

Money Supply, Foreign Exchange Regimes And Economic Growth In Nigeria.

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Abstract

The study empirically examines the effect of money supply, foreign exchange on Nigeria economy, in line with the objectives of this study, secondary data were obtained from central bank of Nigeria statistical bulletin covering the period of 1988 to 2010. In concluding the analysis, multiple regressions were employed to analyze data on such variables Gross Domestic Product (GDP), Narrow Money, Broad money, exchange rate and interest rate were all found have significant effects on the Economics Growth with the Adjusted R^2 of 0.973 showing that about 97.3% variation in the GDP from 1988 to 2010 is due to NARM. Following the outcome of this study, it is therefore concluded that the growth in money supply was attributed to credits extended by the deposit money banks to the private sector. It is order to improve economic growth, it is recommended Nigeria Banks should be committed to the mission of price stability as well as improving the regulatory and supervisory frameworks to secure a strong financial sector for efficient intermediation.

Key words; *Money supply; CBN; exchange rate; Narrow money; Broad money; Nigerian Economy;*

1. Introduction

The relationship between money supply and economic growth has been receiving increasing attention than any other subject matter in the field of monetary economics in recent years. Economist differ on the effect of money supply on economic growth, while some agreed that variation in the quantity of money is the most important determinant of economic growth, and that countries that devote more time to studying the behaviour aggregate money supply rarely experience much variation in their economic activities (Harding and Pagan 2001). Others are skeptical about the role of money or gross national income. Financial markets start growing as the economy approaches the intermediate stage of growth process and develop once the economy becomes matured (Kuttner 2001). This connotes that economic growth stimulate increased financial developments. According to Dedolab and Lippi (2000)), there may not be possibility of economic growth without an appropriate level of money supply, credit and appropriate financial conditions in general.

Evidence in the Nigerian economy has shown that since the 1980's some relationship exist between the stock of money and economic growth or economic activity. Over the years, Nigeria has been controlling her economy through variation in her stock of money. Consequent upon the effect of the collapse of oil price in 1981 various methods of stabilization ranging from fiscal to monetary policies were used. Interest rates were fixed and these were said to be beneficial to big borrower farmers. The output development and other economic growth process (via interest rate deregulation) in the Nigerian economy calls for considerable test of the validity of Friedman (1963) work on the Nigerian economy. The economies of all the countries of the world are linked directly or indirectly through asset and goods markets. This linkage is made possible through trade add foreign exchange. The price of foreign currencies in terms of a local currency (i.e foreign exchange) is therefore important to the understanding of the growth trajectory of all countries of the world. During the recent period there has been an increasing interest in understanding relationship between exchange rate regimes and countries macro economic performance. It is commonly suggested that alternative exchange-rate regimes are neither related to different theoretical view about the workings of the economic system nor to different schools of economic thought. The consequences of substantial misalignments of exchange rates can lead to output contraction and extensive economic hardship. Moreover, there is reasonably strong evidence that the alignment of exchange rates has a critical influence on the rate of growth of per capital output in low income countries. (Isard 2007).

Nigeria, like many other low income open economies of the world, has adopted the two main exchange rate regimes for the purpose of gaining internal and external balance. The arguments and conditions for and against each of the regime is clearly given that they are all aimed at maintaining stability in exchange rates. Direct administrative control exchange rate policy was used to manage Nigeria's foreign exchange from independence in 1960. The country changed to a market regulated regime in 1986 for obvious reasons. Nigeria operates various organized market arrangement for selling and buying the foreign exchange. The country has and is still experimenting with various market arrangements, first in 1986, it chose to operate the Second Tier Foreign Exchange Market (SFEM) on an auction basis. More than two decade now after the introduction of the flexible exchange regime, Nigeria has operated several variants of the auction system (Auction system, Dutch Auction system, Wholesale Dutch Auction System) towards determining the exchange rate of naira to US dollar.

