

The Interaction of Fiscal Policy and Monetary Policy on the Stock Market Performance in Nigeria

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ABSTRACT

The stock market is an important aspect of an economy, which helps contribute to the growth of such an economy. This market is affected by a lot of factors such as the fiscal policy and monetary policy, to enhance its growth, these policies are the key focus of this study. These policies have various macroeconomics variables attributed to them. These macroeconomic variables are broad money, interest rate, inflation rate, GDP, and government expenditure, which are used in this study. This study is an update to the few studies done on the interaction of the fiscal policy and monetary policy on the Nigerian stock market and also checked the causality of fiscal policy, monetary policy, and the stock market.

The study made use of econometrics to run a regression model, consisting of a dependent variable and independent variables. Using a time series data, from the period of 1981 to 2018. The result of the ARDL bounds test used, indicates that all the macroeconomic variables proxy to both Fiscal and Monetary policy are all significant and indicating a long run relationship toward the stock market performance in Nigeria. Whereas, the ARDL model shows the broad money, inflation rate, and real interest rate imposing a negative relationship on the stock market, while GDP and government expenditure are both positive towards the stock market in the long run. Thus in the short run, broad money and GDP insert a positive effect on the stock market, and real interest rate, government expenditure, and inflation rate impose a negative impact on the stock market performance in Nigeria.

Keywords: Fiscal Policy, Monetary Policy, Stock Market

ÖZ

Sermaye piyasası, bir ekonominin büyümesine katkıda bulunan unsurlar arasında önemli bir rol oynamaktadır. İlgili piyasanın gelişmesi, maliye ve para politikalarının yönü ile belirlenmektedir. Bu politikaların kendilerine atfedilen çeşitli makroekonomik değişkenleri vardır. Çalışmada, geniş para, faiz oranı, enflasyon oranı, GSYİH ve devlet harcamaları makroekonomik değişkenler olarak kullanılmıştır. Literatürde, maliye politikası ve para politikasının Nijerya sermaye piyasası üzerindeki etkileşimi üzerine yapılan az sayıda çalışma mevcuttur. Para politikası ve hisse senedi nedenselliği de çalışmaya ilave edilmiş ve literatüre yeni bir katkı sağlanması hedeflenmiştir.

Çalışma, 1981-2018 dönemini içermektedir. Kullanılan ARDL sınır testinin sonucu, hem Maliye hem de Para politikasının tüm makroekonomik değişkenlerin önemli olduğunu ve borsa performansına uzun vadeli bir ilişki olduğunu göstermektedir. ARDL modeli ise geniş para, enflasyon oranı ve reel faiz oranını borsa üzerinde olumsuz bir ilişki yaratırken, GSYİH ve devlet harcamalarının uzun vadede borsaya karşı olumlu olduğunu göstermektedir.

Anahtar Kelimeler: Maliye Politikası, Para Politikası, Sermaye Piyasası

DEDICATION

This is dedicated to my loving parents, Prof. and Mrs. Choji Davou,
And my beloved siblings Vivian, Lucy, Hudung, and Simi.

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lag Model
ASP	Average Share Price
ATS	Automated Trading System
CBN	Central Bank of Nigeria
ECM	Error Correction Mechanism
ECT	Error Correction Term
GDP	Gross Domestic Product
GOVEXP	Government Expenditure
INFR	Inflation Rate
NSE	Nigerian Stock Exchange
OLS	Ordinary Least Square
PP	Phillips Perron
RGDP	Real Gross Domestic Product
RIR	Real Interest Rate
SEC	Securities and Exchange Commission
SMC	Stock Market Capitalization
SVAR	Structural Vector Autoregressive
UK	United Kingdom
US	United State
VECM	Vector Error Correction Model

Chapter 1

INTRODUCTION

1.1 Background

The financial institution is the backbone of any nation's economy, which is to be regulated and monitor to maintain financial stability, thereby leading to economic growth. It is the responsibility of the government to develop effective policies to provide a better environment for the financial system to achieve this goal. The financial system uses the stock market as one of the channels in achieving this aim.

The stock market is where government securities and companies' publicly-held securities are traded in a well-organized environment. The stock exchange is another name for this market. Yartey and Adjasi, (2007) stated that, in Africa, the formation and developing of stock markets is a full system of financial liberalization program. They also emphasized that the formation would increase domestic savings and increase investment quality and quantity in Africa. Various factors affect the success of this market, such as demand and supply, policies (government policies), price to earnings ratio, and related markets, etc. In this study, the main focus will be on government policies (i.e. Monetary and Fiscal) and their influence on the stock market.

A policy is a collection of what to do in a particular situation that has been officially agreed upon by a group of people, business organizations, or by the government, according to the Cambridge Dictionary. Policy can also be defined as an idea set aside

by the government or individuals for decision making. Government is one of the major sources of policymakers stated by Michael and Jones (1973), emphasizing that government is an essential claimant in various levels of labor laws, product labeling requirements, taxation, and various other kinds of regulations and control. The Monetary and Fiscal policy of government are the major government policies that would be discuss in this thesis, as stated earlier on.

The monetary policy involves the act of money supply and regulating the circulation of money in an economy. The central bank designed and implemented this policy in an economy. It comprises of macroeconomic determinants, such as economic growth rate, exchange rate, the balance of payment, and inflation, etc. The monetary policy has two approaches, namely the expansionary or contractionary approach.

