assessed by the returns on equity.

6. Recommendations

The study made the following recommendations to policy makers, academicians, people in banking and finance practice and future researchers, at large, to carry out further research to examine the causative factors of financial performance that have more considerable weight.

The study recommended that the CBK needed to lower the Central Bank Rate so that commercial banks' lending rates can come down. The government in particular needs to minimize fluctuations in CBR so as to enhance a more stable borrowing rate by banks. The Central Bank also needed to ensure that all banks complied with the cash reserve requirements so as to safeguard customer deposits and spearhead growth in the banking industry in terms of customer numbers that in turn would lead to more profitability and growth.

The study recommended that the CBK needed to determine repo rates at favourable rates as it in turn influences banks' lending rates. This would serve to ensure that banks can meet current liabilities as well as provide loans to the public at affordable rates. The study recommended that the CBK needed to set the cash requirements at considerable levels so as to ensure that banks had sufficient liquidity, which would, in turn, enable them offer loans at affordable rates leading to more subscriptions that would lead to more profit generated form loans and advances. The study concluded that banks' profitability was affected by changes in monetary policies, repo rates, CBR rates and the cash reserve requirements.

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