1.2 Statement of the problem

A critical requirement for a freely floating exchange rate regime is the absence of any form of economic rigidity. The Nigerian economy is characterized by structural rigidities and bottleneck. Most of our exports and imports are characterized by inelasticity either on the demand supply side or both. The Nigerian economy is import dependent, thus pressure on forex demand will inevitably create the alternative market, hence different rates. Non oil export is under-reported and proceeds are hardly repatriated into the country, thus compounding the supply rigidity. The guidelines of the CBN on the purchase of foreign currency are often cumbersome, causing some frustrated potential foreign exchange users to patronize the parallel market causing a gap between supply and demand for foreign exchange.

1.3 Objectives the study

The main objective of this article is to examine empirically the impact of money supply and exchange rate on economic growth of the Nigerian economy over the period 1988 to 2010 using a comprehensive set of empirical tests. The objectives are broken down into the following specifics:

- (i) to analyse the effect of money supply on the economic growth.
- (ii) to investigate the effect of exchange rate on Nigeria economy.
- (iii) to assess effect of money supply on interest rate.
- (iv) to determine how central bank control the money supply in Nigerian economy.

2. Literature Review

2.1 Money supply in Nigeria

Money supply is the amount of money within a specific economy available for purchasing goods or services. For the purposes of this paper, the broad definition money supply (M2+) is adopted which includes currency in circulation, demand deposits, quasi money and foreign currency deposits. The money creating activities of the deposit money banks impact directly on money supply and given that the central bank is responsible for controlling money supply in an economy, it is important to evaluate the role of these banking institutions on the convergence process (West African Monetary Agency (WAMA), 2009). According to Anyanwu (1993), money supply is the total amount of money (e.g. currency and demand deposits) in circulation in a country at any given time. Currency in circulation is made up of coins and notes, while demand deposits or current account are those obligations which are not related with any interest payment and accepted by the public as a means of exchange drawn without notice by means of cheque. The stock of money can be measured in any given time in an economy. There are two criteria employed in measuring money supply. The first criteria define the stock of narrow money (usually designated by M1) as currencies and coins in circulation in the hands of the non-banking public and the demand deposit (of the non-banking public) with commercial bank (Ajakaiye, 2002).

Money supply also called Money Stock could be used to refer to the amount of money in the hands of the non-bank public at a point in time and the some balances in commercial banks (Umeora 2010). There are several ways of measuring such an amount (also called monetary Aggregates) but each includes Currency in Circulation (c) Plus Demand Deposits (DD). Demand Deposit refers to balances in current accounts of customer's withdrawable by cheque. The Central Bank of Nigeria (CBN) as well as public and private analysts shows interest in the growth of Money Supply because of the impact it is believed to have on real economic activities and the general price level (P). Money supply is considered an important instrument for controlling inflation. Economists believe that growth in Money Supply will lead to inflation if demand for money is stable so that increase in Money Supply is not met by equal increase in demand. Changes in Money can be inflationary or deflationary. When the Central Bank expands Money Supply, inflation occurs and when it reduces money supply deflation occurs. Central Bank's expansionary and concretionary policy is carried out through the

Fractional Reserve Banking which enables Commercial Banks to create money by credit expansion (Umeora 2010).

Asogu (1998) examined the influence of money supply and government expenditure on Gross Domestic Product. He adopted the St Louis model on annual and quarterly time series data from 1960-1995, he finds money supply and export as being significant. This finding according to Asogu (1998) while examining the interaction between money and output in Nigeria between the periods 1960 to 1995, the model assumed the irrelevance of anticipated monetary policy for short run deviations of domestic output from its natural level. The result indicated that unanticipated growth in money would have positive effect on output. A clear examination of the above shows that there is no general agreement on the determinant of economic growth in Nigerian economy. Findings of Asogu (1998) showed that there is a clear relationship between money and economic growth. In the late 1970's and early 1980's a number of central banks world-wide adopted monetary targets as a guide for monetary policy. Monetary targeting is an attempt by central banks to describe or determine the optimum money stock that will yield the desired macroeconomics objectives.

