

The Impact of Monetary Policy on Bank Credit Creation in Nigeria: (1980 – 2010)

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Abstract

This study attempts to assess the impact of monetary policy on bank credit creation in Nigeria. Using the Ordinary Least Square (OLS) method of econometric analysis, the study covers the period from 1980 to 2010. The results of the analysis indicate that there was a positive linear relationship between total credit creation and the explanatory variables consisting of total deposits and treasury bills rate while the reserve requirement ratio and interest rate had a negative relationship with total credit creation. Thus, any monetary policy by the monetary authority to control credit that emphasizes on reserve requirements could not be effective as the banks could afford to raise and keep substantial deposits as reserve contrary to the actions of the monetary authority. The study recommends that the Central Bank of Nigeria (CBN) should not rely too much on reserve requirement as a monetary policy on credit creation but should rather emphasis more on the monetary policy rate (MPR) that could affect the lending rate as well as the open market operations while commercial banks could increase credit creation by reducing lending rates through more cost effective strategies for sourcing of deposits to fund their credit creation as high lending rates would appear to reduce the demand for credit in Nigeria

Key Words: ‘Monetary Policy’, ‘Bank Credit Creation’, ‘Nigeria’

1.0 Introduction

The credit channel is one of the major transmission mechanisms of monetary policy through the instrumentality of the banking system. Consequently, the existence of such a transmission channel has major implications for monetary policy. First, marginal cost and earning considerations are not the sole factors relevant to investment and financing decisions, but additionally the availability and access to credit. Second, the overall effect of monetary policy on aggregate expenditure can no longer be completely characterized solely by a vector of price variables. It could as well depend on other factors, such as the propensity to supply funds, the average degree of substitution between different sources of funding, and the distribution of these substitution rates among economic agents. Third, the credit channel implies that the transmission process of monetary policy depends on the structure of the financial system. This means that structural changes in the financial sector could affect the monetary transmission mechanism (Worms, 2001).

Between 2000 and 2002, total credit to GDP in Nigeria increased from 38 percent to about 57.4 percent, even when the Central Bank of Nigeria increased its minimum reserve ratio from 14 percent to 16.5 percent in the same period. Although aggregate interest rate rose from 21.6 percent to 26.7 percent, yet it had no meaningful effect on total credit. Thus, this credit-to-GDP ratio in Nigeria appears to have been historically relatively insensitive to the credit channel in the monetary policy transmission mechanism when compared to other countries of the world. However, based on the assumption of informational imperfections in the financial markets, the credit channel asserts an active role on the supply of bank loans in monetary transmission (Worms, 2001).

Morgan, (1992) noted that an economic sluggish response to monetary policy is nonetheless understandable from the stand point of the credit view of monetary policy which posits that the force of monetary policy depends partly on the willingness of banks to lend and that on the contrary, the economy may remain sluggish notwithstanding government monetary policies that may be favorable to credit creation. Morgan (1992) contends that the credit channel usually magnifies the effects of monetary policy and that the weaknesses in the banking sector could partially reduce the impact of the channel in credit creation. The relevance and complexity of the debate on monetary policy and bank credit creation has made the topic to attract great attention from researchers and policy makers especially in developing countries. In Brazil, Souza, Sobrinho and Nukane (2002), assessed the empirical relevance of the credit channel by studying aggregate credit data from October 1996 to December 2001 period, concluding that bank credit works as a monetary transmission channel in Brazil. Using time series data, Bernanke and Blinder (1992), Gertler and Gilchrist (1993), and Kashyap et al. (1993) find various results while other researchers including Guender and Moersch (1997), Favero, Giavazzi and Flabbi (1999) and Kupper (2001) did not find empirical evidence in support of a credit channel as a significant transmission mechanism.

However, the Central Bank of Nigeria (CBN) report of 2005 shows that total credit to GDP fell from 49.8 percent in 2004 to 45.0 percent in 2005 despite the reduction of the minimum reserve requirement by the CBN from 15 percent to 13 percent during the period under review. Thus the Central Bank of Nigeria's report during that period negates research evidence in comparison to some other developing countries like Brazil on the debate on monetary transmission mechanism. It is against this background that this study seeks to examine the reaction of bank credit to monetary policy in Nigeria over a long period of time covered by this study (1980-2010).