The expansionary approach is implemented to increase the money supply in circulation and to lower the interest rate in an economy, thereby boosting the aggregate demand in such an economy. This is done to stimulate economic growth by fighting issues of deflation, unemployment, and recession in an economy. Blanchard (1981) supported the statement above by stating that a high supply of money will cause a lower interest rate premium on capital costs, thereby increasing stock market development. Also, according to Thorbecke (1997) and Conover, Jensen, and Johnson (1999), the expansionary approach exert a high positive impact on the stock market return.

The contractionary approach plays the role of reducing the supply of money in an economy, and it helps to resolve issues of inflation. This approach increases the interest rate, which falls the price of the stock in the market. This occurs when corporations are trying to make their stocks attractive to investors due to low demand

in the market. In their research works, Ehrmann and Fratzscher (2004) found the relationship existing between contractionary approach and the output of the stock market to be negative. This monetary policy approaches are used, depending on the economic situation at the point in time, to suit the economy.

The monetary policy influences the market output through different means, such as the channel of interest rates, a channel of wealth effect (asset price), channel of credits, and the channel of the exchange rate. Furthermore, the decision making of monetary policy is influenced by the private sector expectations as regards to vital macroeconomic indicators on the stock market output (Mishkin, 2001). There exist various researches on the connection of this policy and stock market (such as Patelis, 1997; Gertler and Gilchrist, 1993; Conover et al, 1999; Aliyu, 2012; Bjornland and Leitemo, 2009; Nwakoby, 2016; Thorbecke, 1997).

Moreover, fiscal policy refers to government tax rates and spending to monitor and control a country's economy. This policy is based on either the Keynesian theory or the Classical or Ricardian theory. The Keynesian theory was developed by John Maynard Keynes, in which he claims that the government has the power to influence macroeconomic productivity level in an economy, by the act of increasing or decreasing tax rate and public spending. The outcome of his theory leads to a higher level of employment, a general price level increase, and motivates investment. This is done by government investing in public projects, reducing the rate of tax and interest rate, and granting loans to business individuals and investors. Hence, this would lead to a boost in the level of output in the economy. He supported the expansionary fiscal policy by stating that government spending increases the overall level of economic demand and thereby influences the asset prices.

Ricardian equivalence theory is another economic theory that goes against the Keynesian economic stating that fiscal policy might not affect the aggregate demand level in an economy, but by the individuals in the society who determined their consumption by the present value of their after-tax income (Kenton, 2019). The classical economists emphasize that in the market, private sector activity are crowded by the fiscal policy and thereby resulting in a less or no value in an economy that runs close to its potential output (Chatziantoniou, Duffy, and Filis, 2013). There are a few number of study on Fiscal Policy (such as, Darrat, 1988; Agnello and Sousa 2013; Jansen, Li, Wang and Yang, 2008).

These two policies should not be examined separately from each other due to the important role they performed in influencing of the stock market performance in an economy Chatziantoniou et al. (2013).

1.2 Nigerian Economy

Nigeria's economy is the largest economies in Africa and 27th in the world in terms of nominal GDP. It has a mixed economy consisting of diverse industries such as the manufacturing, technology, communication, entertainment, and financial sector, where some of the industries were privatized in the errands of the 1990s to enhance economic productivity. It is also, consider as an emerging economy. It has a lot of natural resources, which oil is the most significant one. Oil became the major export of Nigeria, which dominated other products such as groundnut. As a result of oil been the major export and the economy relying on it more, the agricultural sector fell, thereby leading to a low production done in that sector.

The involvement of the petroleum industry has helped channeled resources to other industries, such as transportation, construction, and manufacturing industry, thereby leading to a rapid growth in the economy in 1973 (Toyin et al., 2020). As of the period of 2000 to 2014 stated by the World Bank, this industry has increased the growth rate of the Nigerian GDP of 7% yearly. This growth of GDP later drops from 7% to 2.7% in 2015 and 1.6% in 2016, due to a drop in the price of oil combined with a negative production shock in the economy, which resulted in recession in the economy. The GDP growth, which is being affected by the various industries, had a positive growth with the communication (telecom) industry in Nigeria. While the agricultural industry faced the insurgency between the farmer and herdsmen (World Bank, 2020). On the other hand, the manufacturing sector has a slow down due to a lack of consistent power supply, while the construction industry also had a positive impact on the GDP. The petroleum industry, which is the major, had a stable effect due to a drop in oil prices worldwide. In the half of the year 2019, the growth rate of the GDP later became stable at 2% in Nigeria (World Bank, 2020).

The Nigerian stock market is not left behind in terms of its contribution to the growth of the Nigerian economy. As of the year 2004 to 2007, the stock market has generated 1.2% to 6.2% of Nigerian GDP but later dropped from 6.2% to 0.37% in the year 2007 to 2016. There was an increase later on in the year 2018 of 0.65%, according to the World Bank.

Even though there is a growth in the GDP, it is still not good enough compared to the nation's population, which is over 200 million. Furthermore, problems of food inflation and the increase in unemployment still exist in the nation. Due to factors such as rising inflation, external debt, exchange rate, and poor macroeconomic structure,

Nigerian GDP is projected to sustain a slow growth rate. Which the present government set out policies to tackle these issues (World Bank, 2020).

1.3 Nigerian Stock Market

The Nigerian Stock Exchange (NSE) was incorporated on September 15th, 1960, as the Lagos stock exchange, but started operation officially on the 25th of August 1961, trading nineteen listed securities. This operation was carried out inside the Central Bank building in Lagos Island, with four firms as market dealers of the exchange. Later, renamed as the Nigerian Stock Exchange in December 1977, followed by the creation of several branches located in various cities within the Country.

