MONETARY POLICY TOOLS AND BANKING SECTOR EFFECIENCY IN KENYA

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ABSTRACT

KEYWORDS:

Monetary policy; banking sector efficiency; Kenya, Central Bank Rate

Analysis of bank interest rate spreads is central to the understanding of the banking system efficiency and the macroeconomic environment in which banks operate. Interest rate spreads in Kenya has remained above 8.5% and has been rising over years from 2014, this is indicative of deteriorating banking system efficiency in Kenya over years which may be attributed to lack of knowledge on the effective monetary policy tools for remedying the problem. This study therefore investigated the effect of monetary policy on banking sector efficiency in Kenya. Specific objectives were to establish the effect of Central Bank Rate (CBR) and open market operations (OMO) on banking sector efficiency in Kenya and establishing the most effective monetary policy tool for influencing banking sector efficiency in Kenya. A cointegration analysis based on Fully Modified Least Squares (FMOLS) was employed using monthly time series data obtained from Central bank of Kenya (CBK) spanning three years from January 2013 to December 2015. The results indicated that an increase in CBR decreases banking sector efficiency while an increase in repo rate increases banking sector efficiency in Kenya. It was also noted that, CBR was the most effective monetary policy tool for controlling banking sector efficiency in Kenya. The study therefore, recommended that CBK to adopt CBR as the most appropriate tool for influencing banking sector efficiency.

1.0 INTRODUCTION

Banking sector efficiency as measured by the difference between lending and deposit rates (interest rate spread), is a key pillar in any economy, bearing in mind its basic function to reallocate funds from agents with a surplus to those with a deficit (Georgievska et al., 2010). Numerous authors suggest a critical link between the efficiency of banking system and economic growth where a more efficient banking system benefits the real economy by allowing higher expected returns for savers with a financial surplus, and lower borrowing costs for investing in new projects that need external finance (Folawewo & Tennant, 2008). High interest rate spread an indication of banking system inefficiency according to Kiptui (2014) has far reaching effects on the growth of an economy as it works against the development of financial intermediation by discouraging savers.

Liberalization of the financial sector was expected to bring an improvement in banking sector efficiency by reducing interest rate spread. However, as explained by Were and Wambua (2013);Folawewo and Tennant (2008) it has been noted that, interest rate spreads have remained to be higher in African countries than in OECD countries. This creates a stambling block to effective mobilization of savings and provision of credit. Although these implications have spurred numerous debates in developing countries about the determinants of banking sector efficiency with emphasis on the internal and external bank factors, studies conducted in Kenya by Kiptui (2014) and Njeri et al.(2015) indicate that exchange rate, inflation rate, Gross Domestic Product (GDP), money supply, interbank rate, Treasury bill rate and bank specific factors as the main determinants of banking sector efficiency. This ignores key monetary factors such as the central bank rate and repo rate a proxy to open market operations making their effect on banking sector efficiency in Kenya unknown. Hence, the need for a study to bridge the knowledge gap on the effect of open market operations and central bank rate on banking sector efficiency.

1.1.1 Banking Sector Efficiency (Interest Rate Spread) in Kenya

A major indicator of banking sector efficiency is interest rate spreads, which have been found to be higher in African, Latin American and the Caribbean countries than in OECD countries (Were & Wambua,2013; Folawewo & Tennant, 2008). An analysis of bank interest rate spread is therefore central to the understanding of the banking system efficiency and the macroeconomic environment in which banks operate (Were & Wambua, 2013). F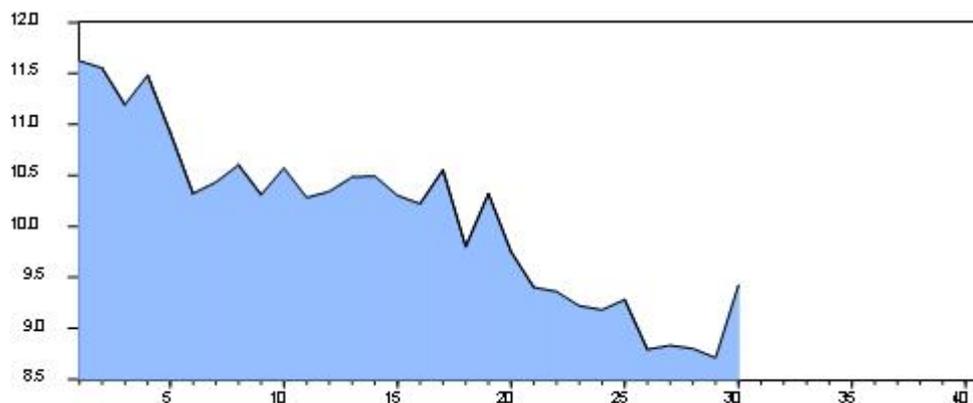igure 1 shows that interest rate spreads in Kenya has remained above 8.5% and has been rising from the 30th month i.e. in 2014, this is indicative of deteriorating banking system efficiency in Kenya over years. This trend of rising interest rate spreads over years in Kenya remains a concern to policy makers raising the need to analyze the effect of monetary policy on banking system efficiency in Kenya which may be attributed to lack of knowledge on the effective monetary policy tools for remedying the problem.