1.1 Objectives of this study

The major objectives of the study are to empirically examine the reaction of total credit creation of commercial banks to monetary policy in Nigeria, analyze the credit channel theory as well as the monetary policy indicators that affect commercial banks' credit creation in Nigeria. The study shall also attempt to proffer suggestions towards enhancing the decision making process of the monetary authorities.

2.0 Literature Review

2.1 Monetary Policy

Monetary Policy is any measure taken by the Government to control the amount of money in circulation and the cost of credit, which is the rate at which money is borrowed. Anyanwu, (1997) states that Monetary Policy is a major economic stabilization weapon, which involves measures designed to regulate, and control the volume, cost, availability and direction of money and credit in an economy to achieve some specified macroeconomic policy objectives. Wrightman (1976) further emphasized that it is a deliberate effort by the monetary authorities to control the money supply and credit conditions for the purpose of achieving certain broad economic objectives. The ultimate goals of monetary policy are basically to control inflation, maintain a healthy balance of payment position in order to safeguard the external value of national currency and promote adequate and sustainable level of economic growth and development. These goals are achieved by controlling money supply in order to enhance price stability (low and stable inflation) and economic growth.

Ehrmana et al (2003), posits that loan demand should be positively related to economic activities, and negatively related to the loan nominal interest rate. However, Cukieman and Hercomitz (1989) contend that loan demand is positively related to inflation and further argue that firms make use of both money and bank loans to pay for working capital and that high inflation penalizes money held by firms and makes bank loans more attractive. Furthermore, Hashyap and Stein (1994, 1995) observe that banking firms may be subjected to the same sort of capital market imperfections like their non – financial counterparts (i.e., small and medium –sized firms). According to their view, if a bank lending channel is effective, the loan supply effects can be captured as follows; a monetary contraction should cause small banks to cut their supply by relatively more than large banks, reflecting the hypothesis that small banks are more likely to face higher costs in attracting non-deposit sources Kim (1999) examined whether the credit channel is the key monetary transmission mechanism in Korea, particularly following the experience of that country during financial crisis. The paper found convincing evidence of the practical importance of the credit channel in the aftermath of the financial crisis. Bank lending was found to play a significant independent role in amplifying the real effects of tightened monetary policy, which was implemented in response to the crisis.

Derberg and McDougall (1980, 400) observed that reducing the level of reserve requirements may not necessarily create a corresponding increase in the liabilities on the bank balance sheet, but there has been no consensus on whether greater credit could be created by reduction in reserve requirement or by open market operations.

2.2 Theories of Monetary Transmission Mechanism

Pruteanu (2004), states that a correct assessment of the monetary policy transmission mechanism is vital for understanding and foreseeing the effects of the monetary conditions on the real economy. However, the mechanism by which the monetary policy is transmitted to the real economy has been the topic of extensive theoretical and empirical research in western countries; still, the exact mechanism has not yet been completely unveiled, a situation which Bernanke and Gertler (1995) describes as a black box.

2.2.1 Transmission Mechanism

Transmission mechanism infers how a change in the money supply is channeled through particular models to influence real and nominal variables. Traditionally, the classicals used the quantity theory to give a direct and mechanical link between money and prices, while Keynes emphasized on an indirect mechanism whereby money affects the price level through interest rate (Dennis, 1981).

2.2.2 The Monetary View

Morgan (1992) explains the effects of lightening monetary policy in two stages. In the first stage, the Federal Reserve or the Central Bank pushes up market interest rates by reducing the supply of money. This stage begins when the Central Bank sells government securities to the public in exchange for cheques drawn on commercial banks in the economy. As the Central Bank debits the reserve accounts of these banks, reserves in the banking system fall relative to deposits.

2.3 The Credit Channel Theory

Bank credit creation could be affected by monetary policy via two closely related sub-channels. The bank balance sheet channels and the bank lending channels

2.3.1 Balance Sheet Channel: According to the balance sheet channel, an interest rate increase induced by monetary policy worsens the risk characteristics of potential borrowers by reducing the present value of assets used as collateral. Such a reduction may be caused by an increase in the discount rate applied to expect future payment and / or by a reduction in the expected payments via other transmission channels (eg the cost of capital and / or the exchange rate channel.). Since this argument relates to all forms of external funding, it also applies to bank loans. Banks may reduce their lending in periods of restrictive monetary policy since their expected losses from defaults could increase. A restrictive monetary policy may thus have a positive effect on loan demand – had there been increase in lending. In principle, however, this “perverse” effect should become less important over time since an adaptation of expenditures is then to be expected, resulting in a lower loan demand. This dependence of loan demand on internal funds is known as the “cash – flow effect” and is the most convincing explanation for the often found positive correlation between the interest-rate level and the rate of growth of the loan volume (Worms, 2001).

