Monetary Policy And Private Sector Credit In Kenya

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Abstract
The Kenyan banking sector has made significant strides in boosting lending to the private sector, which contributed around 31 percent of Gross Domestic Product as of 2021, up from 19 percent in the 1990s. In the past decade, Kenya has enacted several monetary driven policy tools to lower the cost of private sector advances, including the interest rate ceilings that were implemented in September 2016. The relatively high cost of lending by financial corporations to individuals and businesses has been identified as one of the main obstacles to credit expansion in Kenya. To understand how private sector credit responds to monetary policy changes, this study's main goal was to research the influence of policy strategy on private sector lending. Specifically, the study purposed to explore the outcome of changes in the money supply and lending rates on private sector advances. The study is of significance as it examined the connection between Kenya's monetary policy and private sector lending with a view to understand how private enterprise lending responded to changes in money supply and interest rates. The analysis used secondary data, quarterly macroeconomic statistics 2010-2021 from the Central Bank of Kenya and Kenya National Bureau of Statistics and applied a vector error correction model. A unit root test was performed to check for stability, and a Johansen cointegration assessment was performed to establish presence of short- or long-run relationship among the variables affecting private sector lending. The findings of this study ascertained that there exists a long-term relationship between monetary policy and private sector credit in Kenya. To determine how changes in interest rates affect growth of private sector, the research findings show that interest rates and private sector credit are inversely related in the long-term. In addition, the results show that the growth of money supply affects growth of private sector credit that the growth of money supply has a positive impact on the growth of credit to the private sector as per the long-run estimation. This outcome, therefore, shows that, a reduction in the money supply causes a decrease in private sector credit, and vice versa. The study has demonstrated that monetary policy and the expansion of private sector loans are closely related over time. It is, therefore, unfeasible to underestimate the central bank's influence over the economy's long run liquidity management through interest rates and money supply by extension, which impacts several macroeconomic indicators. By implementing accommodative monetary policies that directly affect cost of credit to individuals and firms and, additionally, encourage investment through borrowing by fostering confidence in the nation's financial sector of the economy, the Central Bank of Kenya plays a crucial role in creating the most favorable conditions to foster credit advances to the private sector.
Key words: vector error correction model, long-run estimation, accommodative monetary policy

I.   Introduction

Background of the study

World Bank data shows that the private sector lending is limited. Prior to the global financial crisis, global liquidity was abundant, and credit growth intensified, especially to the private enterprises. However, due to the global financial crisis, the banking system has reduced lending to the sector as it strives to repair its balance sheet after falling asset values, accept more bad debts and reduce typically risks through deleveraging. Real bank credit growth has fallen sharply and is expected to remain weak in most major economies and country groups around the world.

Globally, credit growth to the private sector as a percentage of Gross Domestic Product (GDP) averaged 85 percent per year between 2010 and 2020, up from 80 percent in 2000, while credit growth performance in advanced economies were irregular during this period. In the UK, loan growth increased from 160 percent to 130 percent of GDP between 2012 and 2015. A similar trend emerged in the Eurozone. During this period, the average growth rate in the United States was 50 percent. Massive government spending and credit relief in industrialized countries to fight recession and stabilize bank balance sheets has not increased the lending threshold to the sector. Credit growth in Sub-Saharan Africa has remained modest over this period, averaging around 27 percent, compared to a global average of over 85 percent.

In these economies, the improvement in financial conditions has not led to a new round of credit expansion, which can be explained by several factors. First, when the economy is weak, fewer people need loans because businesses and consumers spend less and produce less. Second, banks have tightened lending guidelines in response to the recent increase in uncertainty caused by the Covid-19 pandemic, poor financial conditions, and rising loan losses. Bank balance sheets continue to be under pressure and funding conditions have tightened.

As a last resort, there is a preference of banks to extend lending to the state rather than to the private enterprise, therefore, crowding out the later. Reduced lending capacity may also result from regulatory uncertainty for banks. Latin America and Sub-Saharan Africa experienced subdued growth of advance rates of between 27 percent and 49 percent in 2021.

However, credit to the private sector in East Asia and the Pacific appears to have been unaffected recently. China has had a major impact on this trend; the country's bank lending as a percentage of GDP has grown rapidly since 2000, reaching 177 percent in 2021, due to expected rapid economic growth and rising asset prices.

Table 1.1: Evolution of Global Private Sector Financing

	Private sector lending (%) of GDP											
	1990	2000	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
World	79.5	81.1	81.1	81.8	82.7	85.7	86.7	85.8	87.8	89.3	98.4	95.2
United States	52.7	49.0	49.9	49.2	49.7	51.1	52.4	52.6	52.2	52.2	54.3	50.4
United Kingdom	104.8	113.9	160.7	149.5	135.5	130.5	131.6	132.8	133.4	132.0	146.0	138.0
Euro area	98.6	97.1	99.7	96.6	92.6	89.9	88.6	87.1	85.6	85.0	92.7	88.5
East Asia & Pacific	139.1	148.1	112.4	118.2	122.9	130.7	132.7	133.3	136.2	141.4	156.2	155.8
China	84.0	111.0	128.9	134.3	140.2	152.6	156.2	154.9	157.8	165.4	182.9	177.3
India	24.9	28.3	51.9	52.4	51.9	51.9	49.1	48.8	50.3	50.8	54.7	50.4
Kenya	18.7	25.6	26.4	28.3	34.5	36.6	35.5	33.1	31.2	30.8	32.1	31.1
Nigeria	4.9	8.2	10.6	11.5	13.3	13.1	14.6	12.8	10.2	10.4	11.2	12.2
Tanzania	13.9	3.1	12.7	12.5	13.2	14.5	13.6	13.0	12.6	12.5	13.1	12.9
Sub-Saharan Africa	23.5	28.6	27.3	25.9	25.8	27.0	27.1	27.1	26.3	26.2	26.7	26.5
Latin America & Caribbean	27.8	24.4	42.7	44.4	45.8	45.5	44.9	44.7	48.9	50.5	54.4	47.8

Source: World Bank

In Kenya, the financial sector has made decent progress in increasing credit to the private sector, accounting for around 31 percent of GDP by 2021. This contrasts sharply with comparable African countries such as Botswana, Egypt, and Rwanda. Notably, Kenya outperformed other countries in the East African region.

