EFFECTIVENESS OF MONETARY POLICY AND ENTREPRENEURSHIP DEVELOPMENT IN NIGERIA

ABUBAKAR MOHAMMED MAGAJI PhD[1] KABIR IBRAHIM[2]
[1&2]Department of Business Administration and Management Studies

Abstract
Over the years, the Central Bank of Nigeria has made various efforts to influence the economy's overall performance. This paper attempts to appraise the monetary policy regimes in Nigeria. The country witnesses the abolition of the direct control regime by introducing an indirect monetary policy. The new policy relied on intermediate targets of monetary policy. This is assumed to be a tool that will extend the frontier of growth and development. The selected macroeconomic variables used are minimum rediscount rate (MRR), monetary policy rate (MPR), Output, inflation (INF), interest rate (IR) and money supply (M1 &M2). The result of impulse response functions is more effective in the post CBN independence period. The study employed a Quantitative research design, and the population covered the Nigerian data on monetary policy rates from 1986 to 2018. The data is collected from the CBN statistical bulletin via its website, www.cenbank.org. The study also adopts the Taylor rule (1993) to analyse the reaction function of central banks. In estimating the empirical result, the researchers conducted (ADF and PP) statistics for the unit root test. The test was conducted to obtain a more reliable result. The test shows that all the variables are stationary at first difference. The researchers also employed the VAR Model) in order to determine the relationship between monetary policy and macroeconomic variables; the result shows that during the pre-independent period, monetary policy was less effective, but during the CBN independence policy, it was highly influential on entrepreneurs' and the real sector, the result reveals macroeconomic variables impact primarily in the real sector in the short run, while in the long run, they return to their long-run trend.
Keywords: monetary policy, Entrepreneurship, Entrepreneurial Competencies, VAR Model (ADF) and (PP) models,

Introduction

The impact of monetary policy on the real sector and entrepreneurship development of an economy cannot be over emphasis. In particular, those entrepreneurs' efforts and those of small business enterprises are globally acknowledged as engines for socio-economic transformation. This sector is believed to enhance sustainable economic development in the developing countries. Considering the vital role of monetary policy in entrepreneurship development and the real sector of an economy, the authors consider the study imperative. The authors hope that the study will provide insight into monetary policy execution and how various policy instruments and tools affect Nigeria's macroeconomic variables, entrepreneurship, and real sector output. The researchers believed that a comparison of the impact of the relative effectiveness of various instruments used would provide valuable information for monetary authorities on how the monetary policy influences outcomes of entrepreneurship and the real sector economy to its desired direction and how it propagated through different sectors of the economy thereby achieve desired macroeconomics objectives.There is mixed evidence regarding monetary policy transmission on individual sectors; this study will ultimately contribute to the understanding of the relative effectiveness of the monetary policy instruments to be adopted in order to ensure balanced growth in different sectors of the economy; this will help a lot in improving the performance of entrepreneurs and the real sector economy thereby improve Output as

well as standard of living. The study shall be of immense importance to policymakers as it intends to establish the relationship between monetary policyand its impact on entrepreneurs and the real sector. It would also be helpful to the private sector by enabling them to take optimal contractual positions, especially in their efforts to predict future policy actions in the face of a changing environment.

In macroeconomic theory, monetary policy is anticipated to influence entrepreneurs through movement in interest rates, which would alter the cost of capital and investment. It is expected to provide equality of interest rate and rate of profit in the sector, financial sector, and external sector, thereby promoting an increase in the efficiency of the sectors and the economy in general (CBN, 2014). Monetary policy is one of the macroeconomics management tools used to influence outcomes in the real sector economy in the desired direction. It is deemed successful if it positively impacts the production and distribution of goods and services produced by entrepreneurs because a vibrant and productive real economy creates linkages in the economy and promotes internal and external balances (CBN, 2014). Therefore, to successfully conduct monetary policy, policymakers must have an accurate assessment of the effects of their policies on the economy because successful implementation of monetary policy requires an accurate assessment of how fast the effects of policy changes propagate to other parts of the economy and how large these effects are (Gimba, 2015). A crucial element that can determine how monetary conditions can influence entrepreneurs and a country's economic performance is the policy instrument used (Primus, 2016). Therefore, there is a need for countries to look at how policy instruments affect key macroeconomic variables.

In Nigeria, the main objectives of monetary policy are ensuring a stable inflation rate, stimulating growth in the productive sector, and reducing pressure on the balance of payment to maintain a stable exchange rate and favourable interest rates. To achieve these fundamental objectives, various techniques and instruments have been used; such techniques and instruments are in two distinct phases: the direct era or pre-SAP and the indirect era or post-SAP. The immediate period of the money-related approach they included the utilization of financial control, though the aberrant time relies upon a value system (CBN, 2012). Regardless of these endeavours, the nation experienced different difficulties, such as high expansion, monetary unsteadiness, and unfamiliar trade insecurity. For example, in 1970, the nation experienced high swelling because of an overabundance of liquidity inferable from the compensation expanded and common conflict. In addition, in 1986, financing cost was liberated, and the base rediscount rate (MRR) that showed the strategy heading of the money-related specialists was diminished from 15% to 12.75%. Therefore, the loaning and credit to entrepreneurs and private areas likewise expanded. In like manner, in 1992, the nation likewise saw the abrogation of the immediate control system where a backhanded money-related strategy was presented; the new arrangement depended on the middle focuses of the financial approach fully intent on expanding the wilderness of development and improvement by progressions strategy (CBN, 2014). However, the monetary pointers still need to be inside their objectives; for instance, expansion was high from 1998 to 2002. To relieve this, the national bank took specific actions; this incorporated intervention in week-by-week open market activity (OMO) and unfamiliar trade market, up audit of least rediscount rate (MRR) and money hold prerequisite just as presentation of medium-term money related arrangement structure. The strategy results showed that the broad cash supply expanded over the target while credit to entrepreneurs and private areas was beneath the target, and the swelling was still twofold (CBN, 2014).

In order to advance a stable macroeconomic climate through the headway of single-digit swelling, stable conversion scale and monetary adequacy, MRR was supplanted with a money-related strategy rate (MPR) in 2006. This was planned to accomplish stable total costs and conversion scale of homegrown cash through solidness in transient loan fees, where interbank rates were relied upon to

merge around the MPR, which became the working objective. From 2008 to 2012, the direct money-related arrangement was generally affected by worldwide monetary emergencies that began in the United States (US) and later spread to different districts. The emergencies made liquidity smash in the financial framework, inferable from enormous capital outpourings that applied pressing factors to unfamiliar trade markets and incited huge volumes of nonperforming advances in the financial area and a slump of market costs.

Between 2012 to 2018, expansion stayed twofold digit; the MPR likewise stayed between 12 to 14 per cent separately while the loan cost rose commonly on the lookout, greatest loaning rate additionally increased, and the nation encountered a downturn and general ascent in swelling and conversion scale deteriorate (CBN,2017). However, different exact proof has been credited to countless variables, particularly in agricultural nations, such as powerless institutional systems and shallow monetary business sectors (Davoode, Dixit and Pinter, 2013). Despite this, others ascribed it to using strategy devices; they thought that circuitous approach instruments ought to be commended with direct financial arrangement apparatuses to accomplish wanted macroeconomic targets (Primus, 2016).