2.3.2 The Bank Lending Channel assumes restrictive monetary policy to reduce the liquidity of the entire commercial banking system or to make the procurement of liquidity associated with lending more costly. Typically, it is assumed that non-banks withdraw reservable deposits from banks because they re-organize their portfolios after a policy – induced interest rate increase (i.e money demand is assumed to decrease in response to a restrictive monetary policy). If this reduction in deposits cannot be neutralized vis – a – vis non-banks or by reducing assets other than bank loans, it will decrease a bank’s ability to grant loans i.e. monetary policy will change loan – supply.

2.4 Money and Credit Control in Nigerian Economy

There were two major phases in the conduct of Monetary Policy in Nigeria, the period before the introduction of Structural Adjustment Programme (SAP) in 1986, and the period since the introduction of Structural Adjustment Programme. In the first period, the Central Bank’s monetary policy framework placed emphasis on direct monetary policy control, while in the second period it relied, and is still relying, on indirect approach anchored on the use of market instruments in monetary management. In the current Nigeria setting, the success of Monetary Policy hinges crucially on the ability of the regulatory authority backed by the Government to monitor and implement the policies.

This is due to the critical role of the Government in the economy as the Government has continued to be the largest source of liquidity growth in the system.

2.4.1 Credit Control before Deregulation:

Udegbonam (1995) stated that the Nigerian financial sector, prior to August 1987, was characterized by a complex system of regulations and controls. This was largely because in Nigeria, as in most other developing countries, financial markets are rudimentary and argued that they cannot without appropriate regulatory and legislative controls provide the necessary environment for an effective monetary policy. Thus in pursuance of its monetary and credit control objectives in an environment where active security markets have not developed, the CBN adopted direct monetary control techniques and strategies which relied largely on three instruments: Interest rate controls, guidelines and quantitative ceilings on credit allocation and the issuance of stabilization security. The Central Bank of Nigeria sought to influence the amount of credit to various sectors of the economy by direct quantitative and sectoral control of bank lending through the so-called “credit guidelines” and by administrative control of interest rates. On many occasions stabilization securities were also used by the Central Bank of Nigeria as re-enforcement to these two instruments. The other instruments (special deposits, discount rate, and reserve requirement changes) were rarely used during this period.

2.4.2 Credit Control after Deregulation:-

Udegbonam (1997) stated that CBN has since begun to respond to the challenges of the new financial environment. In June 1993, it started to shift fully towards more market based control techniques which are commonly used in countries such as United States and Britain, with well- developed money and capital markets. Although the CBN has not, in the new approach, ignored the behaviour of credit aggregates, it appears, now to be focusing more attention on the behaviour of monetary aggregates and short-term interest rates. This is partly because, in the new environment, monetary aggregates, interest rates, and exchange rates, are increasingly becoming important indicators of aggregate economic activity and the price level. (Udegbonam, 1997).

The key direct monetary control instruments are Open Market Operation (OMO), Reserve Requirements and Discount Rate as well as the use of stabilization securities. Under the deregulated regime, market forces generally drive developments in interest rates though, subject to some degree, to the changes in the CBN’S Minimum Rediscount Rate (MRR) which is the nominal anchor rate, which drives other rates in the money market. Its variation generally signals (CBN’s intention to pursue a policy of monetary contraction or expansion. Specifically, the MRR is the minimum rate charged by the CBN when lending to commercial and Merchant Banks in the performance of its role as the lender of last resort. All things being equal, the higher the MRR, the higher the cost of funds (Nnanna, 2004).

2.4.3 Interest Rate Control

Interest rates were rigidly controlled at very low levels till the on- set of the deregulation in 1987. However, it is important to note that because of the phenomenal increase in the various rates of interest as the pace of deregulation increased, they were re-regulated in 1991, and again in 1994 fiscal year. In addition to the ceilings imposed on various rates such as deposit and loan rates, the Central Bank of Nigeria out rightly prohibited the payment of interest on demand deposits.