Figure 1. Trend of Interest Spread in Kenya (January 2013- May 2016)

1.2 Statement of the Problem

Rising interest rate spread a proxy to banking sector efficiency has been and remains a concern for policy makers in Kenya. This prompted the Kenyan law makers to enact a law in 2017 that sets the ceiling for interest rates charged by banks in Kenya. Besides, the efforts by Kenyan law makers to set ceilings for interest rates by empowering the Central Bank to have a grip on curtailing interest rates through the formulation and implementation of monetary policy, the effect of monetary policy on banking sector efficiency remains an empirical question given that studies on the determinants of banking sector efficiency such as Niyimbanira et al. (2015); Churchill et al. (2014); Kiptui (2014) ; Banda (2010) among others remain inconclusive given that they failed to analyze how CBR and open market operations influence banking sector efficiency. This makes the effect of CBR and open market operations on banking sector efficiency and their effectiveness uncertain thus the need to fill the knowledge gap of uncertainty by analyzing the effect of monetary policy on banking sector efficiency in Kenya.

1.3 Objectives

The main objective of the study was to investigate the effect of monetary policy on banking sector efficiency in Kenya

1.3.1 Specific Objectives

i. Establish effect of CBR and open market operations on banking sector efficiency in Kenya
ii. Establish the most effective monetary policy tool for influencing banking sector efficiency in Kenya?

1.4 Research Questions

i. What is the effect of CBR and OMO on banking sector efficiency in Kenya?
ii. Which is the most effective monetary policy tool for influencing banking sector efficiency in Kenya?

1.5 Significance

The study intended to establish the key monetary policy determinants of banking sector efficiency in Kenya. This was expected to provide knowledge to policy makers that will be useful in the formulation of monetary policies based on the most effective instrument that will curtail high spreads with the sole aim of encouraging savings mobilization and provision of affordable credit.

2.0 LITERATURE REVIEW
2.1 Theoretical Literature

The study was built on the liquidity preference theory advanced by John Maynard Keynes that money is demanded due to three motives which Mittal (2008) outlined as transactionary, speculative and precautionary motives. Based on the speculative motive, money demand is a function of interest rate as indicated by Mittal (2008) where there exists an inverse relationship between the two such that;

$$L = -hr \qquad (1)$$

Where L – money demand, h- constant and r- interest rate

Based on the argument of money market equilibrium, money demand (L) equals to money supply (Ms) ($L = Ms$). Therefore, at equilibrium money supply also becomes a function of the interest rates such that;

$$Ms = -hr \qquad (2)$$

Making interest rate (r) the subject

$$r = \frac{-1}{h}(Ms) \qquad (3)$$

From model (3), it is clear that interest rate is a function of quantity of money circulating in the economy (Ms), the study therefore notes that changes in monetary policy aimed at controlling money supply affects interest rates in the economy. Thus, interest rates is determined by changes in monetary policy which is implemented by use of various

tools such as open market operations (OMO) and central bank rate (CBR) among others. Therefore, interest rate is a function of the monetary policy tools such that;

$$r = f(OMO, CBR, \vee) \qquad (4)$$

Where r-interest rate, OMO- open market operations, CBR-central bank rate, ∨ - error term

2.2 Empirical Literature

Njeri et al. (2015) investigated the determinants of interest rate spreads in commercial banks of Kenya based on quantitative data analysis that quantified the impact of those factors on interest rate spreads by collecting data from commercial banks in Kenya, CBK, financial journals and newspapers. The target population was 1036 credit officers. The sample size was 103. Stratified random sampling was used. Results indicated that all the variables of the study: Inflation rate, return on average assets, liquidity risk and credit risk influenced interest rates spreads of commercial banks in Kenya. This was evidenced by the responses from respondents in regards to the study variables.

Kiptui (2014) analyzed the role played by bank and industry-specific factors as well as macroeconomic variables in the determination of interest rate spread in Kenya's banking sector using a panel data analysis of 39 commercial banks. The results indicated that operating costs, non-performing loans as bank specific factors that influenced interest rate spread positively. Macroeconomic factors included Treasury bill rates, GDP growth and exchange rate variability had a positive significant effect on interest rate spread.