The major impediment to credit expansion in the country is identified to be the elevated expense of access. As a result, the country has developed an economic strategy over the years to deal with this problem. In recent years some of these measures have involved the use of both monetary and fiscal interventions. According to the Kenya Economic Overview Program, policy intervention aims to fully expand lending and especially to the private enterprises. For this to be accomplished, the total money supply would have to increase by 10 percent per year, leading to an acceleration in reserves and private enterprise lending by about 11 percent per year.

Kenya has also adopted the implementation of Kenya Vision 2030, which in terms of policy recommendations facilitates the implementation of the policy intervention to keep inflation low below 5 percent. It is expected that continued low inflation and sustained positive real interest rates to support the economy will likely increase lending to the private sector significantly.

Monetary Policy Mechanism

It is still debatable how monetary intervention affects aggregate demand, especially considering how well the transmission process functions. Most economists concur that the real sector is significantly impacted in the near term by monetary policy. According to Anderson and Jodon (1968), monetary measures should be depended upon more so than fiscal ones in the implementation of stabilization policy because they have a stronger and faster impact on economic activity. Fiscal factors are less dependable and less effective at influencing changes in economic activity like those in the private sector, according to Uniamikogbo and Enoma (2001). One of the macroeconomic tools used by a nation's monetary authority to control its economy and achieve desired results is policy interventions. The key purpose of monetary policy intervention for most economies is price stability. In general, it is easy to create and implement monetary policy by availing credit to the financial system. According to Masha (2004), to preserve monetary stability, the Central Bank implements policies that ensure the economy expands and contracts in a controlled manner by making the necessary adjustments to the level of the money supply through bank deposits.

The intent of the financial markets in an efficient institution, is to make it simpler to sell and purchase money. Since it provides funding for corporate and governmental activities as well as the commercialization of novel ideas, the financial market is generally essential to the growth, development, and power of a nation given their ability to offer loans for both long and short terms. The degree of market liquidity may be impacted by the CBK's capacity to execute expansionary or restrictive policy actions. As a result, although other factors remain constant, the monetary policy in place essentially determines the amount of credit extended.

Central Bank makes judgments and implements actions known as monetary policy. Maintaining the economy's price stability is the primary objective. As a result, a crucial weapon of monetary policy for promoting economic growth is a country's money supply. Cash, checks, money orders, and credit cards are all types of money. The most important kind is credit, which comprises loans, bonds, and mortgages. Functionally, monetary policy manages employment levels, long-term interest rates, and inflation. Central banks of various nations employ monetary policy as a vital tool to sustain economic stability and foster economic growth (Prasert et al., 2015). By controlling the amount, availability, and cost of money, one can achieve several specific macroeconomic goals, such as raising output and keeping prices constant.

Since the early economists who supported finance-led growth, such as Schumpeter (1911), have long recognized support extended by the financial sector in promoting development. Savings are converted into profitable investments through the financial sector. Companies and organizations have a better chance of expanding if they have adequate financial access. Several African businesses, especially small and medium-sized industrial companies, are credit-constrained, according to surveys (Bigsten, 2000; Loening, 2008).

Evolution of Monetary Policy in Kenya

The Central Bank of Kenya (CBK) was established in 1996, and monetary policy has undergone several phases since then, beginning with the passive phase during the first decade, moving to the active phase with direct policy instruments in the 1970s and 1980s, and finally to the current active monetary policy with strong institutions (Nyamongo et al 2021). In line with the extensive economic liberalization and the adoption of market-oriented changes in nearly every sector, including the banking industry and the foreign exchange market, the most substantial and extensive monetary policy reforms were implemented in the 1990s (Were et al 2021). Following the revision to the CBK Act in 1996, which also gave CBK greater operational autonomy, they include a broad move from direct to indirect monetary policy instruments with specified objectives.

Monetary targeting has evolved into the main framework for monetary policy over time. Given the cloudy predictability of the velocity and money multiplier as well as the rise in financial innovation, serious questions have been raised about the usefulness of this paradigm. Considering these factors as well as the global changes in monetary policy frameworks, the CBK has been transitioning from the money-based framework to the adoption of the forward-looking inflation-targeting framework, commensurate with modern central banks. Several structural changes have been made to the institutional architecture needed to facilitate inflation targeting in accordance with best practices. One of these was the establishment of the MPC in 2007, which was charged with developing monetary policy. The MPC developed a white paper on the "Modernization of the Monetary Policy Framework and Operations in Kenya" that the CBK released in July 2021 outlined more milestones in the switch to inflation targeting.

Table 1.3: Recently implemented macro-economic policies by the Government of Kenya

Period	Policies initiated	Reasons for implementation	Expected outcome
2011	CBK resorted to using an interest rate corridor to target short-term interest from the initial monetary aggregate targeting (reserve money)	The target variables became unstable (velocity). Unstable money demand functions attributed to rapid financial innovations and a weak relationship between inflation and money. Mobile money, for example, puts additional strain on monetary targeting. Hence frustrating CBK's objective of achieving monetary policy objectives.	Price stability
2016	Interest rate capping	Implemented in response to public complaints over Kenya's high cost of credit, which may have affected a major portion of the population's access to loans.	Reduce credit fees and broaden credit availability for MSMEs and individuals.
2019	Repeal of Interest rate capping	Perverse monetary intervention effects brought about by the interest rate limiting regime. Lending to the private sector continued to drop even though demand for credit surged after the lending rates were capped. To make up for a decline in interest income, some banks increased loan costs by taking advantage of the current approval limits.	Support efficiency of monetary policy. Increase private sector credit. Support the goal of growth

2021	Monetary Policy Committee (MPC) published a paper on "Modernization of the Monetary Policy Framework and Operations in Kenya"	Adopt policy operations and structure to international best practices. Primary objective – price stability; Exchange rate policy – flexible exchange rate regime; Intermediate target – Inflation forecast; Operating target – short-term interest rates	Transition from monetary aggregates targeting to Inflation targeting for a fully-fledged forward-looking monetary policy framework

Source: Central Bank of Kenya

Problem Statement

Lending to the private enterprise is necessary in achieving long-term resilient output expansion, as discovered by (Kahuthu 1999). The primary obstacle to lending expansion in Kenya is recognized to be the high expense of loan availability. Although the Kenyan government has utilized monetary policy to encourage private sector lending extensively, little has been said about how it affects that credit.

By examining how monetary policy interventions affect the expansion of credit in the private sector, this study examines the connection between private enterprise lending in Kenya and monetary policy initiatives. Previous research in Kenya focused on policy interventions and private sector lending separately, however, did not dynamically link them to reveal how changes in policy interventions through money supply and changes in interest rates impacted private sector credit. Specifically, Were and Nzomoi (2012) investigated the effect of private sector lending on Kenya's output growth, and Christensen (2007) investigated how various interventions crowd out the private enterprise.