For the central bank of Nigeria, the primary objective in its conduct of monetary policy is to maintain a stable price level that supports sustainable economic growth and employment. While other central banks adopted numerical inflation or nominal GDP targets as guides for monetary policy since the 1980's and 1990's because financial market innovation and deregulation rendered monetary aggregates less reliable policy guides, the CBN did not deviate from the conventional monetary aggregate as the appropriate intermediate target. An implicit assumption with respect to this choice is that the intermediate target chosen is measurable, controllable and predictable in addition, it is assumed that the money demand function is stable in the conduct and implementation of monetary policy. This is very important because the money supply and as a way of manipulating the interest rate and reserve money for the purpose of controlling the total liquidity in the economy and for controlling inflation rate.

2.2 Monetary Policy in Nigeria

Monetary policy refers to the combination of measures designed to regulate the value, supply and cost of money in an economy, to match with the level of economic activities. It can also be described as the act of controlling the direction and movement of monetary policy and credit facilities in pursuance of stable price and economic growth in an economy; CBN (1992). In contemporary economies, the central bank is the authority with the mandate of manipulating monetary policy; through monetary policy tools, to achieving desired macroeconomic objectives which includes; the achievement of price stability with respect to both domestic and external prices. In the same vein uses inflation rate to track movement in the domestic price while exchange rate policy are used as tool in ensuring external stability thereby enhancing export performance in the economy according to Neaime (2008). The CBN uses monetary policy in order to maintain price stability. Hence, price stability occurs when goods and services in general, are not getting rapidly more expensive (that is inflation) or less expensive (that is deflation). In addition, exchange rate policy impacts on the outcome of stabilization measures and debt management strategies in developing countries which includes Nigeria (Busari and Olayiwola 1999).

According to Oluwole and Olugbenga (2012), the overriding objective of monetary policy is price and exchange rate stability. The monetary authority's strategy for inflation management is based on the view that inflation is essentially a monetary phenomenon. Because targeting money supply growth is considered as an appropriate method of targeting inflation in the Nigerian economy, the CBN chose a monetary targeting policy framework to achieve its objective of price stability with the broad measure of money (M2) as the intermediate target, and the monetary base as the operating target, the CBN utilized a mix of indirect (market-determined) instrument to achieve it monetary objectives. These instruments included reserve requirements, open market operations on Nigerian Treasury Bills (NTBs), liquid asset ratios and the discount window (IMF report 2003).

The CBN focus on the price stability objectives was a major departure from past objectives in which the emphasis was on the promotion of rapid and sustainable economic growth and employment. Prior to 1986, the CBN relied on the use of direct (non market) monetary instruments such as credit ceilings on the deposit money of banks, administered interest and exchange rates, as well as the prescription of cash reserves requirements in order to achieve its objective of sustainable growth and employment. During this period, the most popular instruments of monetary policy involved the setting of targets for aggregate credit to the domestic economy and the prescription of low interest rates with these instruments, the CBN hoped to direct the flow of loanable funds with a view to promoting rapid economic development through the provision of finance to the preferred sectors of the economy such as the agricultural sector, manufacturing sector and residential housing.

During the 1970's the Nigerian economy experienced major structural changes that made it increasingly difficult to achieve the aims of monetary policy. The dominance of oil in the country's export basket began in the 1970's. For example, in 1970, the share of oil revenue in total export value was about 58%, and this increased to over 95 % during the 1980's, the increased revenue from oil to the government led to a

rapid increase in Nigeria's external reserves in the 1970's. Furthermore, the rapid monetization of the increased crude oil receipts resulted in large injections of liquidity into the economy, which induced rapid monetary growth. Between 1970 and 1973, government spending averaged about 13% of GDP, and this increased to 25% between 1974 and 1980. This rapid growth in government spending came not from increased tax revenues but the absorption of oil earnings into the fiscal sector, which moved the fiscal balance from a surplus to a deficit that averaged about 2.5% of GDP a year. This new era of deficit spending led the government to borrow from the banking system in order to finance the domestic deficit. At the same time, the government was saddled with foreign deficits, which had to be financed through massive foreign borrowing and the drawing down of external reserves. To reverse the deteriorating macroeconomic imbalances (declining GDP growth, debilitating debt burden, increasing fiscal deficits, rising unemployment rate, and high incidence of poverty), the government embarked on austerity measures in 1982. The austerity measures was successful judging by the fall in inflation rate to a single digit, the significant improvement in the external current account to positions of balance, and the 9.5% growth in real GDP in 1985. However, these improvements were transitory because the economy did not establish a strong base for sustained economic growth.