Monetary Policy and the Real Sector

Monetary Policy

Financial strategy is an endeavour to impact the economy by working on factors such as the amount of cash and the pace of revenue. Also, Dwivede (2005) thought that "money-related arrangement can be expressly characterized as the intentional utilization of financial approach instruments (immediate and aberrant) at the removal of money-related specialists, for example, the national bank to accomplish macroeconomic dependability". In like manner, Folawewo and Osinnubi (2006) "see the financial arrangement as a mix of measures intended to manage the worth, supply, and cost of cash in monetary action".

Real Sector

CBN (2011) characterizes the genuine area of an economy as "the area that epitomizes the creation and dispersion of labour and products, which incorporates agribusiness and assembling, Mining/questioning, building and development, data and correspondence innovation (ICT), administration. Additionally, Adebayo (2013) characterizes the genuine area as "an area that includes families, non-monetary associations, and charitable establishments serving families engaged with the creation and dispersion of labour and products important to meet the utilization of an economy.

Output

The yield or Gross Domestic Product (GDP) gauges the market worth, everything being equal, and administrations created in an economy within one year (CBN, 2017). An increment in yield development recommends that the economy is improving, while a decrease proposes a drop in financial movement. There are mainly three main ways to deal with processing GDP. The pay, use, and worth-added approach are all relied upon to yield similar qualities. The GDP esteems in Nigeria are determined quarterly and every year. A huge change in GDP (either increment or abatement) impacts different markers like swelling and work.

Consequently, the presentation of the economy solely affects the prosperity of everybody in the country. The more the economy develops, the more pay develops and the other way around. When two continuous quarters of GDP are negative, the economy is supposed to be in a downturn. At such critical points in time, invigorating the economy through open and private spending is required (CBN, 2017). This uncovers. Output is a significant marker of the well-being of the economy.

Inflation Rate

The action of adjustment of the overall costs of labour and products in the economy throughoutgiven timeframes As an idea, expansion alludes to the supported expansion in the overall value level of labour and products in an economy throughout a predefined timeframe (CBN, 2017). This prompts a decrease in the buying influence of cash (money) as cash can purchase a predetermined number of labour and products. This constantly prompts a more significant expense of living and stances genuine worries to monetary directors. The swelling rate for the current month can be estimated regarding that very month in the earlier (year-on-year) or (month-on-month). Likewise, expansion can be determined for various gatherings of products, like transportation, schooling, food, and so on. Swelling may either be cost-push, request-pull or underlying to demonstrate the wellspring of value pressures. The expansion rate is normally estimated as an adjustment of the customer value list (CPI) or some other assigned file and is accounted for consistently. This gives customary signs of the development in economy-wide costs for educated detailing regarding money-related strategy by the national bank (CBN, 2017).

Interest rate

By and large, the degree of loan costs in an economy means the degree of liquidity. Exorbitant financing costs, for the most part, demonstrate that there is a lack of liquidity, while low loan fees reflect free liquidity conditions. Different elements that might decide loan cost developments incorporate the term to the development of a venture, the national bank's ideal level for financing costs to accomplish money-related strategy and expansive macroeconomic objectives, and so on (CBN, 2017).

Subsequently, the loan cost is the expense of acquiring cash and is communicated as a level of the advance sum. As such, it is the extent of a credited sum that the bank charges as revenue to the borrower. It is the rate that is paid for holding a monetary resource as speculation or keeping cash in a bank. It could be the market or strategy rate. Market rates incorporate loaning and store rates in the financial framework or interbank rates, while the strategy rate is generally constrained by the national bank (CBN, 2017). In addition, the signs from financing cost developments make it an essential variable for national banks to consider when detailing and executing a money-related approach.

Money

The term 'cash' signifies what is generally acknowledged as a mechanism of trade and repayment of obligations. As verified by Adam Smith in the Wealth of Nations, although cash and abundance are utilized in ordinary language as interchangeable in financial matters, abundance is made in the genuine economy through the creation and trade of labour and products in the public arena.

Here, cash performs two particular jobs: in working with the trading of labour and products and in communicating, in a solitary unit of estimation, the worth of the labour and products made by society. On the principal occasion, we discuss the difference between genuine and cash or ostensible qualities. In this manner, although abundance can be communicated in cash terms, riches and cash are not interchangeable. What, then, at that point, is cash? Cash is whatever is, by and large, acknowledged as a mechanism of trade.

Notwithstanding, cash can be grouped into the accompanying Narrow Money supply (M1). The term 'Limited' means that the components remembered for this proportion of cash supply are confined to just profoundly fluid resources, subsequently barring longer-term stores. This is complete with notes, coins, and bank adjustments effortlessly changed to cash and utilized in instalments for exchanges inside an economy. It is all actual types of homegrown cash and current store accounts that are promptly accessible to financial specialists, just as the fluid resources of safe foundations that are kept

with the national bank. The characteristic element of the thin cash segments is that they are promptly convertible to cash or are cash in themselves (CBN, 2017). Expansive Money (M2) is made out of tight cash and different types of cash, like momentary ventures, which need to be more effectively convertible to cash and may not be in actual structure. It is viewed as a more comprehensive proportion of a nation's cash supply and incorporates more liquidity components. Because it is a more extensive estimation of the cash supply, wide cash is considered by financial specialists to have a nearer relationship to expansion and is utilized by national banks in the execution of financial strategy. Development in expansive cash is a basic marker that gives believable signs to national banks about fitting measures to be taken, especially for liquidity for the executive's purposes. Wide cash may be estimated in multiple ways, contingent upon contrasts in monetary and monetary advancement phases, just as eccentricities in various economies (CBN, 2017). This prompts other wide cash definitions like M3, M4 and M5. Because of its more extensive structure and the chance of continuous changes to its parts, wide cash seems, by all accounts, to be less steady than tight cash.

Exchange Rate

The conversion scale is the sum that the money of one nation can be traded for a unit of cash (CBN, 2017). Notwithstanding, it, as a rule, changes to reflect advancements in monetary factors like political solidness, expansion, exchange balance, and so forth. Besides, the assurance of the conversion scale is typically founded on the unfamiliar trade system that is taken on in a country. In a market-based (adaptable) system, the rate is controlled by the powers of interest and supply. At the same time, official contemplations are utilized to decide the conversion scale in an oversaw system. The conversion scale is said to see the value when a lesser measure of the homegrown money is needed to purchase a unit of unfamiliar /reference cash. Then again, money deteriorates when more units of the homegrown cash are needed to buy a unit of the unfamiliar/reference money. The swapping scale may not settle in the spot or fate markets. In the previous, the swapping was not set in stone for instalment and settlement at the hour of contact between executing parties, while costs are still up in the air for instalment and settlement, sometimes not too far off the date of development of the agreement (CBN, 2017).

The Classical View of Monetary Policy

The classical theory is based on the assertion that all markets in a capitalist society are clear and that prices are flexible to ensure automatic adjustment back to equilibrium. According to this doctrine, a change in money supply does not affect real variables like Output, employment, and income. Money is, therefore, considered neutral in the economy.

(a)The Cash Transactions Theory

According to the transaction approach, the only reason for holding money is to facilitate transactions. Fisher’s analysis commences with a simple identity, sometimes called the equation of exchange.

$$MV=PY \quad \text{..... 2.1}$$

where M is the money supply, V is the velocity of money, P is the price level, and Y is the Output. According to this school of thought, the money supply (M) does not impact real Output (Y) but only the price level (P) (Jinghan, 2009).