This market is regulated by a commission known as the Securities and Exchange Commission (SEC). The SEC has the responsibility of monitoring the market to detect and prevent the breaking of market rules and regulations, investor protection, unfair manipulations, and trading operations in the market. In order to maintain transparency and effectiveness in the market, the commission provides relevant information and historical data on the performance of listed securities in the market to the public by publishing it on a daily bases. Due to the effectiveness of the market, the introduction of Automated Trading System (ATS) came into existence in the year 1999, where dealers can connect to a server via a computer network and conduct trading activities. To be able to reach numerous investors apart from the computer server but also through mobile trading, the exchange introduces the use of X-Gen, which enhances the trading activities of the exchange. The trading activities online are done during the working days (i.e. Monday to Friday) from the period of 9:30 am to 2:30 pm.

This exchange has contributed and continued to contribute to the growth of Nigerian economy. Kolapo and Adaramola (2012) back up this statement in their research work, by stating that the activities carried out on the Nigerian capital market, influences positively the growth rate of the Nigerian economy. Using policies that would encourage firms' productivity and enhance the SEC to be more effective in creating more market confidence leading to the stock market increase and, consequently, the GDP (Nurudeen, 2009).

NSE currently has up to 332 securities listed in the market, which comprises of various sectors such as Consumer Goods, Industrials, Financials, Oil & Gas, and many more. This Exchange generates the total market capitalization of about N25.2 trillion, which makes the NSE the third (2rd) largest stock exchange in Africa.

1.4 Study Goals and Objectives

The main goal of this study is to figure out if the interaction of the fiscal and monetary policy can exert the Nigerian stock exchange growth. Also, to review the causality of fiscal policy, monetary policy and the stock market in Nigeria. The study aims at contributing to the few existing kinds of literature on the connection the two policies and NSE.

1.5 Study Hypothesis

For this study to achieve its objectives, hypotheses are drawn to aid with the direction and conclusion of the study. Below are the hypotheses:

H₀ = Monetary Policy determinants have no interaction on the NSE growth.

H₀ = Fiscal Policy determinants have no interaction on the NSE growth.

H₀ = The interaction of both Policies have no impact on the NSE growth.

1.6 Data and Methodology

The research work employed the use of an econometric method of data analysis, by the use of Autoregressive Distributed Lag Model “ARDL” to investigate the long and short run interaction of Fiscal and Monetary Policy on the growth of NSE. The model will also check the speed of adjustment from the disequilibrium short run to long run equilibrium, by the use of error correction model. Finally, the study used granger causality to find the causality relationship of the policies and the stock market. This model will help answer the above hypothesis.

1.7 Study Structure

This study is structured into five sections, consisting of the introduction as the first chapter, which comprises of the study background, objectives, and the study methodology. The second considers the theoretical and empirical literature of the research topic. Thirdly is the Methodology chapter, and the data analysis and analytical results are the fourth chapter. Lastly, the conclusion and policy implication of the research will be presented.

Chapter 2

LITERATURE REVIEW

2.1 The Monetary Policy, Fiscal Policy and Stock Market

In this section, the fiscal and monetary policy relationship with the NSE will be discussed separately, and in the following parts both policies interaction on the market will be presented.

2.1.1 Monetary Policy and the Stock Market

There are a lot of researches conducted to figure out the connection between the monetary policy and stock market. Most works identified a strong connection existing between them, with the channels where this relationship is formed (Lawal et al., 2018; Hu, Han & Zhang, 2018; Nwaogwugwu, 2018; Thanh et al., 2017; Chatziantoniou et al., 2013; Ngigi, 2000). Examples of these channels are the channel of interest rate, channel of credit, wealth effect, and exchange rate channel, as mention in the previous chapter. This channels are briefly discuss below.

The channel of interest rate is an important mechanism of this policy that discusses the shifts in an economy's interest rate, which influences the cost of business capital and thereby affects the current worth of future corporate net cash flows. A rise in this channel would increase short term market rates, thus increasing the cost of capital and real interest rate, which would slow investment or bring a shortage in investment and hence reduces the stock prices. It also reduces inflation by lowering the high circulation of money in an economy that tends to increase the price of goods and

services in such an economy. Uddi & Alam (2019) note that an inverse connection between the rate of interest and price of share exist, since a rise in the rate of interest will also cause the lending interest rate to increase, thereby decreasing investment in the economy. This investment decline will cause the share price to fall. This channel compared to the other channels, it recognized as the key monetary policy channel.

The credit channel is an amplified mechanism to interest rate or the interest rate adjustment. It suggests that the level of investment (such as corporate investment) in a country's economy can be influenced by the central bank altering the interest rates in such an economy. This investment affected would also result in an effect on the firm's market value through the current worth of its future cash flows. Where a rise in investment activity is expected to boost the corporation's future net cash flows, which in turn increases its market value (Lawal et al., 2018).

The exchange rate channel is another mechanism related to the interest rate, where a rise in the domestic interest rate attracts domestic currency investment rather than foreign currency, leading to a growth in domestic currency. This increase result in a rise in imports over the export, which decreases. It also, provides confidence to investors such as foreign investors to invest in such currency, thus increasing the value of the stock market. The opposite would be the case when the domestic currency depreciates, leading investors to withdraw their funds from the market and investing in a better one. In events of increasing trade, capital movements, and financial liberalization worldwide, the exchange rate has been identified as a factor behind business profitability and equity prices (Kim, 2003). Khatri, Kashif & Shaikh (2017) express that the flow of the exchange rate has an impact on the share prices, and is attributed to international competitiveness. Furthermore, the wealth channel claims

that the value price of stocks in the market weakens as a consequence of the interest rate rise. This channel tends to have a positive reaction with the stock market, where a rise in wealth would encourage investment, hence increases the stock market return. This rise in wealth is a result of a lower interest rate.