Although this earlier research was closely linked, they did not offer unique insights into how Kenya's monetary policy affects the growth of private sector lending. It is therefore unclear what impact monetary adjustment procedures have on loans in the private sector.

The study, therefore, sought to understand how private sector credit responded to monetary policy changes, which is the influence of policy strategy by the central bank on private sector lending.

Significance of the Study

In recent times, Kenya's government devised economic policies and implemented various monetary policy reforms aimed at improving policy formulation tools, upgrading implementation infrastructure, ensuring effective communication, improving policy filtration, and improving financial system stability, these reforms have given rise to the level of private sector credit among other economic benefits.

Beginning 2010, Kenya has also witnessed a significant shift in economic agents' preferences towards digital financial platforms and other structural shifts of the economy. In addition, a law on interest rate caping was introduced in September 2016. It was put into place in response to public complaints about Kenya's high credit costs, which may have affected the availability of loans for a significant portion of the population. As a result, the law's implementation was projected to cut credit costs and boost credit availability. Consequently, many banks took steps to implement the law, but also announced measures to mitigate any undesired outcome that could affect their financial positions.

The CBK is also in the process of transitioning from targeting monetary aggregates to inflation targeting as a result of a shift in economic agents' preferences towards digital financial platforms and other structural shifts of the economy. In July 2021, the Monetary Policy Committee (MPC) published a white paper on an ambitious agenda to align monetary policy framework and operations to global best practice. Therefore, the study will thus offer a dependable empirical examination of how monetary policy changes have impacted private sector credit.

II. Literature Review

Theoretical literature

Several hypotheses put out by economists can provide insights on how private sector lending reacts because of monetary intervention. The money view and credit view methodologies are two theories that are discussed.

Money View

Money (interest rate) channel, which is a component of the classic Keynesian framework, is the foundation of the traditional policy process. The fundamental conventions illustrate that regulatory agencies precisely manage the nominal money supply implicitly modifying the reserves. Sticky pricing adjustments to shocks in the money supply make up the second aspect. According to traditional theories of aggregate demand, when loans, bonds, and other debt instruments are gathered in a bond market, money is granted a unique significance, thus, the money channel assumes the absence of conflict in the loan market (Bernanke and Blinder, 1988). Restrictive policy measures increase the cost of capital, which discourages investment and expenditure and has an impact on the financial system's liquidity and current interest rates.

Credit View

A financial shock could impact a borrower company's net worth or financial condition. Increasing a company's net value on its balance sheet makes it possible to obtain external credit market financing, which promotes investment. The credit perspective acknowledges the special function played by banks and other financial intermediaries in influencing aggregate demand. The essential role financial establishments play in establishing transaction costs and, ultimately, the degree of actual economic activity.

Loans are becoming a bigger part of bank asset portfolios than reserves and bonds. One of the main elements supporting the development of a credit channel is the presence of market ineptitudes in the banking system. The difference in the costs of finances brought on by the knowledge asymmetry between lenders and borrowers is known as the "external finance premium". It is claimed that interest rates and the external finance premium both function as measures of how successful monetary policy is. The credit path therefore merges elements that magnify and transmit conventional interest rates impacts (Bernanke and Gertler, 1995).

The Balance Sheet Channel

A company's profit and loss account affect its ability to obtain outside finance. According to this channel, increasing interest rates destabilize the statement of accounts of businesses, which in turn causes profitability to be constrained by declining cash flow and makes it harder to access capital for financing investments. Due to its lowering net worth and falling collateral values, the corporation can also borrow less money for investments (Gertler and Gilchrist, 1993). Interest rate increases brought on by policy can decrease the value of an enterprise by diminishing anticipated business prospects and increasing debt values.

The Bank Lending Channel

As monetary policy becomes more restrictive, bank deposits reduce, and the availability of loans correspondingly declines, the effect of interest rates on the overall level of demand diminishes. The proponents of this channel contend that loans are the sole outside funding source for certain companies. These companies are not allowed to issue securities. Friction caused by monetary shocks in banks' asset-liability management would subsequently be passed to the real economy by producers who depend on banks. Because there are fewer loans and advances available due to a tight monetary policy that depletes banking system reserves, borrowers that rely on banks pay a higher external finance premium. Kyshap and Stein (2000) found that loan-dependent enterprises will suffer if contractionary monetary policy lowers the supply of loans.

Empirical literature

Many studies have investigated how policy instruments and bank functions are related. Several renowned studies have used a range of monetary metrics to examine how macroeconomic stability affected bank lending and activity.

Romer and Romer (1990) demonstrated monetary aggregates tend to decline at a faster rate than loans and advances following a restrictive monetary policy intervention. They therefore saw this outcome as being in line with the financial standpoint. They argued that variables other than monetary policy, such as demand, are what determine bank credit.

Gertler and Gilchrist conducted research focusing on effects of tighter policy interventions on business loaning in 1994. They discovered that when policies are tightened, business lending does not decrease. They concluded that a fall in real estate loans and spending were the main causes of the total lending decline. A basic loan demand-loan supply schedule was used by Erhmann (2001) to analyze the European economy. Using an error correction type regression, the research concluded that the Eurozone's non-accommodative monetary policy resulted in a decline in bank lending.

Punita and Somaiya (2006) explored how the performance of Indian banks was affected by monetary policy shifts that occurred between 1995 and 2000. Each of the four interest rates used in the study—the statutory ratio, cash reserve ratio, loan interest rate, and interest rate on bank deposits—has a distinct impact on the bank's ability to turn a profit. Since lending rates have been demonstrated to have an optimistic and considerable influence on bank profitability, lower advance rates are predicted to result in reduced bank profitability. Bank profitability is negatively impacted by bank interest rates, cash reserve ratios, and statutory ratios.

Olweny and Chiluwe (2012) analyzed the connection relating to monetary strategy and investment in the Kenyan private sector, tracking the spread of monetary policy effects to understand how investment responds to variations in monetary strategy. The empirical findings show that a 1 percent tightening of monetary policy causes a 2.6 percent drop in investment while a 1 percent easing of monetary policy causes a 2.6 percent rise.

Maturu and Ndirangu (2014) addressed the long-standing experiential query of how Kenyan monetary policy is conveyed. A BVAR model was used for analysis. They discovered evidence about the filtration of policy interventions in small open economies that was consistent with stylized realities. For instance, the consequences of variations in the policy rate on prices and production we found to statistically significant despite their small

size. Most importantly, they discovered that, when using the policy rate, tightening monetary policy by 30 basis points can cause the headline consumer price index to decline by 1 basis point. Hence, stricter monetary policy helps to promote price stability overall. The 30-basis point tightening of monetary policy would result in a 0.6 basis point drop in real output for the economy.