2.4.4 Credit ceilings and selective credit controls

Another important instrument of monetary control by the Central Bank was the direct quantitative control of bank credit through the issuance of credit guidelines in the form of imposition of aggregate and sectoral ceiling on credit. The major objective of the aggregate ceiling on bank lending was to avoid over expansion of credit and its attendant inflation. Both aggregate and selective credit control were undertaken to ensure that money supply and price level were under control. The sectoral credit ceilings, in addition, were aimed at encouraging investments in productive sectors of the economy. Under the limitations imposed by the credit guidelines, the banks were faced with excess demand for credits, as loan rates were often fixed below the equilibrium rates.

3.0 Theoretical Framework and Model Specification

In line with the studies by Takeda et al (2003), the model used in this study assumes that credit creation by banks is a function of available amount of money (or deposits), interest rate, the reserve requirements, bank rediscounts rate and treasury bills. The research method adopted in this study is the ordinary Least Square Regression method (OLS).

Hence the coefficient of each explanatory variable will be estimated by minimizing the errors of the time series data obtained. The use of this technique is based on the blue properties of the estimators, which are unbiasedness, efficiency and consistency. The test statistics shall the t-test statistics for ascertaining the statistical significance of the estimated coefficients using one (1) percent, five (5) percent and ten (10) percent respectively. The Durbin Watson (DW) test statistics is employed to test for the existence of auto –correlation among residuals, while the coefficient of determination (R^2) is to ascertain the percentage of contribution of the independent or explanatory variables. Finally, the F-statistic instrument is used to ascertain the overall significance of the equation.

3.1 Model Specification

The model which follows from Ehrmann et al (2003) and Takeda (2004) is of the form:

$$TCRD = X_1 + X_2 RESV - X_3 INT + X_4 DEP + X_5 TREBR + U \dots\dots (3.1)$$

Where:

A priori expectation

$X_2, X_4, X_5 > 0$, and $X_3 < 0$

TCRD=Total credits,

RESV= Reserve Requirement Ratio, INT=Lending Rate,

DEP=Total Deposits,

TREBR=Treasury Bills rate, U=Random variable

3.2 Interpretation of Results and Policy Implications of the findings

Regression Results

The dependent variable was total credits (In TCRD) and 27 observations used for estimation from 1980 – 2010.

Table 4.1

Variable	Coefficient	t-value
Intercept	1.61	1.31
InRESV	0.86	1.58
InDEP	1.09	4.86
InTREBR	1.53	3.92
InINT	-3.09	2.70

$$R^2 = 0.88, F(6,15) = 18.01, DW\text{-Statistic} = 1.92$$

Source: Authors' Estimation, 2012.

From the above table, which emanated from equation (3.1), we attempt to examine the joint impact of reserve requirement ratio, (RESV) lending rate (INT), total deposits (DEP) and treasury bills rate (TREBBR) on total credits (TCRD). It is apparent that a priori, the coefficients of all the variables have the correct signs. This is in conformity with theoretical expectations. This means that all the variables have positive relationships with bank total credit except the lending rate which is negative which is an indication that it has a negative relationship with bank total credit.

For the t-values of the coefficients of the regressors presented in the third column of table 4.1 above, it is only the reserve requirement ratio that did not pass its t-test at the 5 percent level of significance. Put differently, the reserve requirement ratio is not statistically significant at the 5 percent level of significance using the two-tailed test. For other independent variables such as total deposits, treasury bills and lending rate that passed their t-test at the 5 percent level of significance having 4.86, 3.92 and 2.70 respectively. These t-values were greater than the critical t-values of 2.09 using the 2 – tailed test. This is to say that these exogenous variables are statistically significant at the 5 percent level of significance. Essentially, total deposits, treasury bill rate and lending rate as monetary policy instruments have significant impact on bank credit creation while reserve requirement ratio has no significant impact on bank credit creation in Nigeria.

Taking a look at the explanatory power of the model using the coefficient of determination denoted as R^2 , the result showed that all the independent variables (reserve requirement ratio, lending rate, total deposits and treasury bill rate) were able to explain about 88 percent ($R^2 = 0.88$) of the systemic variations in total credits (TRCD) while about 12 percent cannot be explained by the independent or exogenous variables which was taken care of by the disturbance term represented by 'U' in equation 3.1.