The Cash Balance Approach

The Cambridge approach emphasises that there are alternatives to holding money in the form of shares and bonds. These assets yield a return, which is the opportunity cost of holding money. Agents will economise on money holdings as interest rates rise and vice versa. Another factor that will influence money holdings is the expected rate of inflation. If inflation is expected to be high, then the

purchasing power of money will fall. This will prompt agents to buy securities or commodities to hedge against inflation. The actions and inactions of these agents always have an impact on the entrepreneurs, who are significant payers in an economy.

We can set out the Cambridge cash balance approach as follows:

MD = kPy..... 2.2

MD = MS

Where

k = k (E (inf), r, u)

This shows that MD is some division k of ostensible GDP where k relies upon anticipated swelling, financing costs/returns, and u, a bunch of undefined components that might impact cash interest. Note that r is a vector of profits mirroring an appreciation that specialists had a selection of resources like offers and bonds (Jinghan, 2010).

From the perspective of traditional business analysts above, we can comprehend that there exists a connection between cash, swelling, and resource costs. This will assist the examination in concocting a practical connection between the factors in Nigeria.

The Monetarist View

The monetarists believe that adjustments in cash supply could influence the degree of monetary movement in both genuine and ostensible terms. Like Keynes, Friedmans see it depends on the reason that cash isn't only a nearby substitute for a small class of resources but rather a substitute for a huge range of monetary resources and surprisingly non-monetary resources like protections, strong and semi-sturdy labour and products, and so on.

Md/P = f (yp, rb-rm, re-rm, rm) 2.3

Where Md/P is the interest for genuine cash adjusts, yp is the individual abundance which relates to long-lasting pay, rb is the normal profit from securities, rm is the normal profit from cash, re is the normal profit from values, and rm is the normal expansion.

Expected swelling addresses the profits on holding merchandise. This last component is the particular relationship Friedman adds: specialists hold sturdy products as resources and will substitute them for cash if they expect value expansion (for example, capital additions on holding products). This is the core of the monetarists' transmission channel. Friedman utilizes his repetition to expand upon Keynes' hypothesis of liquidity inclination. He believes the abundance of cash held is not applied to acquiring premium-bearing resources but to buying products. This is because buyers of harsh and semi-solid products are likewise a store of abundance. If the portfolio disequilibrium is discarded in acquiring buyer merchandise, there will be an immediate effect on total interest and yield (Palley, 2001).

Taylor's standard

The long discussion in writing regarding whether national banks ought to have tact or observe a standard got a suggestion in 1976 that arrangement rules ought to be better than attentiveness. This depends on the way that circumspection results could be more problematic. Since the suggestion, the Taylor rule (1993)has filled in as an endeavour to give a viable principle that is basic and handily seen, so it is clear to monetary specialists when strategy creators veer off from the arrangement. Since Taylor's endeavour, different endeavours have been made to investigate the financial response capacity of national banks. These endeavours are determined to examine the deliberate and non-methodical reaction of financial strategy changes in monetary exercises.

Experimental investigations have broadly applied the straightforward Taylor rule to examine national banks' response elements throughout the planet. The standards indicated by Taylor (1993) are expressed in the structure.

$$i=r^*+\pi+\alpha(\pi_t-\pi^*)+\beta(y_{tn}-y_t)\text{----------2.4}$$

Where I denote nominal Federal fund rate/Operating target, r^* is the equilibrium absolute Federal fund, π_t is the target inflation rate, $y_t-y_t^*$ is the percentage deviation of real GDP from its target level, and α and π are the parameter values of inflation and output gap, respectively. The rules assumed **0.5** for the inflation gap and **0.5** for the output gap.

But for clarity, the rule can be written in the following relation

$$i=\alpha\pi_t+\beta(y_t-y_t^*)\text{----------2.5}$$

Where π^* and r^* denote the inflation target and equilibrium interest rate, which is equal to **2** and assumes an equal weight of **0.5** for inflation and the output gap; however, in the later examination by Taylor, he accepts 0.5 for expansion and is worth more noteworthy than or equivalent to focus on in a later investigation. Yet, aside from the Taylor basic instrument rule, different examinations focus on the rule (see Svensson, 19997, 1999, 2003b, 2005). Besides, there is an open discussion regarding the best guideline to depict the financial arrangement response capacity of national banks (for instance, McCallum and Nelson (2005) Versus Svensson (2005).

Yet, this examination will keep the Taylor rule (1993), an instrument kind of rule, for the accompanying reasons, as expressed in crafted by Abubakar and Svagnanam (2016). One, the national bank misfortune capacity may not exist, and regardless of whether it does, the trouble or inconceivability of characterizing it as it is not disclosed; two, it is anything but a piece of the standard working method: two, the accessibility of information on designated factors, particularly on account of Nigeria.

Concept of Entrepreneurship

Entrepreneurship is an attractive career choice. It is necessary for stimulating economic growth and employment opportunities in all societies. Successful small businesses are the primary engines for job creation, income growth, and poverty reduction in most countries. Therefore, encouraging entrepreneurship is essential for job creation and economic growth. The government can provide incentives that encourage entrepreneurs to risk attempting new ventures.

Entrepreneurship is a process where an individual discovers, evaluates and exploits opportunity independently. It involves recognizing opportunities in the environment, mobilizing resources to take advantage of them, providing improved goods and services for consumers, and rewarding the risk taken. It creates value by bringing together a unique package of resources to exploit an opportunity. Entrepreneurship is all about environmental opportunities that are waiting to be tapped. It is a creative process of organizing, managing and assuming the risk involved in the enterprise, creating something new and assuming both risk and the rewards. All activities an entrepreneur undertakes to bring a business unit into existence are collectively known as entrepreneurship. It is the process of changing ideas into commercial opportunities and creating values. It is the process of creating a business enterprise. Entrepreneurship is all about learning the skills needed to assume the risk of establishing a business, developing the winning strategies, and executing the strategy with all vigour. It is a dynamic process of creating wealth for the well-being of entrepreneurs and individuals. Therefore, successful entrepreneurship requires that the entrepreneur possesses certain managerial skills. These skills

include the ability to learn new techniques in handling business operations, adapt to change, and handle changes in the environment.

Historically, the term ‘entrepreneur’ originates from the French word ‘entrepreneur', which means 'to do something' or 'to undertake' the risk of new ventures. Richard Cantillon first introduced the term. To Cantillon, entrepreneurs are economic agents who have the foresight and willingness to take advantage of profit opportunities through buying and selling activities. The entrepreneur acts as the middleman to buy at a low price and sell at a higher price.

Adam Smith widens the scope of entrepreneurship to include forming an organization for commercial purposes. He described the dynamism of an 'enterpriser' personality, such as the ability to foresee potential through changes in the economy and take advantage of the opportunities created. These ideas were further expanded by Jean B. Say, who sees entrepreneurs as "individuals with certain competencies" that can influence society by forming enterprises and are influenced by society to recognize needs and fulfil them through skilful management of resources.

Schumpeter believes that entrepreneurship plays a crucial role in triggering economic development. He defines development as the "exercising of new combinations of productive factors." Such efforts may result in introducing a new product, a new production method, or opening a new market or organization.

Unlike many entrepreneurship scholars, Schumpeter disassociates entrepreneurship from risk bearing. For him, risk bearing is borne by the capitalist, not by the entrepreneur. He also recognizes that entrepreneurship is rare and difficult. This is because entrepreneurial activities require entrepreneurs to break away from their traditional routines and overcome social resistance in order to do something new. Therefore, an entrepreneur is a sociologically distinct individual who is a creative and resourceful innovator and an agent of change. For Schumpeter, "profit making cannot be regarded as a sole motivation for entrepreneurship". He believes "equally important is the desire to prove one's superior capability over others and the pleasure in creating and getting things done". Peter Drucker explained this idea by describing the entrepreneur as "someone who searches for change, responds to it and exploits the change as an opportunity".