Misati, Ouma, and Ngoka (2014) looked at the dynamic links between banking sector characteristics and the dissemination of monetary policy ensuing the worldwide financial crunch of 2007–2008. The study used structural vector autoregression, and the findings indicated that, at the intermediate stage of policy intervention pass through, the channels of interest rates and exchange rates are much further significant than the bank lending channel.

Overview of the Literature

Many hypothetical and empirical studies have been done on how monetary strategy affects bank lending. In summary, the have found out that financial institutions play crucial role in establishing related costs on loans and advances, which ultimately determine bank credit rates which influence loan demand. In addition, restrictive policy interventions through non-accommodative monetary policy have affected the liquidity of the financial system and the prevailing rates by raising the cost of capital which in turn has led to limited consumption, investment and spending which has resulted in a decline in bank lending. The credit path merges elements that magnify and transmit conventional interest rates impacts as at the intermediate stage of policy intervention pass through, the channels of interest rates and exchange rates are much further significant.

However, it is also noted the impact of monetary policy intervention on lending and interest rates in Kenya has received very little attention. The studies demonstrate that monetary policy interventions affect lending on a broader perspective, thus it is critical to adopt a new perspective to empirically assess lending to the private segment. The study goal therefore is to advance comprehension of how Kenya's monetary strategy influences loans to the private sector. This study is unique because it will solely analyze how as it is still uncertain what is the pure effect of monetary adjustment processes have on loans to the private enterprise. In addition, it will employ recent quarterly data from 2010 to 2021 to properly capture the influence of monetary intervention as well as any developing patterns or recent structural shifts.

III. Methodology

Research Design

The study used a longitudinal research technique to assess the influence of policy intervention on private sector lending. It employed quantitative time series data from 2010 to 2021 for experiential assessment to address the research thematic.

Theoretical Framework

This study employed an analytical strategy consistent with the monetary intervention transmission model based on credit perspective theory. A simplified version of Bernanke and Blinder (1988) model is used as the foundation for examination of bank lending. The deposit market model is restricted to an equilibrium relationship as it assumes that deposits (D) and money (M) depend on the policy interest rate (i):

$$M = D = -\psi i + \chi \qquad [3.2.1]$$

A bank n has a loan demand (Q_n^d) that is dependent on aggregate demand (Y), and the inflation rate (π), and nominal rate of interest (i);

$$(Q_n^d) = \beta_1 Y + \beta_2 \pi - \beta_3 i \qquad [3.2.2]$$

Loan demand is thought to be negatively related to the nominal interest rate on loans and positively correlated with aggregate demand. The coefficient on inflation has no a priori sign as according to theoretical models, any sign is possible. In a model presented by Cukierman and Hercowitz (1989), loan demand and inflation are positively correlated. They showed that high inflation penalizes corporate money holdings while making bank loans more enticing.

The following expression describes loan supply (Q_n^s): where X is a policy intervention tool:

$$Q_i^s = \mu_i D_i - \beta_4 i + \beta_5 X \qquad [3.2.3]$$

The coefficient β_5 explains the response of bank i's loans to the policy intervention. A significant β_5 coefficient indicates that loans supply is affected by monetary intervention.

Furthermore, it is thought that not all banks rely on deposits in the same way. The above simulation predicts that deposit adjustments will have a smaller impact on larger, more liquid, or more capitalized banks (x_i)

$$\mu_i = \mu_o - \mu_o x_i \qquad [3.2.4]$$

The model is summarized by clearing of loan market and equations [3.2.1] to [3.2.4]:

$$L_i = \frac{\beta_1 \beta_4 Y + \beta_2 \beta_4 \pi - (\beta_5 + \mu_0 \psi)\beta_3 i + \mu_1 \psi \beta_3 X x_i + \mu_0 \beta_3 \chi - \mu_1 \beta_3 \chi x_i}{\beta_3 + \beta_4} \qquad [3.2.5]$$

Based on the preceding equation, the hypothetical regression model can be simplified as follows:

$$L_i = aY + b\pi - c_0 i + c_1 X\, x_i + dx_i + C \qquad\qquad [3.2.6]$$

where; L_i = Loans
Y = Gross domestic product
π = Inflation rate
i = Interest rate
X = Monetary policy instrument

The co-efficient $c_1 = \frac{\mu_1\,\psi\beta_3}{\beta_3+\beta_4}$ connects the bank characteristic to how bank lending responds to monetary policy. A significant parameter for c_1 in the model above suggests that policy intervention has an impact on credit provision. To achieve this, a bank's interest elasticity of loan demand must be independent of its characteristic x_i.

Empirical Model

A fundamental model that is applied for analysis is built using a methodology similar to that utilized by Olweny and Chiluwe (2012). Through the transmission process, this linear regression model captures the impacts of monetary intervention. Due to the estimation procedure's simplicity, ease of implementation, and most importantly, the estimated output elasticities describe how policy interventions affect developments in private sector credit. If Elasticity coefficient (Ep) > 1, this means that demand is elastic, therefore, a slight variation in interest rates can produce greater change in quantity demanded for advances to the private sector; If Ep < 1, then demand is inelastic, therefore, a variation in interest rates can produce a change to a certain extent in quantity demanded for credit growth to the private sector; If Ep = 1, demand for credit growth to the private sector is unit elastic.

The empirical model is specified as:

$$psc_t = \beta_0 + \beta_1 gdp_t + \beta_2 \pi_t + \beta_3 m3_t - \beta_4 i_t + \varepsilon_t \qquad\qquad [3.2.7]$$

where; psc t = Private sector credit growth
gdp = GDP growth
π = Inflation rate
i = Central Bank Rate (CBR)
$m3$ = Money supply growth
ε = The error term of the regression

As stated in the research objectives, this empirical model is important in determining the influence of adjustments in the money supply on private sector lending. Variations in money supply growth at a specific time $m3$ will explain changes in psc within the same period. Furthermore, changes in interest rates i will explain the changes in psc.