For the overall goodness of fit of the model demonstrated by the F-value of 18.01, it passes its significance test at the 1 percent level of significance. This is identified when the calculated F was compared with the critical F-value of 4.32, thus the calculated F is greater than the critical F-value. This shows that there was a significant linear relationship between total credits and independent variables used in the equation. In addition, the Durbin Watson (DW) statistics of 1.92, however, suggested that auto-correlation was highly minimized and, therefore, we can make valid predictions with the results.

Finally, a unit increase in reserve requirement ratio will lead to about 8.6 percent increase in total credits, a unit increase in total deposits will lead to about 10.9 percent increase in total credits, a unit increase in treasury bill rate will result to about 15.3 percent increase in total credits while a unit increase in lending rate will lead to about 30.9 percent decrease or reduction in total credits.

4.0 Conclusion and Recommendations

From the foregoing, it may be concluded that reserve requirement ratio does not have a relatively significant relationship with total credit creation while interest rate, total deposits and treasury bills rate have a significant relationship with total credit creation in Nigeria during the period under review from 1980 - 2010. The implications of the findings include that a monetary policy by apex authorities that emphasizes on reserve requirement for credit control could not be relatively effective in Nigeria. Rather, monetary policies should explore other measures that bother on monetary policy rate (MPR), deposits generation by banks, treasury bills rate and lending rates. On the other hand, banks could create more credits by strategies that could reduce lending rates as a high lending rate would reduce the demand for credit.

References

- Anyanwu, J. C. (1997), *Monetary economics theory, policy and institutions*. Hybrid Professional Publication pp. 210 - 242
- Barnanke, B and M. Gertter (1995), "Inside the black box: The credit channel of monetary policy transmission: The Journal of Economic Perspective, 9(4) 27-48.
- Central Bank of Nigeria (CBN) Statistical bulletin: various issues.
- Central Bank of Nigeria (CBN) Circular No. 27 of 1993
- Central Bank of Nigeria (CBN) Economic and Financial Review: various issues.
- Dennis, G.E. (1981), "Monetary Economics" Longman London and New York/
- Dernberg, T. F. and D.M. McDougall (1980), *Macroeconomics: The measurement, analysis and control of aggregate economic activities*
- Fuerst, T. S. (1992), "Liquidity, loanable funds and real activity" *Journal of Monetary Economics*, 29, pp 3-24.
- Gertter, M and S. Gilchrist (1993), "The role of credit market imperfections in the monetary transmission mechanism: Arguments and evidence. *Scandinavian Journal of Economics*, 95 (1): 43-64
- Iyoha, M.A. and O.T. Ekanem (1994), *Introduction to econometrics*, March Publishers Benin City, Nigeria
- Kashyap, A.J. Stein and D. Wilcox (1993), "Monetary policy and credit conditions: Evidence from the composition of external finance" *American Economic Review*, 83, pp78-428
- Li, V. E. (2000), "Household credit and the monetary policy." "The monetary transmission mechanism," *Journal of Money, Credit and Banking* 32, pp.335-356.
- Morgan, P.D. (1992), "Are bank loans a force in monetary policy? Federal Reserve Bank of Kansas City, *Economic Review*, Second Quarter.
- Olugbenga, S. O. and A. P. Olakunle (1998), "Bank performance and supervision in Nigeria: Analyzing the transition to a deregulated economy," *African Economic Research Consortium*.
- Pruteanu (2004), *The role of banks in the Czech monetary policy transmission mechanism*. Working Paper Series CBN (Czech) National Bank)
- Takeda, T. D. Rocha and M. I. Nakane (2005), *The reaction of bank lending to monetary policy in Brazil* "Research Department Central Bank of Brazil. Economic Department, Sao Paulo University.
- Udegbumam, R. I. (1995), "Financial deregulation and monetary policy in Nigeria: An examination of the new operating techniques". *The Nigeria Economic and Financial Review* Vol. 1
- Udegbumam, R. I. (2002), "Monetary and financial policy" in Iyoha, M.A. and C.O. Itsede (ed) "Nigerian economy, structure, growth and development. Mindex Publishing, Benin City.
- Worns, A. (2001), "Monetary policy effects on bank loans in Germany: Discussion Paper 17/01, Economic Research Centre of the Duetsche Bun Des Bank.