Frank Knight, a prominent scholar, contributes significantly to the study of entrepreneurship through his profound theory on profit, the distinction between risk and uncertainty and his outstanding identification of entrepreneurship with control and responsibility. According to him, entrepreneurs are distinguishable from non-entrepreneurs based on their willingness to bear the cost of uncertainty. In return for this willingness, the entrepreneurs are rewarded with profit. That is the residual income left after all necessary payments have been made.

Since the time of Knight and Schumpeter, several other contributors to the work on entrepreneurship have emerged. Among them is Von Mises, who defines "entrepreneurship as human action viewed from the aspect of uncertainty inherent in every action". According to him, an entrepreneur is seen as an active individual whose action is always speculative. For Mises, entrepreneurship mainly consists of decision-making activities, particularly pertaining to production. He also made a distinction between entrepreneurship and management. He believes that entrepreneurship involves greater responsibility, with an entrepreneur performing a more crucial role than the manager. In performing his role, the entrepreneur is motivated by the desire to make profits and acquire wealth.

Mises’ work on entrepreneurship influenced the work of Kirzner, another prominent scholar of entrepreneurship. For Kirzner, "an entrepreneur is an alert individual who responds to the opportunities that already exist but are yet to be organized as businesses". In this respect,

entrepreneurs are described as passive, compared with Schumpeter, who saw entrepreneurship as a source of innovative ideas that trigger economic development. Kirzner further asserts that entrepreneurship activities are always competitive and that competition is always entrepreneurial. For him, a competitive market process is crucial for developing entrepreneurial activity.

Entrepreneurial Competencies

Entrepreneurial Competency refers to Entrepreneur's characteristic which results in effective and superior performance in the job. It is a combination of knowledge, skills and appropriate traits that an Entrepreneur must possess to perform his task. It is also defined as characteristics such as generic and special knowledge, motives, traits, self-image, social roles, and skills resulting in a venture's birth, survival, and/or growth. In short, the competencies required by an entrepreneur to start a business venture and carry it on successfully are known as entrepreneurial competencies.

Scholars have concentrated on research works on the personal characteristics of entrepreneurs. Brockhaus identifies three attributes that are consistently associated with entrepreneurial behaviour. These attributes are the need for achievement, the internal locus of control and a risk-taking propensity.The need for achievement is a personal attribute associated with the expectation of doing something better over others. The individuals who score highly on the need for achievement would have a strong desire for success and are consequently more likely to behave entrepreneurially.

Locus of control is a belief or disbelief that one can control or influence the environment in which one is found. Rotter hypothesizes that individuals with internal locus of control are likelier to strive for achievement than those with external locus of control. This is because individuals with internal locus of control believe that they can make things happen as they can control and influence the environment around them. In contrast, individuals with external locus of control do not believe they can do this. Hence, people with internal locus of control are more likely to be more entrepreneurial than those with external locus of control. Similarly, the culture of a community also may influence entrepreneurship within it. Different levels of entrepreneurship may stem from cultural differences that make entrepreneurship more or less rewarding. A culture that accords high status to the "self-made" individual is likelier to encourage entrepreneurship.

In addition to a high need for achievement and internal locus of control, individuals with higher propensities for risk-taking are believed to be more likely involved in entrepreneurial activities. Empirical evidence supports the view that risk-taking propensity is one of the attributes influencing entrepreneurial success and performance. Therefore, scholars have identified personality traits such as the need for achievement, the locus of control and the risk-taking propensity to significantly influence entrepreneurial behaviour and the decision to become an entrepreneur. In short, an entrepreneur should have creativity, dedication, determination, flexibility, leadership passion, self-confidence and smartness.

In conclusion, the analysis attempts to determine if relationships exist between monetary policy, macroeconomic variables and entrepreneurship. The findings show a relationship exists between monetary policy, macroeconomic variables and entrepreneurship in Nigeria. Moreover, the monetary policy rate affects Output and inflation through interest rate, and after that, it affects money demand and exchange rate through the impulse response functions. This could be explained by market-based policy and fiscal dominance.

Methodology

The study employed Quantitative research design because the method is partly objective and subjective in nature. Moreover, the population of the study covered the Nigerian data on monetary

policy rate, minimum rediscount rate, Monetary Policy Rate, Output, inflation, interest rate, money supply, and exchange rate for development of entrepreneurship from the year 1986 to 2018. The data is collected from the CBN statistical bulletin via its official website. The study used Quarterly time series data of Minimum rediscount rate (MRR), monetary policy rate (MPR), Output (GDP), Inflation (INF), interest rate (IR), Money supply (M1 and M2), and Exchange rate (EXGR) for the above mentioned period. The study depends mainly on secondary data sources from the CBN statistical bulletin through its website, www.cenbank.org, Monthly Journal, Financial reviews, Annual reports, Statistical Bulletins, and Communiqué of Central Bank various issues. Other sources of data for the study include journals, seminar papers, statistical materials, published materials, and similar studies.

This study adopts the Taylor rule (1993) to analyse the reaction function of central banks.Taylor suggests how central banks should adjust their policy rate in response to changes in macroeconomic conditions that impact monetary variables. By design, adjustments to the policy rate are expected to produce economic stability and growth of entrepreneurship and maintain growth in the long run. The rule shows that when the inflation rate is high, the interest rate should go up, and the interest rate should go down when the output or unemployment gap is high.

The Taylor rule was developed largely in reaction to the widely held assumption that central bank policy actions are closely tied to decisions of economic agents based on their current information, experiences, and expectations of the economy's future path. The rule has been modified to include variables other than inflation and output gap.

Model Specification

Model 1: To determine the effectiveness of monetary policy before the introduction of MPC in 2007, the study will use VAR to ascertain the relationship between the policy tool and target, using data from 1986 to 2005.

We will assume we have a Y_t^1 vector as;

$$Y_t^1 = [MRR, Ms, i, \pi, y_{t,} E] \quad \text{.....(3.10)}$$

Where $the\ Y_{St}^1$ column vector of the variables, MRR is the minimum rediscount rate, Ms is money supply**; i** is the interest rate, π is inflation, y_t is Output, and E is the exchange rate.Moreover, each variable is expressed as a linear combination of its lagged values and lagged values of all variables in the group.

VAR model 1: Minimum Rediscount Rate (MRR)

The vector autoregressive model (VAR) representation of $Y_t$can be as follows;

$$Y_{t=}\alpha_1 + \alpha_2 y_{t-1} + \alpha_3 y_{t-2} + ... + \alpha_n y_{t-p} + e_t \quad \text{.....(3.11)}$$

Where Y_t is equal to $MRR, Ms, i, \pi, y_{t,} E$, α_{nm} is the matrix coefficients, y_{t-1} is a vector of the endogenous variables, and $\boldsymbol{it}$ is the vector of the error term.

Model 2: To find out how the introduction of MPC leads to the effect of monetary policy in Nigeria, hence the development of entrepreneurship. The study will also employ VAR to ascertain the relationship between the policy tool and the target.