Table 3.1 Description and Measurement of Variables

Variable	Description	Dimension	Data Resource
Growth in Private Sector Credit (psc)	Credit provided by a commercial bank to the private sector	Quarterly PSC growth (percent)	Central Bank of Kenya
Growth in Gross Domestic Product (gdp)	Growth of all produced commodities and services within a country's borders either for domestic consumption or exports	Quarterly GDP growth (percent)	Kenya National Bureau of Statistics
Inflation rate (π)	Measures price level changes of consumer commodities and services purchased by households.	Quarterly CPI growth (percent)	Kenya National Bureau of Statistics
Interest rate (i)	Lowest rate that the Central Bank charges banks for loans	Quarterly rate (percent)	Central Bank of Kenya
Growth in Money supply (m3)	Growth in Currency outside banks + demand deposits + time deposits	Quarterly rate (percent)	Central Bank of Kenya

Diagnostic tests

To assess stationarity, the Augmented Dickey Fuller (ADF) was used, this also determined the integration order of the series. To check for cointegration in multivariate time series and evaluation of the long-standing impact of policy intervention, the Johansen co-integration test was done.

To test for symmetry, skewness, and kurtosis in the distribution of data, a normality test was employed. Optimal lag selection criteria were used to empirically estimate the ideal lag length for the model. Multicollinearity typically manifests when there is autonomous connection between variables, a Variance Inflation Factors (VIF) was used to check for multicollinearity. In addition, to ascertain whether serial correlation occurred between the dependent and independent variables, the VEC Residuals Serial Correlation LM test was conducted.

IV. Empirical Findings

Stationarity test

Macroeconomic time series are susceptible towards non-stationarity, which leads to erroneous regression results, claim Khan and Gill (2009). To avoid this occurrence, the variables are firstly tested for stationarity. All level variables, except for interest rate (i), are translated into their growth rates to lessen the chance of multicollinearity in the model. Under the null hypothesis that each variable has a unit root, the univariate properties of all data series are assessed using the Augmented Dickey-Fuller (ADF) and Phillips Peron (PP) tests to ascertain their degree of integration. A unit root test was conducted for each of the variables both in level and their 1st difference.

The findings show that after removing the first difference, I(1), the variables of growth of private sector credit, growth of gross domestic product, growth of money supply, inflation and interest rates become stationary at 5 percent significance level. In this case, the time series data is stationary (Table 4.1).

Table 4.1: Stationarity test outcomes

Variable type	Level		1st difference		Integration Order
	ADF	**PP**	**ADF**	**PP**	
Growth of Private Sector Credit	-2.941145	-2.925169	-2.926622*	-2.926622*	I (1)
Growth of Gross Domestic Product	-2.933158	-2.925169	-2.935001*	-2.926622*	I (1)
Interest rate	-2.926622	-2.925169	-2.931404*	-2.926622*	I (1)
Growth of Money Supply	-2.925169	-2.925169	-2.926622*	-2.926622*	I (1)
Growth of CPI (Inflation rate)	-2.926622	-2.925169	-2.931404*	-2.926622*	I (1)

*Significance at 5%
Source: Analysis from the research data

Multicollinearity test

To reduce the likelihood of multicollinearity in the model, all the variables which are in level, are converted into their growth rates (As specified in the empirical model), except for the interest rates. A Variance Inflation Factors (VIF) simulation is conducted on the variables, and the outcomes show nonexistent of significant multicollinearity between the exogeneous variable and the other variables as the Centered VIF is less than 10.

Table 4.2: VIF test results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	5.164090	23.95630	NA
M3	0.008493	7.799084	1.088178
I	0.037605	16.26941	1.298333
GDP	0.037490	5.087413	1.062392
INF	0.024526	6.682830	1.299145

Source: Analysis from the research data

Optimal Lag Selection

Five lag selection criteria were used to empirically estimate the ideal lag length for the model. Majority outcome determined the ideal lag length to be lag 1 as depicted by the majority criterion.

Table 4.3: Ideal lag selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-567.6272	NA	77710.60	25.45010	25.65084	25.52493
1	-404.7394	282.3387	170.7761*	19.32175	20.52619*	19.77076*
2	-379.4795	38.17061*	176.1480	19.31020*	21.51834	20.13337
3	-362.9235	21.33878	286.7007	19.68549	22.89733	20.88283
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						

HQ: Hannan-Quinn information criterion	

Source: Analysis from the research data

To determine whether the VECM is stable, the study also employed the inverse roots method. All inverse roots with absolute values less than one must be inside the unit circle to be stable. Estimation yields inaccurate results in the presence of unstable roots. Because every root is inside the unit circle, the VECM is stable.

Figure 4.3: AR characteristic polynomial's inverse roots

Inverse Roots of AR Characteristic Polynomial
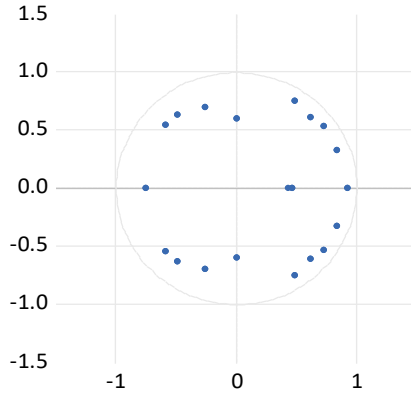
Source: Analysis from the research data

Co-integration test

According to the Trace statistic test, it identifies two co-integrating equations at the 0.05 level, there are two related linkages among the expansion of private sector advances, money supply, gross domestic product, inflation, and interest rates, therefore, there is existence of co-integration in all variables.

Table 4.4: Johansen cointegration test outcomes

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.585565	91.28560	69.81889	0.0004
At most 1 *	0.369916	50.76697	47.85613	0.0260
At most 2	0.291659	29.51944	29.79707	0.0538
At most 3	0.220795	13.65725	15.49471	0.0928
At most 4	0.046309	2.181122	3.841465	0.1397
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Analysis from the research data

Serial Correlation LM Test

To ascertain whether serial correlation occurred between the dependent and independent variables, the VEC Residuals Serial Correlation LM test was run. The null hypothesis is rejected if the likelihood is significant at the five-percentile level. The data demonstrate the absence of serial correlation.

Table 4.5a: VEC residual serial correlation LM results

Null hypothesis: No serial correlation at lag h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	27.21273	25	0.3453	1.104258	(25, 112.9)	0.3498
2	22.28581	25	0.6192	0.886024	(25, 112.9)	0.6231

Null hypothesis: No serial correlation at lags 1 to h							
Lag		LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1		27.21273	25	0.3453	1.104258	(25, 112.9)	0.3498
2		53.89628	50	0.3277	1.089435	(50, 117.4)	0.3477
*Edgeworth expansion corrected likelihood ratio statistic.							