Sheriff and Amoako (2014) evaluated the macroeconomic variables (factors) that affect the interest rate spread with a view to determining their short term and long-term relationships in Ghana. Using autoregressive distributed lag (ARDL) cointegration and Vector Error Correction analysis, they observed both short-run and long run relationship between identified macroeconomics variables and interest rate spread in Ghana which included government borrowing interest and inflation rate to be insignificant. Similarly, Churchill, Kwaning and Ababio (2014) examined the determinants of the bank interest margin in Ghana. The study found that factors affecting the determination of interest rate spread in Ghana were GDP and Treasury Bill Rate with a negative effect while Exchange Rate and inflation had a positive effect.

Banda (2010) investigated the key macroeconomic and market determinants of interest rate spreads in Zambia by using Ordinary Least Squares and cointegration analysis using quarterly time series data 1995 to 2008 and it was collected from the Bank of Zambia. The study found exchange rate volatility and inflation rate to be positive and statistically insignificant while reserve requirements and discount window rates were significant. Hence the government should not use them in an attempt to influence interest rate spreads as such policies are bound to fail.

Niyimbanira et al. (2015) identified the determinants of interest rate spreads (IRS) in South Africa over the period 1990 to 2012 by use of the Johansen Cointegration Approach and Vector Error-Correction techniques. They considered the inflation rate, reserve requirements, Treasury bill, discount rate, money supply (M2) and gross domestic product per capita variables as they explain the movement of interest rate spreads. A significant short-run relationship between IRS and its explanatory variables was observed. These macroeconomic variables were significant in explaining the behavior of the South African IRS in the long-run.

2.3 Summary of Literature

Review of literature indicates that various studies of the determinants of banking sector efficiency have been conducted world over and established that both bank specific and macroeconomic factors influence banking system efficiency. However, the short coming in the reviews arises from the fact that the studies focused on inflation rate, exchange rate, Treasury bill rate, reserve requirement, discount window, GDP and money supply as the macroeconomic determinants of banking system efficiency. This makes the effect of central bank rate and open market operations on banking sector efficiency uncertain.

3.0 METHODOLOGY

The study employed a correlation research design based on monthly time series data obtained from CBK spanning three years from January 2013 to December 2015. A research design is the plan and structure of the investigation used to obtain evidence to answer research questions and which strategies are most effective for obtaining it (Taylor & Wallace, 2007). According to Oso and Onen (2011) correlation research design establishes relationship between variables. Analysis was by Fully Modified Least Squares (FMOLS) to establish whether the series in question were cointegrated.

3.1 Model Specification

The study's model was modified based on model (4) such that;

$$IS = f(\text{Re } po, CBR, \vee) \qquad (5)$$

$$IS = \Gamma + S_1 \text{Re } po + S_2 CBR + \vee \qquad (6)$$

Where IS- interest rate spread (proxy to banking sector efficiency), Repo – repurchase agreement rate (proxy to open market operations), CBR- central bank rate.

3.2 Measurement of Variables

Interest Rate Spread (IS): The difference between lending and deposit rates and used as a proxy to banking sector efficiency

Central Bank Rate (CBR): The minimum rate at which CBK lends to commercial banks (Central Bank of Kenya, 2015)

Open Market Operations (OMO): An instrument for mopping up excess liquidity in the market by selling or buying securities (repos) to and from commercial banks by CBK. Repo rate was used as a proxy to OMO.

4.0 RESULTS AND DISCUSSION

The first objective of the study was to establish the effect of CBR and OMO on banking sector efficiency in Kenya. Table 1 results indicate that central bank rate had a significant positive effect on interest rate spread a proxy to banking sector efficiency while repo rate had a significant negative effect on interest rate spread. This implied that an increase in the CBR and repo rate will lead to an increase and a decrease in the interest rate spread in Kenya respectively. Thus, an increase in CBR decreases banking sector efficiency while an increase in repo rate increases banking sector efficiency in Kenya. The findings were consistent with the findings of Niyimbanira et al. (2015) and Banda (2010) who established monetary policy as a significant determinant of banking sector

efficiency proxied by interest rate spread. An increase in CBR means an increase in the cost of borrowing by banks from the Central Bank, this leads to a rise in the lending rate for commercial banks customers which further widens the interest rate spread (detoriorates banking system effeciency). On the other hand, an increase in the repo rate attracts banks to invest in the repos. The banks source funds in form of fixed and other long term deposits from their customers by offering higher deposit rates. This causes the spread between lending and deposit rates to decline.