Apart from the mentioned channels above, inflation is another medium in which the policy affects the stock market. This inflation induced by the expansionary monetary policy reduces the buying ability of a domestic currency, thereby reducing the real value of a firm's assets and acts as a tax on capital stock. This reduction in the stock value reduces the real value of its dividends. According to Feldstein (1980), the share value will decline as a result of a rise in inflation, which reduces the actual net return on shares. All these channels should be considered by the monetary policymakers and investors to enhance the activities of the stock market.

2.1.2 Fiscal Policy and the Stock Market

There are studies written on the interaction of fiscal policy and the stock market, such well-known studies are Blanchard (1981), and also Darrat (1988). Others written by Nigerian researchers are Ogbulu (2015), Jakova (2016), and a few others. These researchers found a correlation of the fiscal policy with the stock market and also that this policy has brought stability in a nation's level of economic activity, which also runs down to operations done in the stock market. It focuses on government spending (expenditure) and tax levy on goods and services. This policy takes the shape of either Keynesian or Ricardian theory to affect the stock market, which both contradict each other's point of view.

The Keynesian theory outlines measures at which the fiscal policymakers can stabilize the fluctuation in an economy, and increase the aggregate demand and stock prices, by

joining the discretionary measure and automatic stabilizer. It states that this policy instrument inserts a positive influence on the stock market, when fiscal policymakers make use of discretionary measures such as deficit budget and tax to bring changes in interest rate, thereby improving the market performance. Keynes states that the rate of aggregate demand would decrease if government spending and tax levied on spending are not considered in the economy, which in turn would shrink the prices of stocks in the market. Laopidis (2009), in his research, state the practice of this theory would bring a positive shift in employment and contain inflation. Furthermore, he said government expenditure has a reasonable connection with prices of stock in the market.

The Ricardian theory, states that aggregate demand is influence by individuals in the nation who dogged their consumption by the current value of their income after-tax not by government spending, as mention earlier in the previous chapter. This argument is backed up by Baro (1989), who added that the present value of taxes would not change as long as the spending present value does not. It means there is an equivalent effect on the economy by both taxation and budget deficits. He also said that the deficit budget cut in current taxes would increase projected taxes with the same present value as the actual cut.

2.1.3 Monetary and Fiscal Policies

Lawal et al., (2018), stated that there are two strands in which the fiscal and monetary policies, are grouped. The first stand is the co-movement effect, which focuses on the complementary or substitution ability of both policies on each other, and the second is the opposing or contrasting effect, which focuses on the movement of both policies into a conflicting direction. When one policy is being tightened, the other will be less tightened as a result of this opposite movement in both policies (Mélitz, 1997). The

first strand also indicates that both policies complement each other, or one might be in the lead.

2.2 Empirical Evidence

Research work on the reaction of the stock market returns of three advanced economies (the US, UK, and Germany) with these policy shocks, shows that the interaction of these policies influences the stock market development by direct or indirect means (Chatziantoniou et al., 2013). On the side of the UK, a direct interaction was seen of both policies on the stock market. While, in the case of Germany and the US, the fiscal policy has no direct influence on the DAX 30 and Dow Jones respectively, but indirect influence on the DAX 30 via interest rate medium. In terms of the US, the money supply via interest rate is negatively related to the market, while Germany's broad money has a positive effect on the DAX 30. Afonso and Sousa (2011) also suggested a similar result to Chatziantoniou's study (2013). A research conducted on the responses of the Swedish stock market with the adjustment of monetary policy, Blomberg and Forell (2020) found a significant reaction of this market due to these adjustments. Where the bank and real estate sectors of the stock market are affected as a result of a decline in the repo rate and the bank sector alone is significantly affected in the event of a rise in the repo rate by the Swedish central bank.

Considering the Asian part of the world, Thanh et al., (2017) conducted research on Vietnam's stock market and the interaction of the two policies. They found a close nexus of the policies and Vietnam's stock market using VECM. They suggest that a rise in the supply of money in an economy via the expansionary monetary policy would have a beneficial effect on the market in the short run. Compared to the contractionary monetary policy, which has an inverse effect. Furthermore, in the long run, the reverse

is the case as the high inflow of money supply will cause a rise in future inflation, then harm the economy (stock market). Adding to the result, they said that the expansionary fiscal policy has an adverse effect in both short and long run on the stock market. Similar in the case of the tight fiscal policy towards its impact on the stock market. While in the case of Thailand, Prukumpai & Sethapramote (2019) used the structural vector autoregressive (SVAR) model of analysis and noted a significant reaction of these policies on the Thai stock market. They also note that the real sector and the financial sector been affected positively via fiscal and monetary policy interactions, even though fiscal policy is faster in a shorter period compared to monetary. A causality test was done, resulted in a bi-directional cause of monetary policy with the real sector but not with the stock market was found.

In the case of the emerging economy, Yuan and Chen (2015), did a study on the five largest emerging market economies known as the BRICS countries. This study examined the dynamic interaction of macroeconomic determinants on the BRICS countries' economies and got a strong relationship of the monetary shock with the real economic activity. While a weak relationship of the economic activity with the fiscal policy across-country perspective. They added that the shocks impose by the monetary policy tends to have a serious consequence on the stability of price in the economy. Using a monthly data (2006m01-2016m09) to investigate the SVAR of the interaction of both fiscal and monetary policy on the Turkey stock market, Tetik and Ceylan (2016) noted the presence of strategic interaction of monetary and fiscal policy with the market. Adding that the restrictive fiscal policy, when implemented, would induce a positive shock on the stock market output, while the expansionary fiscal policy would cause a positive shock on the interest rate. Lawal et al., (2018), suggest that these policies should be considered as pairs for better performance of the market, in their

research on the interaction of fiscal and monetary policy on the Nigerian stock market. Furthermore, the market is widely sensitive to the interaction of both policy volatility.