Source: Analysis from the research data

In addition, the VEC Residuals Heteroskedasticity test also failed to reject the null hypothesis, corroborating that there is no heteroskedasticity in the model.

Table 4.5b: VEC Residual Heteroskedasticity results

Joint test:					
Chi-sq	df	Prob.			
160.5129	180	0.8488			
Individual components:					
Dependent	R-squared	F(12,33)	Prob.	Chi-sq(12)	Prob.
res1*res1	0.231588	0.828808	0.6212	10.65303	0.5589
res2*res2	0.069662	0.205914	0.9972	3.204441	0.9939
res3*res3	0.199966	0.687355	0.7513	9.198442	0.6859
res4*res4	0.287199	1.108022	0.3863	13.21118	0.3539
res5*res5	0.765746	8.989414	0.0000	35.22433	0.0004
res2*res1	0.089393	0.269964	0.9904	4.112086	0.9813
res3*res1	0.211270	0.736619	0.7065	9.718431	0.6406
res3*res2	0.031025	0.088051	1.0000	1.427160	0.9999
res4*res1	0.323212	1.313309	0.2576	14.86774	0.2487
res4*res2	0.162163	0.532261	0.8778	7.459493	0.8258
res4*res3	0.206205	0.714372	0.7268	9.485448	0.6610
res5*res1	0.553561	3.409853	0.0026	25.46380	0.0128
res5*res2	0.209595	0.729230	0.7133	9.641382	0.6474
res5*res3	0.659135	5.317719	0.0001	30.32023	0.0025
res5*res4	0.580688	3.808366	0.0011	26.71166	0.0085

Source: Analysis from the research data

Error Correction Model

The approximate Error Correction Term (ECT) in the short run is -0.322632, indicating that about 32.2 percent of the divergence across the long run and short run is adjusted in a quarter. This value illustrates the speed of correction towards symmetry.

Table 4.6: Error Correction Model

Dependent Variable: D(PSC)				
Method: Least Squares				
Date: 12/20/23 Time: 10:24				
Sample (adjusted): 2010Q2 2021Q4				
Included observations: 47 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.768541	1.138727	3.309432	0.0021
D(M3)	0.399764	0.147587	2.671699	0.0119

I	-0.420096	0.185135	4.398580	0.0001
D(GDP)	0.105930	0.132037	-0.923590	0.0947
D(INF)	-0.686402	0.151884	-3.573272	0.0010
ECT(-1)	-0.322632	0.097776	-2.902108	0.0050
R-squared	0.695328	Mean dependent var		-0.154529
Adjusted R-squared	0.653219	S.D. dependent var		2.870132
S.E. of regression	1.689795	Akaike info criterion		4.081785
Sum squared resid	108.2750	Schwarz criterion		4.217974
Log likelihood	-82.62195	Hannan-Quinn criter.		4.170665
F-statistic	17.94095	Durbin-Watson stat		1.674665
Prob(F-statistic)	0.000000			

Source: Analysis from the research data

The outcomes above show that the relationship across dependent and independent variables are explained by the resultant probabilities. In this case, probability outcomes of less than 0.05 significance levels show that the independent variables explain the dynamics of dependent variable. It can be pointed out that all variables are significant at 5 percent level except GDP which is significant at 10 percent level.

The R-squared and Adjusted R-squared explain the fitness of the model with regard to the association linking dependent and independent variables. From the above results, the R-squared explains 69.5 percent of the relationship between dependent and independent variables, with only about 30.5 percent of the variations being explained by additional variables not incorporated in the model.

Due to the several periods required for the correction process, each equation in the ECM will have lagged variables. Table 4.6 above suggests a significant ECM with a t indicator of -2.902108 and a likelihood of 0.0050. After an exogenous shock, the model is anticipated to return to equilibrium. According to the ECT of -0.322632 (ECT (-1)), the disequilibrium is corrected at a rate of 32.2 percent. A negative sign would represent a move away from equilibrium, whereas a positive sign would represent a move toward symmetry. The coefficient (0.32) ranges from 0 to 1, with 0 signifying no adjustment and 1 denoting a full adjustment one period later, in absolute terms.

Regression estimation

The utmost eigenvalue and the trace criterion imply two cointegrating equations at the 0.05 level. Cointegration suggests that two or more variables have a long-run link with one another. Appendix A contains the normalized cointegration equation.

The estimated long-run equation is shown as:
$$psc = 3.96 + 0.23gdp - 1.69inf + 2.02m3 - 0.42i \qquad [4.1]$$

T-value	[0.45]	[-3.24]	[8.92]	[-0.53]
Standard error	(0.52)	(0.52)	(0.23)	(0.79)

Since the study's focus is on psc, which is explained by the impacts of the growth of gdp, m3, inf, and i on growth of advances to the private sector, the co-integrating vector is normalized with regard to psc. The variables' signs support the theory put forth in the literature that, over time, money supply and output growth have a positive influence on evolution of advances to the private sector while a rise in inflation and interest rates has an adverse impact.

Interpretation of results

The study's main objective was to determine how changes in Kenya's money supply affected credit in the private sector. From the outcome, money supply has a 2.02 percent positive influence on long run growth of advances to the private sector. The expansion of private investment is positively influenced by the money supply, which corroborates expectations from the literature. The results categorically support both the objective of determining how the growth of money supply affects growth of advances to the private sector as well as the hypothesis that the growth of money supply has a positive influence on the growth of credit to the private sector.

A unitary change in the growth of money supply influences private sector credit by 2.02 percent, as per the long-run estimation. According to this relationship, a reduction in the money supply causes a decrease in private sector credit, and a rise in the money supply causes a rise in private sector credit.

The study's second objective was to determine how interest rate changes affected growth of advances to the private sector in Kenya. The study set out to assess the relationship between interest rates and the expansion of private sector lending, assuming that the two variables are inversely related. The long-term estimate was found to be -0.41. The coefficient sign confirms the relationship's negativity in line with theory, and the value of -0.41 shows how much growth of private sector credit changes because of a unitary change in interest rate.

The study's main goal was to generally evaluate how monetary policy affected Kenya's private sector credit expansion. The long-term link was estimated, and the model's fitness with respect to the relationship

between the dependent and independent variables is explained by the R-squared and Adjusted R-squared. Based on the findings, the regression and R-squared indicate that in the long run, the independent variables account for approximately 61.2 percent of the variance in the expansion of private sector lending.