2.3 The Effect of Money Supply on Nigerian economy

Holod (2000) investigates the identified vector autoregression to model the relationship between CPI, money supply and exchange rate in Ukraine. The results show that exchange rate shocks significantly influence price level behaviour. Further, the study also found that money supply responds to positive shocks in price level. The study contributes to the sizable literature on IT using overly sophisticated vector error correction model with complex identification structure. There is however an element of data mining in the generation of impulse response functions. According to Umeora (2010), Money Supply is the life wire of all economic activities and so has powerful effects on the economic life of any nation. An increase in Money Supply puts more money in the hands of producers and consumers and thereby stimulating increased investment and consumption. Consumers increase purchases and business firms respond to increased sales by ordering for more raw materials and other resources to achieve more production, the spread of business and capital goods. As the economy goes buoyant, Stock Market prices rise and firms issue more equity and debt instruments. As the Money Supply expands, prices begin to rise, especially if output growth reaches full capacity. Lenders insist on higher interest rates to offset expected decline in purchasing power over the life span of their loans. Opposite effects occur when the Money Supply falls or when there is decline in its growth rate, economic activities decline and disinflation (reduced inflation) or deflation (falling price) results.

The central bank of Nigeria (CBN) takes a number of monetary policy decisions, including a change in the level of money supply (M2), the Minimum Rediscount Rate (MRR), or a change in the exchange rate. The central bank defines money supply in two ways: narrow and broad money i.e M1 and M2, there is excess money supply when the amount of money in circulation is higher than the level of total output of the economy. When money supply exceeds the level the economy can efficiently absorb, it dislodges the stability of the price system, leading to inflation or higher prices of goods. When the CBN changes the level of money supply, it does so through the control of the base money. Base money is made up of currency and coins outside the banking system plus the deposits of banks with the central bank. If the central bank perceives that there is too much money in circulation and prices are rising (or there is potential pressure for prices to rise), it may reduce money supply by reducing the base money. To reduce the base money, the central bank sells financial securities to banks and the no-bank public so as to reduce the ability of deposit money banks to create new money. The central bank can reduce the money supply by also raising the cash reserve deposits that banks are required to hold with the central bank. The larger the deposit balances on bank balance sheet, the higher their ability to create more money. Central bank monetary policy therefore, targets the growth in those deposit balances so as to control the expansion in money supply which could precipitate price distortions.

Canetti and Greene (2000) separated the influence of monetary growth from exchange rate changes on prevailing and predicted rates of inflation. The sample covers ten African countries: The Gambia, Ghana, Kenya, Nigeria, Sierra-leone, Somalia, Tanzania, Uganda, Zaire, and Zambia. Using the Vector autoregression analysis, they suggest that monetary dynamics dominate inflation levels in four countries, while in three countries; exchange rate depreciations are the dominant factor. Chimobi and Uche (2010) examined the relationship between money, inflation and output in Nigeria covering the period of 1970 to 2005. Using co-integration and granger-causality test analysis, the study revealed no existence of a co-integrating vector in the series used. Money supply was seen to granger cause both output and inflation. The study also found empirical support in context to the money-prices-output hypothesis for Nigerian economy, M2 have a strong causal effect on the real output as well as on prices. This suggests that monetary stability can contribute towards price stability in the Nigerian economy since the variation in price level is mainly caused by money supply, the study concluded that inflation in Nigeria is to a much extent a monetary phenomenon.