Some researches focused on the policy separately, like in an objective to check the impact of government revenue, government spending, and government borrowing on market capitalization in Nigeria. Eyo (2016) analyze the connection between the determinants of fiscal policy and stock market performance. The result shows that government revenue and government spending had a significant influence on market capitalization in Nigeria, while government debt had no impact on the Nigerian stock exchange returns. Ogbulu (2015) found that government spending effects the stock prices negatively, while the unpaid government's domestic debt is positive.

Ogbulu, Torbira, and Umezinwa (2015) look at the connection between Nigeria's fiscal policy and stock prices, between the periods of 1985 to 2012. They employed ordinary least squares (OLS), co-integration, ECM, Granger Causality, to investigate this connection. The result shows a negative but significant association between Public expenditure and price stocks in Nigeria, and the stock prices cause a shift in public spending, money supply, and domestic debt.

On the side of the monetary policy, Osuagwu (2009) uses twenty-four years of quarterly data, to discover the linear combination of the indicators of monetary policy and the NSE. He also found out that the market return is highly affected by the monetary policy in both the long and short-run. Nwakoby and Alajekwe (2016) found a significant influence of 53% and a long-run effect of the monetary policy towards the stock market performances in Nigeria. The study suggests that policymakers in Nigeria should be aware of the unidirectional causality relationship from the stock

market to monetary policy indicators in shaping monetary policies for better stock performance.

In the connection of macroeconomic indicators and the Nigerian capital market index, Osamwonyi and Evbayiro-Osagie (2012) considered annual data from 1975 to 2005 to find the relative effect of these variables on the capital market using the VECM. The macroeconomic indicators used are fiscal deficit, exchange rates, GDP, broad money, rates of interest and inflation. The result shows these indicators exert on the yield of the Nigerian capital market index.

Amadi, Oneyema, and Odubo (2010) made a research with the use of multiple regression in search of the relationship of macroeconomic determinant with stock prices in Nigeria. Their findings show that the interaction between these determinant and stock prices are associated with the theoretical assertion and empirical analyses in some countries. Adaramola and Olugbenga (2011), also agreed with Amadi (2000) by stating that all macroeconomic indicators have a significant influence on the prices of stock in Nigeria with the exemption of the money supply and inflation rate. Furthermore, Nkechukwu, Onyeagba, & Okoh (2013) also got similar results stating that the inflation rate and monetary policy influences the stock prices negatively, while the economic growth imposes a positive impact on the stock prices. They added that both in the short and long run, a decrease in monetary policy and the inflation rate would improve return on the stock market.

Asaolu and Ogunmuyiwa (2011) also found out the movements in stock prices in Nigeria is as a result of the changes in macroeconomic determinants. In addition, a weak relationship exist between the indicators and the Nigerian average share price.

They suggest that even though there is an existence of a long-run connection between them, ASP is not considered as a key determinant of macroeconomic performance in Nigeria.

Maku and Atanda (2010) also adopted the Co-integration test to investigate the long run nexus among the macroeconomic indicators and Nigeria stock market success from 1984 to 2007. Their result shows that the NSE highly prone to the rate of inflation, money supply, exchange rate, and real output adjustments. In addition, Nigerian stock market output is highly affected by the macroeconomics forces in the long run.

Nwokoma (2002), in his research work, attempts to find a connection between some macroeconomic determinants and the stock market in the long run. The findings shows that the industrial production and three (3) month commercial bank deposit rates (interest rate) has a long-run influence on the stock prices in the market. In addition, he observed that stock market in Nigeria reacts highly to its previous prices compare to short run shifts of the macroeconomic indicators.

In a study of the relationship of four company fundamentals and equity return of the Indian stock market. The researcher made the use of book equity to market equity ratio, debt-equity ratio, market capitalization, and price-earnings ratio as the four company fundamentals. He observed that both book equity and debt-equity ratio, insert a positively significant relationships with equity yield, whereas market capitalization and price-earnings ratio shows a negatively significant relationships with equity yield in India (Tripathi, 2008).

Ologunde, Elumilade, and Asaolu (2006) consider the interaction of interest rate and stock market capitalization rate in Nigeria by the use of regression analysis. The findings indicate that the predominant interest rate positively affects the rate of market capitalization. Furthermore, the interest rate is negative towards the stock rate development of the government.

In terms of inflation, Udegbumam and Eriki (2001) found a high correlation exists between inflation and stock price, which indicates inflation negatively affecting the stock price behaviors in Nigeria. Furthermore, the study revealed that economic activity such as money stock, financial deregulation, and interest rate also influence Nigeria's stock prices. Omotor (2011) suggests that the return of this market can be used effectively to hedge against inflation in Nigeria.

Zhao (1999), made research on the Chinese economy, taking account of the relationships among output, inflation, and stock prices. He got the presence of a positive nexus between unexpected output growth and stock returns, but a negative nexus towards the expected output growth and China's return on stock. In addition, the nexus between stock prices and inflation is also significant but negative.