Response of private sector lending to interest rate changes

Long-term equation predicts a negative correlation of -0.42 in the overall equation between private sector credit and interest rate. The finding of a negative connection is in line with the theoretical framework put forth by Amidu and Wolfe (2008). The long-run perspective leads to the conclusion that the demand for resources that can be invested in is interest elastic. According to this concept, the cost of money decreases and the demand for loanable funds increases when interest rates decline.

Response of Private sector lending to money supply changes

According to the approximation of the long-run link, the growth of private sector lending increases by 2.02 percent for every 1 percent rise in the growth of money supply. The fact that both variables are moving in the same direction lends credence to the argument that money availability influences private sector investment favorably. As per Kahn's (2010) theoretical literature, the money supply's long-term influence on private sector investment displays the most probable coefficient sign. The credit perspective of monetary policy was developed by Bernanke and Blinder (1988), who predicted that as monetary policy tightens, banks will face pressure to reduce their lending and securities.

Consequently, CBK action has an effective effect on credit by changing the money supply, which in turn has an impact on bank-dependent private sector investment. Thus, a unitary tightening of monetary policy will result in a 2.02 percent decrease in investment, while a 1 percent easing of monetary policy has the opposite effect by increasing the supply of credit held by commercial banks that will be used for investment, based on the estimated long run equation.

Response of private sector lending to inflation changes

The predicted negative relationship for the complete equation is -1.69 as per the long run equation. The finding of a negative connection is in line with the theoretical framework put forth by Amidu and Wolfe (2008). Changes in inflation have a big impact on investment. In other words, the belief that the demand for investable resources is inflation elastic reflects the long-run orientation. According to this viewpoint, when the rate of inflation decreases, the price of money decreases and there is a greater demand for loanable funds.

In conclusion, it is critical to highlight that the study's findings demonstrate that interest rates have a negative and substantial role in the expansion of credit to Kenya's private sector. Furthermore, as predicted, additional factors including the money supply and inflation rate exhibit statistically significant positive and negative effects, respectively.

V. Summary, Conclusion and Policy recommendations

Summary

The primary goal was to investigate how Kenyan monetary policy and private sector lending relate to one another. This was driven by the finding that the country's high access costs are the main barrier to credit expansion. As a result, as of 2021, the average advances to the private sector to real GDP ratio was approximately 31 percent, below the levels seen in Kenya's peer economies, including South Africa. Policymakers are starting to express concern over Kenya's poor private sector credit availability.

Research indicates that a tight monetary policy might considerably hinder the growth of lending in the private sector within an economy. Kenya's Economic Review Strategy (ERS) focal objective, which was approved in 2003, was to enhance advancing to the private sector. To do this, it was estimated that the money supply would increase by 10 percent annually.

The following objectives were adopted for this study; to determine the effect of money supply on private sector credit in Kenya and to ascertain the effect of interest rates on private sector credit in Kenya.

To achieve these objectives, the scope of the study focused on quarterly periodic series data from 2010 to 2021 from the CBK and KNBS. Prior to adding the variables in the model for practical analysis, stationarity and co-integration tests were performed. This was a key step because, if non-stationary data were used without co-integration, regression results would have been erroneous. The integration order of the series was established by using the ADF for both level and first difference to evaluate stationarity. For robustness, PP tests was also used. The outcome showed that the time series data was stationary and that a unit root was nonexistent. The Johansen co-integration test was used to assess cointegration in the time series and the long-term effects of policy intervention on lending to the private sector by the independent variables. The findings suggest that the dependent and independent variables exhibited co-integration.

To establish if the data series was normally distributed, a normality test was done. The skewness and kurtosis were measured using the Jarque-Bera test. The results showed that there is no signal of significance at 5 percent confidence level from the Jarque-Bera statistic, therefore, the data was normally distributed. To prove for nonexistence of multicollinearity between the variables, a VIF simulation was conducted and from the results, the VIF was less than 10, demonstrating that there was not a significant degree of multicollinearity between the independent and dependent variables.

To ascertain whether serial correlation occurred between the dependent and independent variables, the VEC Residuals Serial Correlation LM test was run. The data did not show serial association, and since there was no significance at the five percent level, the null hypothesis could not be rejected. This was confirmed by the VEC Residuals Heteroskedasticity test, which showed that the model lacked heteroskedasticity.

Lastly, regression analysis was conducted, and the resultant outcome indicated that the R-squared show that the endogenous variables account for roughly 61.2 percent of the variation in Kenya's private sector loan growth.

Conclusion

Based on the core objectives of this study, the outcomes enable us to reach the conclusion that monetary policy and private sector loan expansion have a long-term relationship in Kenya. The central bank's role in managing the economy's liquidity, which affects several macroeconomic indicators, cannot be overstated. The CBK plays a critical position in establishing the most favorable economic conditions for development by implementing accommodative monetary policies with a direct impact on the cost of advances to both individuals and businesses and, in addition, encourage investment through borrowing by fostering confidence in the financial sector of the economy.

Policy recommendations

The research found a link relating the expansion of money supply and private sector lending, suggesting that expansionary monetary policy is encouraged to be enhanced. Reduced cash reserve requirements or repurchase agreements, whereby the central bank in exchange for securities, lends banks short-term funds, could be used to achieve this. The current level of liquid money in the economy requires monetary officials to exercise restraint, though, as too much market liquidity could result to a negative effect to the economy.

Subsequently elevated inflation hinders investments in the private sector, monetary policymakers should consider reducing the quantity of spending in the economy. This means that to reduce inflationary pressures, contractionary monetary policies will need to be implemented. This could entail employing monetary policy instruments like repurchase agreements to absorb excess liquidity in the market and raising the reserve requirement for commercial banks to keep inflationary pressure within target.

Implementing steps that would lead to accommodative interest rates is crucial for monetary authorities as lowering the CBR is one of these potential measures. Accommodative monetary policy, therefore, by lowering the CBR will lead to lower interest rates and an increase to available advances to be offered to the private sector by financial institutions.

Areas for further research

The nexus between monetary policy changes and the expansion of lending to the private sector was the key focus in this study. However, there are several areas for further research which can be explored for further understanding of this connection. The study proposes that further studies get more insights on this relationship can be done and can focus on the following: (i) Investigate the channels through which changes in monetary policy affect credit availability to the private sector. Explore how variations in interest rates, reserve requirements, and other policy tools influence lending decisions by commercial banks and the subsequent impact on borrowing costs and credit availability for businesses and households; (ii) investigate whether changes in monetary policy lead to shifts in lending patterns, such as a preference for certain sectors or types of borrowers; (iii) analyze the potential impact of monetary policy on banks' risk-taking behavior and its implications for financial stability; (iv) using panel data, investigate whether the efficacy of monetary policy transmission varies across countries and identify the factors that drive these differences.

