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Implications of Monetary Policy for Banks' Assets in Nigeria

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Abstract

Monetary policy is implemented with the main objective of economic stability and banks are the primary channel through which this policy influences economic variables. It is argued that the extent to which monetary policy goals are attained is predicated on the responsiveness of banks to it. The study therefore investigates the implications of monetary policy for Nigerian banks. To ascertain the influence pattern of monetary policy on banks, the study uses monetary policy rate and lending rates as monetary policy proxies. While banks asset is represented in the model by aggregate bank lending. Correlation and regression analyses were used to analyze data. The correlation result showed a negative relationship between aggregate bank lending (AGL), monetary policy rate (MPR), lending rate (LDR) and inflation rate (IFR). The regression analysis result confirms this, as monetary policy rate (MPR) relates negatively with loans in Nigeria. This means that the raising of the MPR and the attendant increases in lending rates will deter borrowers. The negative relationship between AGL and IFR, which is contrary to expectation, denotes the existence of a weak link between bank loans and the general market prices. The study concludes that monetary targeting could be effective in Nigeria in influencing bank lending but plays little role in inflation control and suggests refocusing on inflation targeting.

Keywords: Monetary policy rate, lending rate, inflation, bank loans, loan portfolio

1. Introduction

Monetary Policy (MP) refers to a combination of measures designed to regulate the supply and cost of money in an economy in relation with the expected level of economic activity. It is the use of (direct and indirect) monetary instruments at the disposal of the monetary authorities to achieve internal and external balance (macro-economic stability). Since the establishment of the Central Bank of Nigeria (CBN) in 1959, it was saddled with the objectives of price stability, high and sustainable economic growth, balance of payment equilibrium and promotion of employment opportunities (Acha, 2008).

The long-standing question here is; how does the public react to the monetary policy activities of the CBN for instance an increase in the monetary policy rate(MPR)i.e. the responsiveness of bank customers to an increase in MPR and the attendant implications of such on the asset of the bank (the loan portfolio and other risk assets of banks). Ordinarily, one will assume or tend to reason that increase in MPR (which automatically increases the rate at which bank customers borrow) will discourage borrowers from borrowing and hence hampers investment potentials of the people which consequently reduces employment opportunities and lowers general standard of living of people. Considering that the wider macroeconomic objectives of monetary policies cannot be achieved in the absence of banks, this paper therefore investigates the responsiveness of banks' assets to monetary policies.

Theoretical Overview

Ahmed, 1992 defined monetary policy as a process of controlling the cost and availability of credit through the financial market. Buttressing this, Ojo, 1993 said that monetary policy is the "combination of measures designed to regulate the value, supply and cost of money in an economy in consonance with the level of economic activity." We can infer from the foregoing that monetary policy refers to approaches adopted by monetary authorities in our case the Central Bank of Nigeria (CBN) to manipulate money supply in order to attain specific economic objectives.

Some economic objectives which monetary policies are set to pursue are real growth of GDP, inflation control and healthy balance of payment (Oke, 1993). To this Akatu, 1993 added expansion of money and credit in a

manner consistent with long run growth of the economy at stable prices. Ojo, 1993 captured all these when he opined that the main aims of monetary policy are basically to control inflation, maintain a healthy balance of payment position of the country in order to safeguard the external value of the national currency and promote adequate and sustainable level of economic growth and development.

Monetarists' synthesis of these economic problems concludes that demand is at the centre of it. Inflation they attributed to excessive demand while inadequate demand to them was the cause of depression. Since demand is a function of availability of money, to them inflation is a monetary phenomenon (Esia, 2005, Colander, 2004).

To this regard monetarists imbibed the quantity theory of money, which implies that a direct relationship exists between the stock of money in circulation and an economies' output.