Tsoukalas (2003), used the Vector Autoregressive model in analyzing the interactions between the macroeconomic determinants and stock price in Cyprus. The macroeconomic indicators used are the industrial production, exchange rate, consumer prices, and money supply. The result indicates a significant interaction between the determinants and the Cyprus stock prices.

From the various empirical reviews, we can say that fiscal and monetary policy shows a strong interaction with the stock market in an economy. Both policies have helped to enhance the stock market performance of the various economy. Below is the summary of related literatures:

Table 2.1: Related Literatures

Author (s)	Area covered	Period	Methodology	Result
Fiscal and Monetary Policy				
Chatziantoniou et al., (2013)	3 Advanced Economies	1991:1 to 2010:4	SVAR	Existence of a relationship
Prukumpai & Sethapramote (2019)	Thailand	1996:1 to 2017:4	SVAR	A significant reaction of the market towards the policies.
Thanh et al., (2017)	Vietnam	2002:1 to 2015:10	VECM	Both policies exert on the market
Tetik and Ceylan (2016)	Turkey	2006:01 to 2016:09	SVAR	A strategic interaction between monetary and fiscal policies on the market
Lawal et al., (2018)	Nigeria	1985 to 2015	ARDL	The market is widely sensitive to the interaction of both policies volatility
Nwaogwugwu	Nigeria	1970 to 2016	ARDL	Found the macroeconomics variables have a significant effect on the stock market
Fiscal Policy				
Eyo (2016)	Nigeria	1980 to 2012	OLS	The market capitalization is influence by the fiscal policy
Ogbulu, Torbira, and Umezina (2015)	Nigeria	1985 to 2012	ECM, Granger Causality	A negative relationship of fiscal policy and the stock prices
Monetary Policy				
Blomberg and Forell (2020)	Swedish	2007 to 2019	An average abnormal return and cumulative	Monetary policy exert an effect on the stock prices.

			average abnormal return	
Osuagwu (2009)	Nigeria	1984:1 to 2007:4	co-integration and error-correction model	Stock market return is highly affected by the monetary policy
Nwakoby and Alajekwe (2016)	Nigeria	1986 to 2013	Johansen co-integration and granger causality	A 56% significant relationship exist between the market and the monetary policy
Macroeconomic Variables				
Osamwonyi and Evbayiro-Osagie (2012)	Nigeria	1975 to 2005	VECM	It shows the relationship of the market and the indicators

Chapter 3

DATA AND METHODOLOGY

3.1 Data Type and Source

In this part, the type of data and the sources collected are presented. It also outline the methodology used and the interpretation of the analysis. Furthermore, it provides a comprehensive analysis of the research design and method utilized in the actualization of the study's aim.

3.1.1 Data Type

This research, made used of one type of data collection, which was the secondary data. The choice of data is secondary as the study is based mainly on content analysis, and also it avoids information bias. Moreover, a wide variety of literature was covered relating to the keywords: Monetary Policy, Fiscal Policy, and Stock Market. Ghauri and Gronhaug (2005) suggested that all good research work should start with secondary data because it enriches the research with good information. This research work covered an annual time series of 1981 to 2018.

3.1.2 Data Source

The Central Bank of Nigeria Statistical Bulletin 2018 and World Bank Indicator are the sources of our secondary data. Government Capital Expenditure (GOVEXP) is used as a proxy to Fiscal Policy, whereas Broad Money (M2) and Real Interest Rate are both used as a proxy to Monetary Policy. Furthermore, the NSE market capitalization (SMC) represents the stock market growth, while the Real Gross Domestic Product (RGDP) and Inflation rate (INFR) represent the interactions of both

policies. The research work of Nwaogwugwu (2018), and Abaenewe and Ndugbu (2012) were taken as reference for the selected variables of this study. The table below shows the sources of the variables used:

Table 3.1: Sources of Variables

NAME OF VARIABLE	INDICATOR	SOURCE
GDP	Real GDP	National Bureau of Statistics (NBS)
GEXP	Government Capital Expenditure (₦' Billions).	Federal Ministry of Finance & Central Bank of Nigeria
Inflation Rates	Inflation Rates	National Bureau of Statistics.
M2	Broad money (% of GDP)	International Monetary Fund, International Financial Statistics and data files, and World Bank and OECD GDP estimates.
Interest Rate	Real Interest Rates (%)	International Monetary Fund, International Financial Statistics and data files using World Bank data on the GDP deflator.
Stock Market Return	Total annual market capitalization on NSE (₦' Billions).	Nigerian Stock Exchange.

The Real GDP is the total value of goods and services produced in a nation within a period where inflation is adjusted. The Central bank statistical bulletin calls it the GDP at Constant Basic Prices, which is GDP at 2010 Producers Price fewer taxes on expenditure plus subsidies. This is an instrument used to measure the economic growth or health of a nation's economy. Whereas, Broad Money is the supply of money in forms of liquid and illiquid form in an economy. Both of these variables are expected to have a positive relationship with the stock market. Nkechukwu, Onyeagba, and Okoh, (2013) used GDP and Broad Money as the variables that influence the stock market in their researched work. In the long run, GDP has a negative effect on stock price, while Broad Money is related positively with the stock price in the long run.

Federal Government Capital Expenditure is a part of government expenditure that covers the creation of assets and also an investment. This variable should positively influence the market. Eyo (2016) and Darrat (1988), in their study, found that government expenditure effects on the Nigerian stock market development. The current and lagged value of Government total expenditure exerts a negative impact on the stock price in Nigeria, stated by Ogbulu et al. (2015).