A reduction in money supply affects the ability of banks to create new money through giving loans to their customers. In this way, the central bank could be said to be pursuing a contractionary monetary policy. When investors cannot get new loans to expand their investments, it reduces the level of total output in the economy. A reduction in output affects the level of employment and prices as less money is available for purchasing goods. In this way, prices remain stable or fall. The central bank can also pursue an expansionary monetary policy when it reduces the cash reserve ratio and by securities from the open market. In this case, the reverse of the analysis above holds.

Omotor (2008) examined the impact of price response to exchange rate changes in Nigeria covering the period of 1970 to 2003 and using the vector error correction model (VEC) and slope-dummy methodology. The study showed that exchange rate and money supply aggravated inflation in Nigeria and suggested that a stable, consistent and complementary policy on money supply and exchange rate is required for price stability; the domestic output expansion is needed to meet the ever-growing food demand in Nigeria. The study concluded by giving four recommendations; money affects inflation with a lag. Thus the design of monetary policy should take this into cognizance in monitoring and targeting; exchange rate depreciation can be inflationary; a stable and consistent monetary cum exchange rate policy stance in order to stem inflation is advocated.; sustenance of stringent regulations by the monetary authorities (Central Bank of Nigeria) to check fraudulent transfers of public foreign exchange and round-tripping by commercial banks; and policies that will encourage domestic output expansion are needed to feed the ever-growing food demand in Nigeria.

2.4 Effect of money supply on Interest rate.

According to Friedman (1978) when the rate of growth of money supply declines, the rate of change of real national income will not slow any appreciable effect for six to nine months on the average. During this interval, interest rates typically continue to rise at an accelerated pace. While Keynesians argue that interest rates provide an additional channel of transmission for monetary policy to the real economy, often changes in money supply would not affect interest rates very much, especially when interest rates were at a low level. An interest-rate instrument is ineffective in the case of a liquidity trap and that is why Keynesians put more emphasis on fiscal policy. The interest rates effect depends upon the marginal efficiency of investment, which in turn depends on expectations of profits and other factors in the future. However, Keynesians argue that the interest rates effect brought about by changes in money supply generally has a limited influence on investment spending.

Ganley and Salmon (1997) demonstrate that monetary policy has an asymmetrical effect on real output if prices are less flexible downwards than upwards. It has been suggested that negative money-supply shocks and/or increases in interest rates reduce output more than monetary expansions raise it. Monetary policy may cause asymmetric output responses if asymmetric information in the banking sector produces binding credit constraints. Thus, it is argued that increases in money supply would result in higher construction activities through a costly and time-consuming process. Moreover, the short run effect of a monetary shock depends on whether banks think it to be transitory or permanent, whether it counterbalances the changing demand for money.

2.5 How Central Bank (CBN) control the money supply in Nigerian economy.

According to Ernest (2013), when the CBN changes the level of money supply, it does so through the control of the base money. Base money is made up of currency and coins outside the banking system plus the deposits of banks with the central bank in the form of reserves. For example, If the central bank perceives that there is too much money in circulation and prices are rising (or there is potential pressure for prices to rise), it may reduce money supply by reducing the base money. To reduce the base money, the central bank sells financial securities to banks and the non-bank public so as to reduce the ability of deposit money banks to create new money. The central bank can reduce the money supply by also raising the cash reserve deposits that banks are required to hold with the central bank. The larger the deposit balances on bank balance sheets, the higher their ability to create more money. Central bank monetary policy, therefore, targets the growth in those deposit balances so as to control the expansion in money supply which could precipitate price distortions (Ernest, 2013). Ernest (2013) brought out further that CBN controls the money supply through changes in bank reserves (R) and currency in the hands of non-bank public. This can then influence the multiplier in the desired direction. Although currency/deposit ratio (c) is a function of the cash preferences of economic agents, it may be sensitive to interest rate movements, while bank reserves to deposit ratio (r) may be influenced by the CBN through the use of reserve requirements. The CBN leverage on the money supply depends on a large degree of substitutability between cash per se and bills on the part of the non-bank public and a small degree of substitutability on the part of the banks. This is due to the fact that in the process of portfolio adjustment the short-term interest rate plays an important part. The asset portfolio implies that large changes in the interest rates are needed to induce asset

holders to change their portfolio. Hence, the money supply depends on the portfolio choices of agents through demands for currency, time deposit and excess reserve.