References
[1]. Adriana, A., Eduardo T And Santander, E., (2004) "Bank Lending Channel In Venezuela: Evidence From Bank Level Data" Bis Working Papers Series, (345)
[2]. Alam, T., And Waheed M (2006) "Sectoral Effects Of Monetary Policy: Evidence From Pakistan" The Pakistan Development Review , 45, 1103 – 1115
[3]. Amidu, M., And Wolfe S (2008): The Impact Of Monetary Policy On Banks' Credit In Ghana. Review Of Financial Economics, 22, 146-157
[4]. Anderson, L., And Jordan J (1968) "Monetary And Fiscal Actions: A Test Of Their Relative Importance In Economic Stabilization". Federal Reserve Bank Of St. Louis Review, 80, 29-45.

[5].   Bernanke, B., And Blinder, A., (1988) "Money, Credit And Aggregate Demand" American Economic Association, Paper And Proceedings,78(2), 901-921

[6].   Bernanke, B., And Gertler, M. (1995) "Inside The Black Box: The Credit Channel Of Monetary Policy Transmission" The Journal Of Economic Perspectives, 9, 27-48

[7].   Bigsten, A, Collier, P, Dercon, S., Fafchamps M, (2000) "Credit Constraints In Manufacturing Enterprises In Africa", Working Paper Series 2000, (24)

[8].   Ceccheti, S. (1995) "Distinguishing Theories Of Monetary Transmission Mechanism" Review, Federal Reserve Bank Of St. Louis, 77

[9].   Central Bank Of Kenya (2020) "Annual Report"

[10]. Chiluwe, M., And Olweny T (2012) "The Effect Of Monetary Policy On Private Sector Investment In Kenya" Journal Of Applied Finance & Banking, 2(2), 239-287

[11]. Cukierman, A., And Hercowitz, Z. (1989) "Oligopolistic Financial Intermediation, Inflation And The Interest Rate Spread", Foerder Institute For Economic Research, Tel-Aviv University, Working Paper Series, 17(89)

[12]. De Gregorio, J., And Sturzenegger F. (1997) 'Financial Markets And Inflation Under Imperfect

[13]. Information'. Journal Of Development Economics, Vol.54, 1, (149-168)

[14]. Erhmann, M., Gambarcota, L., Jorge, M., Sevestre, P., And Worms, A., (2001) "Financial Systems And The Role Of Banks In Monetary Transmission In The Euro Area" Ecb Working Paper Series, 105

[15]. Gertler, M., And Gilchrist, S., (1993) "The Role Of Credit Market Imperfections In Monetary Transmission Mechanism: Arguments And Evidence" The Scandinavian Journal Of Economics, 95(1), 43-64

[16]. Gertler, M., And Gilchrist, S., (1994) "Monetary Policy Business Cycles And The Behaviour Of Small Manufacturing Firms" Quarterly Journal Of Economics, 109(5), 309-340

[17]. Government Of Kenya (2007) "Kenya Vision 2030; A Globally Competitive And Prosperous Kenya".

[18]. Huybens, E., And Smith, B.D. (1999) 'Inflation, Financial Markets And Long-Run Real Activity'

[19]. Journal Of Monetary Economics, 43(2), 283-315.

[20]. Kahuthu, C. (1999) "Private Sector Development In Kenya: Prospects And Challenges". Nairobi: Undp.

[21]. Kashyap, A., And Stein, J., (1994) "Monetary Policy And The Bank Lending Channel" In Monetary: Studies In Business Cycle, 29, 221-256

[22]. Kashyap, A., And Stein, J., (1995) "The Impact Of Monetary Policy On Bank Balance Sheet" Carnegie-Rochester Conference Series On Public Policy, 42, 151-195

[23]. Kashyap, A., And Stein, J., (2000) "What Do One Million Observations Have To Say About The Transmission Of Monetary Policy" American Economic Review, 80, 1183-1200

[24]. Kishan, R., And Opiela, T., (2000) "Bank Size, Bank Capital And The Bank Lending Channel" Journal Of Money, Credit And Banking, 32, 121-141

[25]. Loening, J., Rijkers, B., And Soderbom, M. (2008) "Non-Farm Microenterprise Performance And The Investment Climate: Evidence From Rural Ethiopia" World Bank, Policy Research Working Paper Series, 4577.

[26]. Lulu, M., (2007) "Is There A Bank Lending Channel In Southern African Banking Systems? "African Development Review, 19(3), 432-461

[27]. Masha, I, Essien, M., Musa, D., Akpan, B., And Abeng, M. (2004) "Theoretical Issues In Financial Intermediation, Financial Markets, Macroeconomic Management And Monetary Policy". Financial Markets In Nigeria, Central Bank Of Nigeria Publication, 7 - 27.

[28]. Sichei, M., (2005) "Bank-Lending Channel In South Africa: Bank-Level Dynamic Panel Date Analysis" Department Of Economics Working Paper Series, 2005(10)

[29]. Punita, R., And Somaiya, K. (2006) "Monetary Policy: Its Impact On The Profitability Of Banks In India". Intermediate Business And Economics Research Journal, 5(3), 15-19.

[30]. Romer, C., And Romer, D., (1990) "New Evidence On The Monetary Transmission Mechanism Brookings Paper On Economic Activity 1/1990, 149-213

[31]. Schumpeter, J.A. (1911) "The Theory Of Economic Development". American Journal Of Economics And Sociology, 61(2)

[32]. Somoye, R. O. C And B. M., Ilo (2009) "The Impact Of Macroeconomic Instability On The Banking Sector Lending Behaviour In Nigeria". Journal Of Money, Investment And Banking, 7.

[33]. Uniamikogbo, S., And Enoma, A. (2001) "The Impact Of Monetary Policy On Manufacturing Sector In Nigeria". The Nigeria Economic And Financial Review, 3(2), 37-45

[34]. Van Den Heuvvel, S., (2005) "Does Bank Capital Matter For Monetary Transmission" Economic Policy Review, Federal Reserve Bank Of New York, 8, 161-172

[35]. Wrightsman, D. (1976) "An Introduction To Monetary Theory And Policy." New York: The Free Press

[36]. Were, M., And Nzomoni, J. (2012) "Assessing The Impact Of Private Sector Credit On Economic Performance: Evidence From Sectoral Panel Data For Kenya" International Journal Of Economics And Finance, 4(3)