$MV = PQ$ ---------- equ. I

Where:

M = Quantity of Money

V = Velocity

P = Price Level

Q = Quantity of real goods sold (i.e. output)

The quantity theory of money stated above as equ. (I) was also utilized by monetarists to deduce their theory that money stock determines price level (inflation). By assuming velocity of money (V) and output (Q) as constant:

$M(V) = P(Q)$ ---------- equ. II

They concluded that a change in M will lead to proportionate change in P i.e. $\% \Delta M = \% P\Delta$

It is based on the above that the monetarists drew the conclusion that "too much money in circulation could over-heat the economy and cause inflation and too little money will depress an economy" (Esia, 2005, Samuelson, 2009). The implication of this to the monetarists is that money stock can be tinkered to push an economy in a desired direction.

Further examination of the equation of change reveals that if the output of an economy is not held constant or at full employment as assumed by this theory direct relationship exists between it and money stock. That is:

$MV\uparrow = P\uparrow Q\uparrow$ ---------- equ. III

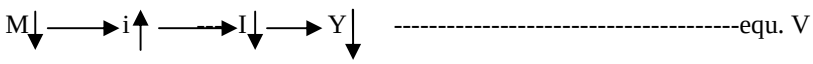
This shows that an increase in the quantity of money will cause prices, and output to increase. This is the crux of the monetarists' dilemma as it is the economists' wish to curtail inflation and increase output but with this relationship, it therefore follows that a policy contracting money supply in order to check inflation may succeed in curbing price increases but will also lead to the reduction in output in the short run (Acha, 2008, Colander, 2004, Samuelson, 2009, Akanji ,2012, Acha,2009).

This shows that a certain level of inflation is desirable and may be increasing for economic growth. Drawing a line between the desirable rate of inflation and the point it begins to act as a disincentive to investment and output is another dilemma which monetarists' economic prescriptions pose. This predicament is further compounded for countries like Nigeria which, though obviously operating under full employment seeks growth devoid of excessive inflation. It also raises questions of ability of increase in money supply to induce output growth (despite generating inflation) in the face of lack of infrastructure, requite technology and other capital goods as evidenced in Nigeria.

Colander, 2001 showed that an increase in money supply will decrease interest, increase investment and income, that is;

$M\uparrow \longrightarrow i\downarrow \longrightarrow I\uparrow \longrightarrow Y\uparrow$ ---------- equ IV

On the other hand, when brakes are applied on money supply interest rate will increase, investment and income will reduce.



----------equ. V

This further confirms the relationship between money supply, price and output. Increase in money supply as shown in equ. IV leads to increase in investment which invariably implies output increase. It also leads to decrease in real interest rate signifying increase in inflation.

Channels of Monetary Policy Impact

True to monetarists prescriptions, monetary policy instruments do not directly achieve their goals but work through a circuitous route of intermediate variables to do this. Direct monetary policy targets include monetary base, narrow money supply (M_1) broad money supply (M_2) and banks assets and liabilities [Onoh, 2002, Anyanwu and Oaikhenam, 1995, Bernake and Blinder 1992, Bernake and Blinder 1988). Monetary base (MB) is made up of total currency outside banks (C) and total banks' vault cash and their reserves held by the central bank. Narrow money M_1 comprises of currency plus demand deposits, broad money M_2 can be arrived at by adding up M_1 and quasi money (i.e. time and savings deposits).

In implementing monetary policy, what the CBN does is to target these direct variables with the intention of influencing intermediate policy targets such as interest rates, inflation and credit availability which ultimately leads to the attainment of the policy goals of increased productivity, enhanced GDP, full employment, price stability, better per capita, etc (Uchendu, 2000, Mishin, 1995, Mishin, 1996).

For instance, reserve requirement operate by increasing or reducing money supply. When the CBN intends to reduce money, it increases the reserve requirements. By this, banks will now have to sterilize more of their deposit liabilities with the apex bank thereby reducing the monetary base and their ability to create money. This will in turn reduce credit availability and drive up interest rates. If on the other hand it wants to expand credit and reduce interest rates, the CBN reduces the reserve requirement (Taylor, 1995). The rate at which the CBN lends to bank, that is, the Monetary Policy Rate (MPR) can also be used to influence the availability and cost of credit. An increase in this rate reduces availability and increases cost and vice versa. Finally, Open Market Operation (OMO) which is the major tool of Nigeria's indirect monetary policy regime also operates by expanding or contrasting money supply [Acha, 2010, Taylor, 1995, Clarida and Gertler, 2000, Cottarelli and Kourelis, 1994, Hicks, 1937). When the CBN is pursuing an expansionary monetary policy, it buys securities from the financial market thereby injecting funds and increasing money supply. On the other hand, the CBN achieves a contradictory monetary policy by selling securities in the financial market (Olawale and Abu, 2008, Obstfeld and Rogoff, 1995).