2.6 Impact of Foreign Exchange Market/Rate in Nigeria

According to Afolabi (1998), exchange rate is the rate at which one currency will exchange for another. He added that in dependent economies such as Nigeria, “the exchange rate will be the important price in that it determines virtually all other prices. According to Nzotta (2004) exchange rate is the rate of transformation of one currency to another or the rate at which one currency is exchanged for another. He explained further that foreign exchange rate is maintained by arbitrage. Arbitrage is a mechanism whereby speculators buy in one market where the rate is low and sell in another where the price is high. The difference constitutes arbitrage income. Exchange rates may be fixed by government by fiat as was the case in Nigeria before the introduction of SAP in 1986. Exchange rates are largely determined by the operations of Demand and Supply. This is the Demand and Supply of Naira traded in the foreign exchange market (Umeora 2010). The impact of exchange rate regimes and exchange rate movements on inflation and growth has also been discussed in many empirical studies of developing countries. But the findings of these studies differ and cannot be generalized. As to inflation, there is a broad consensus about the role of monetary growth either as a main driving force behind inflation or, otherwise, as a necessary element in accommodating inflation triggered by other factors. However, the impact of nominal exchange rate flexibility on inflation is more ambiguous. All empirical researches confirm that depreciations of nominal exchange rate are correlated with temporary increases in consumer prices.

The central bank use monetary policy to achieve the goals of macroeconomic management. Consequently, monetary policy is employed as a tool to control or influence monetary aggregates such as interest rates, money supply and bank credit, including the exchange rate, with a view to achieving set policy targets such as tackling unemployment, inflation, economic growth, etc. In this regard therefore, monetary policy plays an important role towards achieving the ultimate economic objectives of sustainable growth, full employment, price stability and a healthy balance of payments. In the pursuit of these goals, the central bank sets intermediate objectives for monetary policy. These are goals which relate to using interest rates, growth in money supply and the exchange rate to achieve the ultimate goals of monetary management. In other words, the intermediate goals are regarded as channels through which monetary policy is transmitted to the macro economy with the aim of impacting on the ultimate objectives (Ohuche 2011). Aslem (1989) examined the role of money supply and exchange rate in the inflationary process in twenty-three African countries. The application of the pure monetarist model of the Harberger-type, reveals that the growth of money supply, expected inflation and real income were significant determinants of inflation for the period between 1974 and 1985. Exchange rate was later introduced as one of the explanatory variables in the pure monetarist model. The results show that exchange rate movements had a remarkable influence on the inflationary process in the 1980s.

The exchange Rate is one of the intermediate policy variables through which monetary policy is transmitted to the larger economy through its impact on the value of domestic currency, domestic inflation (the pass-through effect), the external sector, macroeconomic credibility, capital flows, and financial stability. Thus, changes in the exchange rate might induce changes in the relative prices of goods and services, and the level of spending by individuals and firms, especially if significant levels of their wealth are held in foreign currencies. An appreciation in the value of the exchange rate rise makes imported goods and services relatively cheap, while depreciation makes exports become cheaper to foreign buyers, thereby inducing higher competition in export markets at home. On the other hand, with depreciation, imports become more expensive and so less competitive against goods produced by domestic producers. Changes in the exchange rate therefore, have implications for individual spending and investments behavior of firms, all of which can affect aggregate demand (an important determinant of economic growth, price stability and full employment in the macro economy). However, there is a growing debate among monetary economists; whether in the current medium-term orientation of monetary policy, the exchange rate is still significant as a relevant transmission channel for monetary policy.