The second objective of the study was to establish the most effective monetary policy tool for influencing banking sector efficiency in Kenya. Table 1 results indicate that a percentage change (increase/decrease) in CBR changes (increases/decreases) interest rate spread by 0.36% and a percentage change (increase/decrease) in repo rate changes (decreases/increases) interest spread by 0.02%. In comparison, a 0.36% and 0.02% percentage changes interest rate spread as a result of a change in CBR and repo rates respectively indicates that a change in CBR is 18 times more effective in influencing interest rate spread in Kenya as compared to repo rate. Thus, CBR is the most effective tool for influencing banking sector efficiency as compared to repo rate. This may be attributed to the fact that the CBR as an indicator of the monetary policy stance in Kenya has a direct influence on lending rates as opposed to the repo rate such that an increase or decrease in the CBR causes lending rates to increase or decrease instantly. An increase in CBR rate means increased cost of borrowing by commercial bank which is passed over to the consumers.

Table 1: Fully Modified Least Squares (FMOLS) Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CBR	0.364404*	0.117907	3.090609	0.0042
REPO	-0.021126*	0.009732	-2.170840	0.0377
C	-0.063941	0.047319	-1.351268	0.1864
R-squared	0.184892	Mean dependent var		-0.037353
Adjusted R-squared	0.132305	S.D. dependent var		0.406182
S.E. of regression	0.378359	Sum squared resid		4.437822
Durbin-Watson stat	2.435219	Long-run variance		0.074494

Note. * indicates significant at 5% level of significance (Author, 2017).

4.1 Diagnostic Tests

The study conducted various diagnostic tests which included cointegration, parameter and residual diagnostics. Table 2 results indicated that the series (IS, CBR and Repo) in question are cointegrated i.e. there existed a long run relationship among the variables. VIF values of less than 10 according to Gujarati (2004) and Kiganda (2015) as in Table 3, a p-value of 0.898 for the JB-statistic in Figure 2 and a Durbin- Watson value of 2.4 in Table 1 indicated that there was no multicollinearity, residuals were normally distributed and there was no serial correlation.

Table 2: Cointegration Test- Hansen Parameter Instability

Null hypothesis: Series are cointegrated

Lc statistic	Stochastic Trends (m)	Deterministic Trends (k)	Excluded Trends (p2)	Prob.*
0.426915	2	0	0	0.0699

*Hansen (1992b) Lc(m2=2, k=0) p-values, where m2=m-p2 is the number of stochastic trends in the asymptotic distribution

Note. P-value of greater than 0.05 imply accept null hypothesis of cointegration (Author, 2017)

Table 3: Variance Inflation Factors

Variable	Uncentered VIF	Centered VIF
CBR	1.026399	1.004444
REPO	1.004444	1.004444
C	1.021940	NA

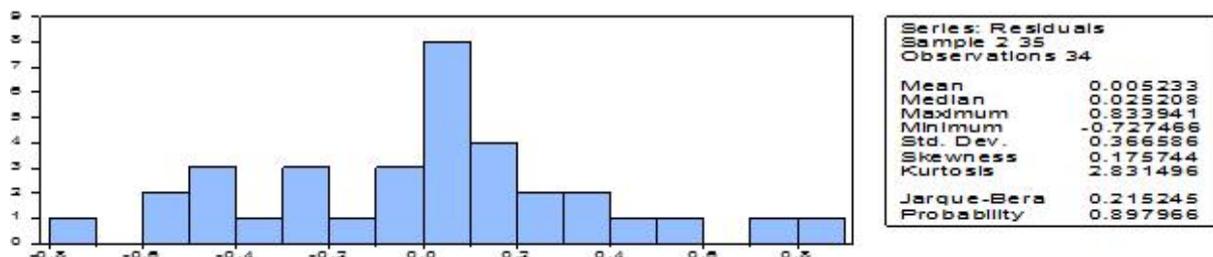Note. VIF < 10 imply no multicollinearity (Author, 2017)

Series: Residuals	
Sample 2 35	
Observations 34	
Mean	0.005233
Median	0.025208
Maximum	0.833941
Minimum	-0.727466
Std. Dev.	0.366586
Skewness	0.175744
Kurtosis	2.831496
Jarque-Bera	0.215245
Probability	0.897966

Figure 2: Normality Test Results, p-value > 0.05 imply residuals normally distributed (Author, 2017)

5.0 CONCLUSIONS

The study concluded that;

i.   CBR and OMO have significant positive and negative effects on banking sector efficiency in Kenya respectively.

ii. CBR is the most effective tool in controlling banking sector efficiency in Kenya.

5.1 Recommendations

The study recommends that to improve banking sector efficiency in Kenya, the Central bank of Kenya must;

i.   Decrease central bank rate (CBR) and increase repo rates which will lead to a decline in interest rate spread an indication of improved banking sector efficiency.

ii. The CBK should adopt the CBR as a monetary policy tool that is most appropriate for influencing banking sector efficiency in Kenya. Its monetary stance should be signaled by changes in CBR.

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