Monetary Policy in Nigeria

Formulating and implementing monetary policy was one of the functions that were bestowed on the CBN at inception in 1959. From then until 30th June 1993, the CBN adopted direct monetary policy instruments to execute this responsibility. Some direct control measures used during this regime include direct interest regulation (specification of lending and deposit rate for banks), credit ceiling and floors, stabilization securities and sectoral allocation of credit among others (Acha, 2009, Ogwunma, 1996). Certain shortcomings were identified with this approach that led to its abandonment. Some of these are: allocative inefficiency, reduction in competition, increased moral hazard as banks intentionally violated these rules, etc (Tobin, 1970, Ezema, 2009).

As direct monetary stance of the CBN gave way, indirect monetary policy instruments were adopted to replace them. The policy instruments that became prominent from 1993 are reserve requirement, minimum re-discount rate (MRR) and Open Market Operations (OMO).

By reserve requirement banks are obliged to sterilize certain portion of their deposit liabilities by depositing them as cash with the CBN. The minimum re-discount rate now known as the Monetary Policy Rate (MPR) on the other hand is the rate at which the CBN is prepared to lend banks in carrying out its responsibility as lender of last resort. Finally, OMO involves the discretionary power of CBN to purchase or sell securities in the financial market in order to influence the volume of money in circulation (Ojo, 1993, Esia, 2005, Colander, 2001).

3. Methodology

The study relies on secondary data obtained from the Central Bank of Nigeria's Statistical Bulletin. Data obtained include those on bank lending rate, monetary policy rate, private sector investment and inflation. Timeframe of thirty years (1981-2010) was adopted for this study.

In analyzing data, correlation and regression analysis were used..

The following model was specified for the analysis:

AGL = f (MPR, PSI, LDR, IFR)

$= X_o + X_1MPR + X_2PSI + X_3LDR + X_4IFR + e$

Where:

AGL = Aggregate Bank Loan
MPR = Monetary Policy Rate
PSI = Private Sector Investment
LDR = Lending Rate
IFR = Inflation Rate

Data Analysis

Table 1: Correlation Matrix

	AGL	MPR	PSI	LDR	IFR
AGL	1.000000				
MPR	-0.428317	1.000000			
PSI	0.946720	-0.399883	1.000000		
LDR	-0.019316	0.680454	0.008476	1.000000	
IFR	-0.281314	0.325257	-0.311777	0.284052	1.000000

The correlation result indicates that aggregate bank loan (AGL), in line with apriori expectations, correlated negatively with monetary policy rate (MPR) and lending rate. This implies that increases in MPR will lead to reduction in lending. This bears out with theory as increased MPR is expected to engender interest rate increase which in-turn will discourage borrowing. The same argument holds for lending rate (LDR), making the observed negative relationship between it and AGL in line with theoretical postulations.

Negative relationship is also observed to exist between AGL and inflation. This is interpreted to mean that inflation, which proxy's instability in the model discourages bank borrowing. It also implies that increase in bank lending which ordinarily should be inflationary does not do so in Nigeria. A possible explanation to this is that since Nigeria is cash based economy most of the currencies in circulation are outside the banks making changes in bank lending of little consequence in inflation control. Finally, AGL was noted to relate positively with private sector investment (PSI). In fact, a very high positive correlation of approximately 0.95 was recorded; an indication of positive effect bank lending has on investment.