Before the establishment of the enactment of Exchange control Act of 1962, foreign exchange was earned by private sector operators. These were held in their balances overseas by commercial banks which then acted as agents for local exporters. These were mainly foreigners doing business in Nigeria (Umeora 2010). During this period, Agricultural exports contributed the bulk of foreign exchange receipts. By then the currency, Nigerian pound, was tied to the British pound with ease of convertibility. But this caused delays in the development of active exchange market. However with the establishment of the Central Bank of Nigeria there was centralization of foreign exchange authorities in the CBN. There then became the need to develop a local foreign exchange market. Following sharp increase in the price of crude oil in the 1970s, the foreign exchange market experienced a boom. According to him, the boom resulted in excessive importation of all kinds of goods from all corners of the globe. Most of the goods were imported through a very liberal system of Inward Bills for Collection (IBC). The system involved importing through Acceptance Bills that were paid after the goods have been imported and sold. The bills soon resulted in huge sums of payments for imports made in local currency

that accumulated in the Central Bank but not remitted abroad because of shortages of foreign exchange. By 1981 crisis over these unremitted bills developed necessitating the need to control the nation's foreign exchange. It was not until 1982 that comprehensive exchange controls were introduced. The increasing demand for foreign exchange with falling supply encouraged the development of flourishing parallel market popularly called "Black Market" which has flourished up to today. Since 1987 controls were not enough, Structural Adjustment Programme (SAP) was introduced in 1986. The second Tier Foreign market (SFEM) was introduced to find realistic exchange rate for the Naira by employing the market forces. To enlarge the scope of Foreign Exchange Market, Bureaux-de-change were introduced in 1989 for dealing in privately sourced foreign exchange. Foreign Exchange Market (FEM) which pegged the exchange rate and adopted dual exchange rates system – N22 per \$1 for government transactions and market determined rate for all other transactions. In 1995 Autonomous Foreign Exchange Market (AFEM) was introduced for sale of foreign currencies to end users by the CBN through authorized dealers at market-based exchange rates. In 1999, there was the introduction of Inter-Bank Foreign Exchange Market (IFEM). There followed in 2006 the Dutch Auction System (DAS). It is pertinent to note that since 1986 foreign exchange has been determined by operations of market forces of demand and supply (Umeora 2010).

3. Research procedures and Data sources

To ensure reliability of the information resulting from this study, secondary data is the most suitable and reliable for this project and this will involve the use of Central Bank publications i.e Central Bank Statistical Bulletin. The duration of this research was basically from 1988-2010 which is in the range of 40yrs. This study employs annual data on the money supply on exchange rate and economic growth (proxied by Gross domestic products) for Nigeria over the period 1988 to 2010. Data were obtained from the CBN Statistical Bulletin. Regression analysis technique was used to measure the relationship between a dependent variable and independent variables. Regression models in the following variables:

$$Y = f(X_1, X_2, X_3, \mu)$$

The independent variables are $X_1 - X_3$ and the dependent variable is Y

A regression model relates Y to a function of X and μ

Error term is denoted as μ .

$$GDP = a_0 + a_1 Narm + a_2 exch + a_3 intr + \mu \quad 1$$

$$GDP = a_0 + a_1 Brdm + a_2 exch + a_3 intr + \mu \quad 2$$

Where:

GDP = Gross domestic products (proxied by GDP divided by Pop), **Pop**= population
Narm = Narrow money (M1), **Brdm** = Broad money (M2), **exch** = exchange rate
Intr = interest rate

4. Empirical findings

The following tables below are actually gotten from different sources but they are answers to these research questions.

Table 1- The effect of money supply (Narrow Money) on the economic growth.

Dependent Variable	Explanatory Variables	Coefficients	T	P-value	R ² = 0.9863
GDP	constant	288155.97	17.970	0.000	Adjusted R ² is 0.9733
	Narm	0.180	8.126	0.000	
	exch	-373.034	-1.711	0.111	F-ratio =156.492
	intr	510.610	0.679	0.509	