We will assume we have a Y_t^1 vector as;

$$Y_t^1 = [MPR, Ms, i, \pi, y_{t,} E] \quad \text{.....(3.12)}$$

Where $the\ Y_t^1$ column vector of the variables, MPR is the monetary policy rate, Ms is the money supply, I interest rate, π is inflation, y_t is Output, and E is the exchange rate. Moreover, each variable is expressed as a linear combination of its lagged values and lagged values of all variables in the group.
VAR model 2: Monetary Policy Rate (MPR)

The vector autoregressive model (VAR) representation of Y_t can be as follows;

$$Y_{t=}\gamma_1 + \gamma_2 y_{t-1} + \gamma_3 y_{t-2} + \ldots + \gamma_n y_{t-p} e_t \quad (3.13)$$

Where Y_t is equal to $MPR, Ms, I, \pi, y_{t,}\ E, \alpha_n$ is matrix coefficients, y_{t-1} is a vector of the endogenous variables, and $_{it}$ is the vector of the error term.

Model 3: To examine how better management of monetary policy leads to the performance of entrepreneurs and the real sector in Nigeria, the study will also employ VAR to ascertain the relationship between the policy tool and target, using data from 1986 to 2018.

We will assume we have a Y_t^1 vector as;

$$Y_t^1 = [MRR/MPR, Ms, i, \pi, y_{t,}\ E] \quad (3.14)$$

Where the Y_t^1 column vector of the variables, MRR/MPR is minimum rediscount rate/monetary policy rate, Ms is money supply; i is the interest rate, π is inflation, y_t is Output, and E is the exchange rate. Moreover, each variable is expressed as a linear combination of its lagged values and lagged values of all variables in the group.
VAR model 3: MRR/MPR (Full Sample)

The vector autoregressive model (VAR) representation of Y_t can be as follows;

$$Y_{t=}\alpha_1 + \alpha_2 y_{t-1} + \alpha_3 y_{t-2} + \ldots + \alpha_n y_{t-p} + e_t \quad (3.15)$$

Where $Y_t\ the$ vector of the dependent variable is, δ_{nm} is the matrix coefficients, y_{t-1} is a vector of the endogenous variables, and $_{it}$ is the vector of the error term.

Unit Root Tests

To overcome the problem of the non-stationary nature of time series data and see if their properties make them suitable for econometric analysis, this study will adopt the Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) to test for the stationary of the data and also to detect if their properties make them suitable for econometric analysis.

Vector Autoregressive (VAR) Model

The study adopted the Unrestricted Vector Autoregressive Model (XVAR) to investigate the relationships and dynamic interactions among time series variables, to also provide an excellent approximation to the data generation process of a vector of time-series variables, as well as isolate the effect of each variable in the model and how they estimate the parameters in the model. Moreover, the model captures empirical regularities in the data unrestrictedly, making it well-suited for evaluating interdependencies among variables. Therefore, the model shall be used to estimate the dynamic response of the explanatory variables on the dependent variables.

Analysis and Interpretation of Results

Unit Root Test

The analysis started by investigating the stochastic properties of the time series because most macro-econometric time series are not stationary at levels. Therefore, testing the variable's stationarities became necessary to obtain a more reliable result. The stationarities test used the Argumentative Dickey-Fuller (ADF) and Philip Peron (PP) approach for the unit root test.

Model One:Pre-CBN independence

Table 1:Unit Root Estimate using Argumentative Dickey Fuller (ADF) and Philip Peron (PP) Test

	ADF				PP				
	Level		Difference		Level		Difference		
Variables	Test stat	Prob.	Test stat	Prob.	Test stat	Prob.	Test stat	Prob.	Decision
PR	-3.1687	0.0257	-3.3287	0.0168	-8.7205	0.0000	-8.7205	0.0000	I(0)
Output	4.0599	1.0000	-14.6875	1.0000	-9.8927	0.0000	-8.1056	0.0000	I(1)
Inflation	-2.2056	0.2060	-2.2908	0.1774	-8.7199	0.0000	-8.7199	0.0000	I(1)
Int rate	-3.2138	0.0228	-3.5090	0.0102	-8.7178	0.0000	-8.7178	0.0000	I(0)
M1	-4.6927	0.0000	5.4386	1.0000	-5.3713	0.0000	-4.6927	0.0000	I(0)
M2	0.6874	0.9911	-0.3319	0.9144	0.3894	0.9812	-6.7920	0.0000	I(1)
Exgr	-0.5149	0.8818	-0.4905	0.8867	-8.9866	0.0000	-8.9892	0.0000	I(1)

Source**:** Authors Computation with E-vies 10^{+}

Table 1 above shows the results of the ADF and PP tests. The result shows that policy rates, interest rates, and M1 are level stationary using the ADF and PP tests. However, all the variables are level non-stationary using both ADF and PP. We therefore conclude that there is a presence of a unit root in the variables at level, and the variables are integrated of order one (I) at all levels of significance.

ii. Model Two:Post-CBN independence

Table 2 Unit Root Results using Argumentative Dickey Fuller (ADF) and Philip Peron (PP) Test

	ADF				PP				
	Level		Difference		Level		Difference		
Variables	Test stat	Prob.	Test stat	Prob.	Test stat	Prob.	Test stat	Prob.	Decision
PR	-3.1674	0.0257	-3.3287	0.0168	-8.7205	0.0000	-8.7205	0.0000	I(0)
Output	4.0599	1.0000	-14.6875	1.0000	-9.8927	0.0000	-8.1056	0.0000	I(1)
Inflation	-2.0696	0.2060	-2.2908	0.1774	-8.7199	0.0000	-8.7199	0.0000	I(1)
Int rate	-3.2138	0.0228	-3.5090	0.0102	-8.7178	0.0000	-8.7178	0.0000	I(0)
M1	-4.6927	1.0000	-5.4386	1.0000	-5.3713	0.0000	-5.2488	0.0000	I(1)
M2	0.6874	0.9911	-6.6921	1.0000	-0.3894	0.9812	-6.7920	0.0000	I(1)
Exgr	0.5149	0.8818	-0.4905	0.8867	-8.9866	0.0000	-8.9892	0.0000	I(1)

Source:Authors Computation with E-vies 10^{+}

Table 2 above shows the results of the ADF and PP tests; the result shows that PR and IR are stationary at a level using both ADF and PP tests. However, all the variables are non-stationary using both ADF and PP; therefore, we conclude that there is a unit root in the variables at the level and that the variables are integrated of order one (I) at all significance levels.

iii.ModelThree: Full sample

Table 3 Unit Root Test using Argumentative Dickey Fuller (ADF) and Philip Peron (PP) Test

	ADF				PP				
	Level		Difference		Level		Difference		
Variables	Test stat	Prob.	Test stat	Prob.	Test stat	Prob.	Test stat	Prob.	Decision
PR	-2.9293	0.0447	-2.9747	0.0399	-6.3130	0.0000	-12.1069	0.0000	I(0)
Output	-2.3964	0.1447	-2.9340	0.0442	-4.6307	0.0002	-12.2059	0.0000	I(1)
Inflation	-2.5580	0.1044	-2.8164	0.0587	-7.0261	0.0000	-11.3141	0.0000	I(1)
Int rate	-3.5989	0.0071	-3.8115	0.0036	-7.0427	0.0000	-34.1229	0.0001	I(0)
M1	-1.9610	0.3038	-2.0515	0.2648	-11.8424	0.0000	-11.8140	0.0000	I(1)
M2	-1.8886	0.3368	-1.8906	0.3359	-11.7570	0.0000	-11.7701	0.0000	I(1)
Exgr	-2.2171	0.2013	-2.2527	0.1890	-11.9834	0.0000	-12.0022	0.0000	I(1)

Source:Authors Computation with E-vies 10^{+}

The table above shows the result of the ADF and PP test, indicating that policy and interest rates are level stationary using the ADF and PP tests. However, all the variables are level non-stationary using both ADF and PP. Therefore, we conclude that there is a unit root in the variables at the level and that the variables are integrated of order one (I) at all significance levels.