Inflation, on the other hand, is the general increase in an economy's price level of goods and services. This variable is considered to insert a negative relationship with the stock market since it reduces the money spent on investment and also decreases the share price relative to current earnings (Feldstein, 1978). Saryal (2007), in her work, found the Turkey stock market to be significantly connected with the inflation rate, where a higher rate of inflation triggers higher volatility (risk) in the stock market. It is also known as nominal rate minus inflation, according to Fisher's equation. When a lower interest rate exists, the stock market returns tends to grow in the economy.

Stock Market Capitalization represents the overall market value of listed companies' outstanding shares on a stock exchange. It is gotten by multiplying the price of market share and the volume of outstanding shares in the market.

3.2 Methodology

Econometrics is used to find out the interaction between the fiscal and monetary policy with the stock market performance. Here, our dependent variable is the stock market returns, which is represented with the Stock Market Capitalization. On the other hand, our explanatory variables are the variables proxy to both policies, as mentioned in our data source section above. This is done to achieve our goal of finding out the

connection between stock market returns and both policies. Below is the linear regression:

$$SMC_t = \alpha + \beta_1 M2_t + \beta_2 RIR_t + \beta_3 GDP_t + \beta_4 GOVEXP_t + \beta_5 INFR_t + \mu_t \quad (1)$$

$$LNSMC_t = \alpha + \beta_1 M2_t + \beta_2 RIR_t + \beta_3 LNGDP_t + \beta_4 LNGOVEXP_t + \beta_5 INFR_t + \mu_t \quad (2)$$

SMC = Stock Market Capitalization

M2 = Money Supply

RIR = Real Interest Rate

GDP = Gross Domestic Product

GEXP = Government Expenditure

INFR = Inflation Rates.

The symbol α represent the intercept or constant of the model, while $\beta_1, \beta_2, \beta_3, \beta_4,$ and β_5 are the slops coefficient or parameters of our independent variables. The disturbance error or the stochastic error term is represented by the symbol “ μ ”, while the LN is the log of our variables. The rate of real interest, inflation rate and money supply are not in log form since the variables are already in percentage.

3.2.1 Stationarity Test

To avoid the well-known problem of time series data of being non-stationary, the study adopted the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests of stationarity to prevent it. The ADF was derived by Dickey and Fuller (1979), which is the adjusted model to the former Dickey-Fuller test. Whereas, the Phillips-Perron test was by Phillips and Pierre Perron (1988) through the Dickey-Fuller test of hypothesis. Both examined the stationarity of the variables at various levels, such as the first difference and level (current form), and no constant no trend. These stages regressions are as follows:

- No constant, no trend: $\Delta y_t = \gamma y_{t-1} + v_t$ (3)

- Constant, no trend : $\Delta y_t = \alpha + \gamma y_{t-1} + v_t$ (4)

- Constant and trend : $\Delta y_t = \alpha + \gamma y_{t-1} + \lambda_t + v_t$. (5)

The stationarity test has a hypothesis that goes as follows:

H_0 = non-stationary

H_1 = stationary.

In an attempt to reject the null hypothesis, the test statistic must be greater than the critical values of 1%, 5%, and 10%, considering the test statistic value as an absolute value.

3.2.2 Autoregressive Distributed Lag Model (ARDL)

The ARDL bounds test is performed to check for co-integration between the variables.

The ARDL and the error correction model, would be conducted as a result of the existence of long run nexus between the policies and the stock market in Nigeria. Error correction term measures the speed of adjustment from disequilibrium short run to long run equilibrium. Furthermore, diagnostic tests such as Normality, Heteroscedasticity, and Autocorrelation test, will be, performed to examine the model's goodness. The study will also check for the stability of the ARDL model.

Below is the ARDL equations:

$$\begin{aligned} \text{LNNSMC}_t = & a_{01} + \sum_{i=1}^k \sigma_{11} \Delta \text{LNNSMC}_{t-i} + \sum_{i=0}^k \sigma_{12} \Delta \text{M2}_{t-i} + \sum_{i=0}^k \sigma_{13} \Delta \text{RIR}_{t-i} + \\ & \sum_{i=0}^k \sigma_{14} \Delta \text{LNNGDP}_{t-i} + \sum_{i=0}^k \sigma_{15} \Delta \text{LNNGOVEXP}_{t-i} + \sum_{i=0}^k \sigma_{16} \Delta \text{INFR}_{t-i} + \rho_{11} \text{LNNSMC}_{t-1} \\ & + \rho_{12} \text{LNM2}_{t-1} + \rho_{13} \text{LNRIR}_{t-1} + \rho_{14} \text{LNNGDP}_{t-1} + \rho_{15} \text{LNNGOVEXP}_{t-1} + \rho_{16} \text{LNINFR}_{t-1} \\ & + \mu_t \end{aligned} \quad (6)$$

$$\Delta \text{LNSMC}_t = a_{01} + \sum_{i=1}^k \sigma_{11} \Delta \text{LNSMC}_{t-i} + \sum_{i=0}^k \sigma_{12} \Delta \text{LNM2}_{t-i} + \sum_{i=0}^k \sigma_{13} \Delta \text{LNRIR}_{t-i} + \sum_{i=0}^k \sigma_{14} \Delta \text{LNGDP}_{t-i} + \sum_{i=0}^k \sigma_{15} \Delta \text{LNGOVEXP}_{t-i} + \sum_{i=0}^k \sigma_{16} \Delta \text{LNINFR}_{t-i} + \alpha \text{ECT}_{t-1} + \mu_t \quad (7)$$

In equation 6, the Δ represent the first difference operator and the LN as the log form of the variables as earlier stated. The a_{01} represent the constant, while $\sigma_{11} \dots \sigma_{16}$ represent the short run estimators and $\rho_{11} \dots \rho_{16}$ shows the long run estimators. Finally, the “k” represent the length lags, while μ_t is the error term. Furthermore, equation 7 is used for the error correction model. Where the αECT_{t-1} represent the error correction term, which measure the speed of adjustment from short run disequilibrium to long run equilibrium.