Table1 above shows the regression analysis result shows the effect of money supply (Narrow money) on the economic growth, where the dependent variable is GDP (Gross Domestic Product) and the independent variables are Narrow money (NARM), exchange rate and interest rate. The result is interpreted based on the explanatory power of the adjusted R and the F-ratio. The adjusted R² is 0.973 showing that about 97.3% variation in the GDP from 1988 to 2005 is due to NARM, (Narrow Money) exchange rate interest rate. The F-ratio is 156.492 which is significant at 1% level. This shows that regression model is well fitted. The co-efficient of MI, that is Narrow Money is 0.18 and is significant at 1% level. This shows that a unit increase MI will yield 0.180 increases in the G.D.P. this is in line with the appriori since money supply is a significant component of the Nation GDP. The co-efficient of exchange rate is -373.034. This is in line with the theoretical appriori since

there is inverse relationship between the GDP and the exchange rate. A unit increase in the exchange rate will lead to 373.034 unit decrease in the GDP. The co-efficient of interest rate is 510.610 which show that a unit increase in interest rate will result into 510.610 increases in the GDP.

Table 2 The effect of money supply (Broad Money) on the economic growth.

Dependent Variable	Explanatory Variables	Coefficients	T	P-value	$R^2 = 0.9870$
GDP	constant	291938.719	19.346	0.000	Adj $R^2 = 0.9760$
	Brdm	0.104	-1.559	0.000	
	exch	-320.443	0.392	0.134	F-ratio =172.609
	intr	275.070	2.893	0.701	

The result of the regression analysis of table 2 shows the effect of money supply (Broad Money) on the economic growth, where dependent variable is GDP and the independent variables are Broad Money (BRDM), Exchange rate, interest rate and Dummy. The Adjusted R^2 is 0.976 which means that about 97.6% variation in the GDP from 1988 to 2010 is due to M_2 , exchange rate, interest rate and Dummy. The F-ratio is 172.609 which is significant at 1% level which indicates that the regression model is okay. The co-efficient of Brood money (BRDM) is 0.104 which is significant at 1% level. This shows that a unit increase in M_2 will yield 0.104 increases in the GDP. The co-efficient of exchange rate is -320.443, this shows a negative relationship between GDP and exchange rate. A unit increase in the exchange rate will lead to 320.44 unit decrease in the GDP. The co-efficient of interest rate is 275.07 which means that a unit increases the interest rate will lead to 275.07 increases in the GDP.

5. Concluding comments and Policy implications

This study has shown the effect of the money supply and exchange rate on the Nigeria economy. Using the Regression analysis on historical data during the period from 1988 to 2010, The result from this study shows that there is a varying relationship between the contribution of M_1 (Narrow money) M_2 (Broad Money) exchange rate interest rate, interest rate and Gross Domestic Product into the economy. This study shows that the broad money M_2 impacted on the key macroeconomic variable namely the GDP because the result shows a positive effect on the Nigeria economy. The growth in money supply was attributed to credits extended by the deposit money banks to the private sector. It is important to note that the existence of currency substitution introduces a different monetary policy dynamics because it exposes the Nigeria economy to external and internal shocks. This is due to the fact that currency substitution exerts tremendous pressure on the exchange rate and this may hinder the CBN'S ability to assert control over money supply. The Central Bank of Nigeria chose M_2 as the appropriate intermediate target for monetary policy during the SAP period, but it was not strongly committed to its annual growth targets. The inability to stick to targets resulted in severe deviations which impacted the real GDP growth and inflation rate adversely. A simple monetary policy can be effective in emerging market economies in Nigeria if the Central Bank commits to the rule-prescribe growth target levels. The exchange rate and interest rate should be stabilized because it has a negative effect on the GDP growth. The available literature affirms that changes in liquidity have a powerful effect on economic activity and certain macroeconomic variables. An increase in money supply in likely to have a direct positive impact on the general price level or output depending on the structural circumstances.

5.1 Policy Recommendations

Based on the findings made in the course of this study, the following recommendations are hereby suggested

- i. It is therefore prudent that in seeking to promote economic growth, Nigeria Banks should be committed to the mission of price stability as well as improving the regulatory and supervisory frameworks to secure a strong financial sector for efficient intermediation.
- ii. In other to avoid the inflationary impacts government should control the excessive expansion in broad money supply in Nigeria.
- iii. Government should take appropriate steps to coordinate and harmonize monetary policies in Nigeria in order to facilitate the financial integration process.

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