Vector Autoregressive Regressive (VAR) Estimate

The VAR model is an alternative model to the multivariate simultaneous equation model. The models lend themselves to describing the dynamic structure of the variables. Model restrictions may be imposed on exogenous variables based on statistical procedures. Here, the VAR model is used to determine the relationship of the monetary policy rate to each of the dependent; it is observed from the result that the values at the top of each variable lag are the values of the coefficients, and those at the middle are the standard errors, while the last ones are the T-statistics. The standard errors are simply the developments that occur from predicting the slopes accurately, and T-statistics are obtained by dividing the coefficients by their respective standard errors.

VAR Model One: Pre-CBN Independence

Table 4: The VAR Model 1

VARIABLES	PR	OUTPUT	INF	IR	M1	M2	EXGR
PR(-1)	0.750458	-0.000780	0.008722	0.097390	0.000648	0.000729	-0.004711
	(0.07743)	(0.00208)	(0.07566)	(0.09635)	(0.00142)	(0.00101)	(0.01493)
	[9.69180]	[-0.37535]	[0.11527]	[1.01078]	[0.45553]	[0.72456]	[-0.31558]
OUTPUT(-1)	-1.803185	0.855055	-3.140323	1.588453	0.076364	0.076776	0.442241
	(2.87594)	(0.07720)	(2.81020)	(3.57861)	(0.05282)	(0.03739)	(0.55440)
	[-0.62699]	[11.0759]	[-1.11747]	[0.44387]	[1.44568]	[2.05348]	[0.79769]
INF(-1)	0.044583	0.001363	0.838140	-0.089385	-0.000401	-0.000603	-0.009972
	(0.07147)	(0.00192)	(0.06983)	(0.08893)	(0.00131)	(0.00093)	(0.01378)
	[0.62382]	[0.71025]	[12.0019]	[-1.00513]	[-0.30547]	[-0.64896]	[-0.72381]

IR(-1)	0.009310	4.03E-05	-0.032550	0.680644	-0.001473	-0.001281	0.013556
	(0.07523)	(0.00202)	(0.07351)	(0.09361)	(0.00138)	(0.00098)	(0.01450)
	[0.12375]	[0.01994]	[-0.44277]	[7.27070]	[-1.06574]	[-1.31022]	[0.93470]
M1(-1)	1.181617	-0.441868	-5.090648	8.487156	0.467312	0.053363	2.203311
	(9.68702)	(0.26003)	(9.46558)	(12.0538)	(0.17792)	(0.12593)	(1.86738)
	[0.12198]	[-1.69930]	[-0.53781]	[0.70411]	[2.62653]	[0.42373]	[1.17990]
M2(-1)	-0.075746	0.918911	11.88199	-13.09169	0.615916	0.819324	-3.535449
	(15.0277)	(0.40339)	(14.6842)	(18.6994)	(0.27601)	(0.19537)	(2.89691)
	[-0.00504]	[2.27796]	[0.80917]	[-0.70011]	[2.23148]	[4.19380]	[-1.22042]
EXGR(-1)	0.132798	-0.004078	-0.222697	0.031609	0.009770	0.007859	0.968967
	(0.25001)	(0.00671)	(0.24429)	(0.31109)	(0.00459)	(0.00325)	(0.04819)
	[0.53118]	[-0.60762]	[-0.91160]	[0.10161]	[2.12766]	[2.41813]	[20.1055]
C	-0.303802	0.223856	2.289212	-1.968719	0.114984	-0.023629	-0.562447
	(2.64256)	(0.07093)	(2.58215)	(3.28820)	(0.04854)	(0.03435)	(0.50941)
	[-0.11497]	[3.15581]	[0.88655]	[-0.59872]	[2.36907]	[-0.68780]	[-1.10412]

Source: Researchers computation.

Table 4 shows that the study has 56 coefficients. The results show that the past realization of the policy rate is associated with a 75% increase in policy rate ceteris paribus. However, a negative relationship exists between PR, Output and M2. Likewise, the past realization of Output is associated with an 85% increase in output ceteris paribus. However, a negative relationship exists between M1, Exgr and Exgr.

Additionally, the past realization of INF is associated with an 83% increase in INF ceteris paribus. However, a negative relationship exists between IR, Exgr and INF. More so, the past realization of IR is associated with a 68% increase in IR ceteris paribus. However, a negative relationship exists between INF, M2 and IR. Moreover, the past realization of M1 is associated with a 46% increase in M1 and a 61% increase in M2 ceteris paribus. However, a negative relationship exists between INF, IR and M2. More succinctly, the past realization of M2 is associated with an 81% increase in M2 ceteris paribus. However, a negative relationship exists between INF and M2. Lastly, the past realization of the exchange rate is associated with a 96% increase in the exchange rate ceteris paribus. However, PR, INF, M2 and Exgr have a negative relationship.

VAR Model Two: Post Central Bank Independence

Table 5: Model two

VARIABLE	PR	OUTPUT	INF	IR	M1	M2	EXGR
PR(-1)	0.321686	0.041464	-0.031320	-0.423833	0.033708	0.015283	0.129334
	(0.17448)	(0.07433)	(0.06818)	(0.30677)	(0.08654)	(0.05380)	(0.12594)
	[1.84363]	[0.55782]	[-0.45940]	[-1.38159]	[0.38951]	[0.28408]	[1.02695]
PR(-2)	-0.085295	-0.054117	0.016376	0.116675	0.089484	-0.016922	0.015236
	(0.18560)	(0.07906)	(0.07252)	(0.32630)	(0.09205)	(0.05722)	(0.13396)
	[-0.45957]	[-0.68446]	[0.22582]	[0.35757]	[0.97215]	[-0.29573]	[0.11374]
PR(-3)	0.038328	0.052799	-0.054067	-0.140819	-0.090846	-0.051530	-0.048822
	(0.19115)	(0.08143)	(0.07469)	(0.33608)	(0.09481)	(0.05894)	(0.13797)
	[0.20051]	[0.64838]	[-0.72390]	[-0.41901]	[-0.95824]	[-0.87432]	[-0.35385]
PR(-4)	0.103299	-0.443806	-0.131469	1.615675	-0.144645	-0.066954	0.182434
	(0.15502)	(0.06604)	(0.06057)	(0.27254)	(0.07688)	(0.04780)	(0.11189)
	[0.66638]	[-6.72050]	[-2.17057]	[5.92819]	[-1.88138]	[-1.40086]	[1.63052]
OUTPUT(-1)	-0.130920	0.210574	0.042569	-0.379429	0.174294	0.042170	0.176341
	(0.47376)	(0.20182)	(0.18511)	(0.83294)	(0.23497)	(0.14607)	(0.34195)
	[-0.27634]	[1.04336]	[0.22996]	[-0.45553]	[0.74178]	[0.28870]	[0.51569]
OUTPUT(-2)	0.304027	0.175813	-0.038844	-0.650597	-0.262974	0.120064	-0.100436
	(0.47871)	(0.20393)	(0.18704)	(0.84164)	(0.23742)	(0.14760)	(0.34552)
	[0.63510]	[0.86211]	[-0.20767]	[-0.77301]	[-1.10762]	[0.81346]	[-0.29068]
OUTPUT(-3)	-0.508487	-0.012497	0.060770	0.498815	-0.117447	-0.146982	-0.012283
	(0.51930)	(0.22122)	(0.20290)	(0.91300)	(0.25755)	(0.16011)	(0.37482)
	[-0.97919]	[-0.05649]	[0.29950]	[0.54635]	[-0.45601]	[-0.91800]	[-0.03277]
OUTPUT(-4)	0.880610	0.988395	-0.049021	-0.756970	0.303040	0.085661	-0.761574
	(0.47884)	(0.20399)	(0.18710)	(0.84187)	(0.23749)	(0.14764)	(0.34562)
	[1.83905]	[4.84533]	[-0.26201]	[-0.89915]	[1.27603]	[0.58021]	[-2.20352]
INF(-1)	-1.275547	-0.101148	0.469199	0.355091	0.071768	0.023208	0.037843
	(0.55293)	(0.23555)	(0.21604)	(0.97213)	(0.27423)	(0.17048)	(0.39909)