Table 2: Regression Result

	A	MPR	PSI	LDR	IFR
AGL	232778.2	-47970.62	5.167889	10761.28	3494.38
SE	624467.3	59355.17	0.442367	47013.79	9062.79
t-statistic	0.373	-0.808	11.68	0.229	0.386
Probability	0.71	0.43	0.00	0.82	0.70

R^2	=	0.90
Adjusted R^2	=	0.88
F – Statistic	=	56.38
Probability (F – Statistic)	=	0.00
Durbin – Watson Statistic	=	1.13

The regression shows a reasonable fit with the independent variables explaining 90% of variations in the dependent variable. It further reveals that the result is significant going by the probability (F-Statistic) of 0.00. This result also confirms the correlation result of a negative relationship between AGL and MPR and positive relationship between that between AGL and PSI. It differed with respect to the relationship between AGL, LDR and IFR. This could be attributed to the weak nature of the earlier observed results.

Policy Implications/Conclusion

The observed relationships between the various variables have several policy implications. The negative relationship existing between AGL, MPR, LDR and IFR suggest that monetary policy instruments in Nigeria can be effective in achieving the goal of economic stability for which it is pursued. Since MPR and LDR negatively relates with AGL, the monetary authorities can control the availability of credit by adjusting the MPR. An upward adjustment in the MPR will force the AGL down and vice versa.

If monetary authorities and government desire to increase private sector investment in the economy, the positive relationship existing between AGL and PSI implies that these authorities should pursue policies that will increase bank lending. Therefore, liberalization of bank lending by employing expansionary monetary policy will rub off positively on investment with other attendant benefits such as improved employment of both human and other resources. The relationship between AGL and IFR could be deduced to imply that the expectation that contraction of bank lending, for instance, will lead to increased interest rates, discourage borrowing, contract the economy and curtail inflation does not hold in Nigeria, a possible explanation being the size of the informal sector especially with regards to the amount of money outside the banking system, which may have greater influence on price than bank loans. This implies that economic stabilization efforts must take cognizance of the informal sector to be effective. The results of this study generally lead to the conclusion that monetary policy has implications for banks' assets and that its effect on economic stabilization in Nigeria is marginal.

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Appendix 1: Variables used in Analysis

YEARS	AGL	MPR	PSI	LDR	IFR
1981	8,582.9	6.00	334.7	7.75	21.42
1982	10,275.3	8.00	290.0	10.25	7.16
1983	11,093.9	8.00	264.3	10.00	23.22
1984	11,503.6	10.00	360.4	12.50	40.71
1985	12,170.2	10.00	434.1	9.25	4.67
1986	15,701.6	10.00	887.4	10.50	5.39
1987	17,531.9	12.75	6,805.9	17.50	10.18
1988	19,561.2	12.75	4,330	16.50	56.04
1989	22,008.0	18.50	12,258.6	26.80	50.47
1990	26,000.1	18.50	4,250.8	25.50	7.50
1991	31,306.8	14.50	6,321.2	20.01	12.70
1992	42,736.8	17.50	51,314.9	29.80	44.81
1993	65,665.3	26.00	29,283.3	18.32	57.17
1994	94,183.9	13.50	22,025.7	21.00	57.03
1995	144,569.6	13.50	70,155.6	20.18	72.81
1996	169,437.1	13.50	99,235.7	19.74	29.29
1997	385,550.5	13.50	105,666.9	13.54	10.67
1998	272,895.5	14.31	80,111.5	18.29	7.86
1999	322,764.9	18.00	91,776.8	21.32	6.62
2000	508,302.2	13.50	167,031.3	17.98	6.94
2001	796,164.8	14.31	224,952.6	18.29	18.87
2002	954,628.8	19.00	250,014	24.85	12.89
2003	1,210,033.1	15.75	281,944.1	20.71	14.03
2004	1,519,242.7	15.00	271,765.6	19.18	15.01
2005	1,976,711.2	13.00	770,228.18	17.95	17.85
2006	2,524,297.9	12.25	984,812.28	17.26	8.24
2007	4,813,488.8	8.75	1,091,928.21	16.94	5.38
2008	7,799,400.1	9.81	1,128,700.95	15.14	11.60
2009	8,912,143.1	7.44	1,344,754.28	18.36	11.50
2010	7,706,430.5	6.13	1,462,315.84	17.59	13.90

Source: Central Bank of Nigeria Statistical Bulletin, 2010.