	[-2.30690]	[-0.42941]	[2.17178]	[0.36527]	[0.26171]	[0.13613]	[0.09482]
INF(-2)	0.034387	0.064722	-0.061579	-0.594759	-0.176112	-0.105038	0.004157
	(0.62044)	(0.26431)	(0.24242)	(1.09083)	(0.30771)	(0.19130)	(0.44782)
	[0.05542]	[0.24487]	[-0.25402]	[-0.54524]	[-0.57232]	[-0.54909]	[0.00928]
INF(-3)	-0.103756	-0.117302	0.086273	0.037729	0.440586	-0.030196	-0.065613
	(0.60926)	(0.25955)	(0.23805)	(1.07117)	(0.30217)	(0.18785)	(0.43975)
	[-0.17030]	[-0.45195]	[0.36241]	[0.03522]	[1.45807]	[-0.16075]	[-0.14920]
INF(-4)	-0.707786	0.834850	-0.402619	-2.314159	-0.989315	-0.756694	-0.034684
	(0.79150)	(0.33719)	(0.30926)	(1.39158)	(0.39256)	(0.24404)	(0.57129)
	[-0.89423]	[2.47594]	[-1.30187]	[-1.66297]	[-2.52018]	[-3.10071]	[-0.06071]
IR(-1)	-0.161148	-0.006840	0.042802	0.136881	0.056020	0.025134	-0.014684
	(0.12420)	(0.05291)	(0.04853)	(0.21835)	(0.06160)	(0.03829)	(0.08964)
	[-1.29754]	[-0.12928]	[0.88203]	[0.62688]	[0.90947]	[0.65637]	[-0.16381]
IR(-2)	0.072327	0.016739	-0.000626	-0.148342	-0.069021	0.014259	-7.90E-06
	(0.13206)	(0.05626)	(0.05160)	(0.23218)	(0.06550)	(0.04072)	(0.09532)
	[0.54769]	[0.29754]	[-0.01212]	[-0.63892]	[-1.05383]	[0.35021]	[-8.3e-05]
IR(-3)	-0.093825	-0.026684	0.021384	0.128386	0.045197	-0.001999	0.009961
	(0.13294)	(0.05663)	(0.05194)	(0.23372)	(0.06593)	(0.04099)	(0.09595)
	[-0.70579]	[-0.47119]	[0.41169]	[0.54931]	[0.68551]	[-0.04876]	[0.10382]
IR(-4)	-0.114052	0.303399	0.019528	-1.038086	0.028450	-0.001932	-0.163698
	(0.12471)	(0.05313)	(0.04873)	(0.21927)	(0.06185)	(0.03845)	(0.09002)
	[-0.91450]	[5.71060]	[0.40074]	[-4.73435]	[0.45995]	[-0.05024]	[-1.81854]
M1(-1)	1.069004	-0.461758	0.424298	0.723482	0.880595	0.099166	0.309641
	(0.58466)	(0.24907)	(0.22844)	(1.02793)	(0.28997)	(0.18027)	(0.42200)
	[1.82841]	[-1.85393]	[1.85734]	[0.70383]	[3.03683]	[0.55011]	[0.73375]
M1(-2)	1.078904	-0.144499	0.291901	-0.067245	0.379426	0.171124	0.080843
	(0.70573)	(0.30065)	(0.27575)	(1.24079)	(0.35002)	(0.21759)	(0.50938)
	[1.52877]	[-0.48063]	[1.05857]	[-0.05420]	[1.08402]	[0.78643]	[0.15871]

M1(-3)	-0.418375	0.159971	-0.451733	0.724149	-0.376345	0.062268	-0.510790
	(0.68357)	(0.29120)	(0.26709)	(1.20181)	(0.33902)	(0.21076)	(0.49338)
	[-0.61205]	[0.54934]	[-1.69133]	[0.60255]	[-1.11009]	[0.29544]	[-1.03528]
M1(-4)	-0.407747	0.152315	0.173502	-0.071122	0.091897	0.152749	0.381056
	(0.74021)	(0.31534)	(0.28922)	(1.30141)	(0.36712)	(0.22823)	(0.53427)
	[-0.55085]	[0.48302]	[0.59989]	[-0.05465]	[0.25032]	[0.66929]	[0.71323]
M2(-1)	0.040071	0.555364	-0.610247	-1.599093	-0.869564	0.230685	0.087489
	(0.99920)	(0.42567)	(0.39041)	(1.75675)	(0.49557)	(0.30808)	(0.72120)
	[0.04010]	[1.30469]	[-1.56307]	[-0.91026]	[-1.75469]	[0.74879]	[0.12131]
M2(-2)	-2.110848	-0.165096	-0.156125	1.908806	-0.020157	0.137397	-0.284513
	(1.14249)	(0.48671)	(0.44640)	(2.00868)	(0.56663)	(0.35226)	(0.82463)
	[-1.84758]	[-0.33921]	[-0.34974]	[0.95028]	[-0.03557]	[0.39005]	[-0.34502]
M2(-3)	0.983291	-0.083744	0.714638	-1.411532	0.157819	-0.089855	1.252186
	(1.14904)	(0.48950)	(0.44896)	(2.02019)	(0.56988)	(0.35428)	(0.82936)
	[0.85575]	[-0.17108]	[1.59176]	[-0.69871]	[0.27693]	[-0.25363]	[1.50983]
M2(-4)	-0.021095	-0.478544	-0.186945	1.638597	0.615034	0.236590	-0.410802
	(0.92600)	(0.39448)	(0.36181)	(1.62804)	(0.45926)	(0.28551)	(0.66836)
	[-0.02278]	[-1.21310]	[-0.51669]	[1.00649]	[1.33919]	[0.82867]	[-0.61464]
EXGR(-1)	0.361780	0.259192	0.050673	-1.142629	-0.029502	-0.083702	0.497363
	(0.29283)	(0.12475)	(0.11442)	(0.51484)	(0.14523)	(0.09029)	(0.21136)
	[1.23547]	[2.07774]	[0.44288]	[-2.21940]	[-0.20313]	[-0.92707]	[2.35318]
EXGR(-2)	0.079299	-0.013928	0.019985	0.039407	0.025389	0.121409	0.027003
	(0.32251)	(0.13739)	(0.12601)	(0.56702)	(0.15995)	(0.09944)	(0.23278)
	[0.24588]	[-0.10138]	[0.15860]	[0.06950]	[0.15873]	[1.22096]	[0.11600]
EXGR(-3)	-0.172873	-0.013560	0.015923	0.244285	0.097119	0.074616	-0.020703
	(0.33822)	(0.14408)	(0.13215)	(0.59464)	(0.16774)	(0.10428)	(0.24412)
	[-0.51113]	[-0.09411]	[0.12049]	[0.41081]	[0.57897]	[0.71553]	[-0.08481]

EXGR(-4)	-0.189271	-0.109547	-0.044048	0.125327	0.222485	0.118436	0.153536
	(0.30808)	(0.13124)	(0.12037)	(0.54165)	(0.15279)	(0.09499)	(0.22236)
	[-0.61436]	[-0.83469]	[-0.36592]	[0.23138]	[1.45610]	[1.24687]	[0.69047]
C	-2.323909	0.025016	-0.870623	0.530829	-0.436146	-0.689950	0.377395
	(0.78113)	(0.33277)	(0.30521)	(1.37335)	(0.38741)	(0.24084)	(0.56380)
	[-2.97505]	[0.07517]	[-2.85254]	[0.38652]	[-1.12579]	[-2.86475]	[0.66937]

Source: Researchers computation.

From Table 5, the study has 203 coefficients. The results show that the past realization of the policy rate at lag1 is associated with a 32% increase in policy rate ceteris paribus. However, a negative relationship exists between PR and IR; at lag4, the past realization of the policy rate is associated with 88% of PR ceteris paribus. Likewise, the past realization of Output at lag1 is associated with a 21% increase in Output, a 55% increase in M2 and a 25% increase in Exgr ceteris paribus; however, a negative relationship exists between Output and M1. Additionally, the past realization of INF at lag1 is associated with a 46% increase in INF and a 41% increase in M1; at lag2, it is associated with a 29% increase in M1 ceteris paribus. However, a negative relationship exists between M2, PR and INF. More so, the past realization of IR is associated with a 68% increase in IR at lag1 and 16% PR, 16% M2 ceteris paribus; however, a negative relationship exists between INF, M2 and IR. Moreover, the past realization of M1 is associated with an 88% increase in M1 at lag1 and a 61% increase in M2 ceteris paribus. However, Output, INF, PR and M1 have a negative relationship. More succinctly, the past realization of M2 is associated with a 23% increase in M2 and an 11% increase in EXGR at lag4 ceteris paribus; however, a negative relationship exists between INF and M2. Lastly, the past realization of the exchange rate is associated with a 49% increase in EXGR and a 12% increase in PR ceteris paribus; however, a negative relationship exists between OUTPUT and EXGR.

VAR Model Three: Full Sample

Table 6: VAR Model three

VARIABLES	PR	OUTPUT	INF	IR	M1	M2	EXGR
PR(-1)	0.857201	-0.031974	0.018087	0.109898	-0.010951	-0.006016	0.014369
	(0.05072)	(0.01276)	(0.04511)	(0.07051)	(0.01006)	(0.00627)	(0.01485)
	[16.8993]	[-2.50650]	[0.40091]	[1.55869]	[-1.08898]	[-0.95937]	[0.96783]
OUTPUT(-1)	0.000712	0.903128	-0.174623	0.325135	0.078694	0.045203	-0.079121
	(0.18979)	(0.04773)	(0.16880)	(0.26381)	(0.03763)	(0.02346)	(0.05555)
	[0.00375]	[18.9215]	[-1.03448]	[1.23245]	[2.09152]	[1.92639]	[-1.42425]
INF(-1)	0.024346	0.010571	0.844407	-0.094693	0.007807	0.005157	-0.018379
	(0.05845)	(0.01470)	(0.05199)	(0.08125)	(0.01159)	(0.00723)	(0.01711)
	[0.41649]	[0.71908]	[16.2417]	[-.16542]	[0.67370]	[0.71360]	[-1.07416]
IR(-1)	-0.024666	0.008590	-0.027220	0.685732	0.006223	0.006648	0.006296

	(0.05155)	(0.01296)	(0.04585)	(0.07166)	(0.01022)	(0.00637)	(0.01509)
	[-.47845]	[0.66257]	[-0.59365]	[9.56937]	[0.60890]	[1.04301]	[0.41727]
M1(-1)	-0.150220	-0.226801	-0.034774	0.313275	0.795948	-0.019187	0.286850
	(0.42015)	(0.10566)	(0.37369)	(0.58402)	(0.08329)	(0.05195)	(0.12298)
	[-.35754]	[-2.14646]	[-0.09306]	[0.53642]	[9.55597]	[-0.36937]	[2.33250]
M2(-1)	0.138867	0.282010	0.265725	-0.604889	0.110490	0.979863	-0.111275
	(0.43429)	(0.10922)	(0.38626)	(0.60367)	(0.08610)	(0.05369)	(0.12712)
	[0.31976]	[2.58208]	[0.68794]	[-1.00203]	[1.28334]	[18.2492]	[-0.87537]
EXGR(-1)	-0.020344	0.047323	-0.119899	0.063681	0.039401	0.019686	0.920462
	(0.09852)	(0.02478)	(0.08762)	(0.13694)	(0.01953)	(0.01218)	(0.02884)
	[-.20650]	[1.91007]	[-1.36837]	[0.46503]	[2.01743]	[1.61627]	[31.9206]
C	0.007297	0.022337	0.002510	0.003325	0.026137	0.026365	0.031936
	(0.04199)	(0.01056)	(0.03734)	(0.05836)	(0.00832)	(0.00519)	(0.01229)
	[0.17378]	[2.11543]	[0.06721]	[0.05697]	[3.14003]	[5.07889]	[2.59859]

Source: Researchers computation.

The table above has 56 coefficients. The results show that the past realization of OUTPUT has no association with PR in the long run ceteris paribus, and a 90% increase in OUTPUT is associated with OUTPUT. However, a negative relationship exists between INF and OUTPUT. Likewise, the past realization of IR is associated with a 32% increase in Output. Additionally, the past realization of M1 is associated with a 7% increase in OUTPUT ceteris paribus.

Moreover, the past realization of M2 is associated with a 4% increase in OUTPUT ceteris paribus. However, a negative relationship exists between EXGR and OUTPUT. More succinctly, negative relationships exist between M2 and OUTPUT, and positive relationships exist between INF, IR, M1, M2 and OUTPT.

Impulse Responses of the Variable

To trace out the impact of shocks for several periods in the future, the researchers employed the Impulse Response Function (IRF). This is because IRF traces the effect of one innovation/shock/impulse to one of the innovations/shocks/impulses on endogenous variables' present and future value; this helps eliminate the difficulties associated with individual coefficients in the estimated VAR. So, IRF was used in this research to determine how macroeconomic variables respond to monetary policy. In simple terms, IRF was used to trace the reaction of output, inflation, interest rate, money supply, and exchange rate to shocks in Nigeria's monetary policy. Using the Cholesky one standard deviation approach, the policy rate was assumed to be exogenous and considered a function of Output, inflation, interest rate, M1, M2 and exchange rate.

In conclusion, it is observed that the researchers, in estimating the empirical result, conducted Augmentative Dickey-Fuller and Philip Perron statistics for the unit root test. The test was conducted

to obtain a more reliable result. The test shows that all the variables are stationary at first difference. The researchers also employed the use of the Vector Autoregressive Model in order to determine the relationship between monetary policy and macroeconomic variables; the result shows that during the pre-independent period, monetary policy was less effective, but during the CBN independence policy was highly effective, and on the overall impact of policy on entrepreneurs' and the real sector, the result reveals macroeconomic variables impact primarily in the real sector in the short run, while in the long run, they return to their long-run trend.

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