3.2.3 Causality Test

Finally, the study examines the monetary policy, the stock market yield, and fiscal policy causality in Nigerian with the aid of the Granger causality test. It done to check each variable's contribution to other variables in the model and also predict the potential contribution of these variables. For this test to be done, the variables must be stationary. The study follows the formula of Granger (1996), who stated an equation on a relationship of two variables model. He states that the two variables are stationary, and their error term is also uncorrelated, which allows for a simple casual model. The outcome would be one variable causing the other, with the variable's coefficient not equal to zero.

$$\begin{aligned} \text{LNSMC} &= \beta_0 + \sum_{j=1}^q \beta_{1j} \text{LNSMC}_{t-j} + \sum_{j=1}^q \phi_{1j} \text{M2}_{t-j} + \sum_{j=1}^q \Omega_{1j} \text{RIR}_{t-j} + \sum_{j=1}^q \lambda_{1j} \\ &\text{LNGDP}_{t-j} + \sum_{j=1}^q \varphi_{1j} \text{LNGOVEXP}_{t-j} + \sum_{j=1}^q \delta_{1j} \text{INFR}_{t-j} + \eta_t \\ \text{M2} &= \phi_0 + \sum_{j=1}^q \phi_{1j} \text{M2}_{t-j} + \sum_{j=1}^q \beta_{1j} \text{LNSMC}_{t-j} + \sum_{j=1}^q \Omega_{1j} \text{RIR}_{t-j} + \sum_{j=1}^q \lambda_{1j} \text{LNGDP} \\ &_{t-j} + \sum_{j=1}^q \varphi_{1j} \text{LNGOVEXP}_{t-j} + \sum_{j=1}^q \delta_{1j} \text{INFR}_{t-j} + \mu_t \end{aligned}$$

$$\mathbf{RIR} = \Omega_0 + \sum_{j=1}^q \Omega_{1i} \mathbf{RIR}_{t-j} + \sum_{j=1}^q \beta_{1i} \mathbf{LNSMC}_{t-j} + \sum_{j=1}^q \phi_{1i} \mathbf{M2}_{t-j} + \sum_{j=1}^q \lambda_{1i} \mathbf{LNGDP}_{t-j} + \sum_{j=1}^q \varphi_{1i} \mathbf{LNGOVEXP}_{t-j} + \sum_{j=1}^q \delta_{1i} \mathbf{INFR}_{t-j} + \varepsilon_t$$

$$\mathbf{LNGDP} = \lambda_0 + \sum_{j=1}^q \lambda_{1i} \mathbf{LNGDP}_{t-j} + \sum_{j=1}^q \beta_{1i} \mathbf{LNSMC}_{t-j} + \sum_{j=1}^q \phi_{1i} \mathbf{M2}_{t-j} + \sum_{j=1}^p \Omega_{1i} \mathbf{RIR}_{t-j} + \sum_{j=1}^q \varphi_{1i} \mathbf{LNGOVEXP}_{t-j} + \sum_{j=1}^q \delta_{1i} \mathbf{INFR}_{t-j} + \delta_t$$

$$\mathbf{LNGOVEXP} = \varphi_0 + \sum_{j=1}^q \varphi_{1i} \mathbf{LNGOVEXP}_{t-j} + \sum_{j=1}^q \beta_{1i} \mathbf{LNSMC}_{t-j} + \sum_{j=1}^q \phi_{1i} \mathbf{M2}_{t-j} + \sum_{j=1}^q \Omega_{1i} \mathbf{RIR}_{t-j} + \sum_{j=1}^q \lambda_{1i} \mathbf{LNGDP}_{t-j} + \sum_{j=1}^q \delta_{1i} \mathbf{INFR}_{t-j} + \theta_t$$

$$\mathbf{INFR} = \delta_0 + \sum_{j=1}^q \delta_{1i} \mathbf{INFR}_{t-j} + \sum_{j=1}^q \beta_{1i} \mathbf{LNSMC}_{t-j} + \sum_{j=1}^q \phi_{1i} \mathbf{M2}_{t-j} + \sum_{j=1}^q \Omega_{1i} \mathbf{RIR}_{t-j} + \sum_{j=1}^q \lambda_{1i} \mathbf{LNGDP}_{t-j} + \sum_{j=1}^q \varphi_{1i} \mathbf{LNGOVEXP}_{t-j} + \upsilon_t$$

Chapter 4

EMPIRICAL ANALYSIS AND RESULTS

4.1 Statistical Summary of Variables

Table 1: Statistical summary of variables

	LNSMC	M2	RIR	LNGDP	LNGOVEXP	INFR
Mean	5.99532	15.7241	0.19656	10.2689	4.92180	19.3651
Median	5.93069	13.2132	3.66691	10.0458	5.66526	12.7338
Maximum	9.99442	25.4480	18.1800	11.1535	7.42779	72.8355
Minimum	1.60943	9.06332	-65.857	9.53092	1.41098	5.41600
Std. Dev.	3.07951	5.37034	14.7859	0.56119	1.99237	17.2373
Skewness	-0.1118	0.67835	-2.5862	0.34441	-0.5628	1.74178
Kurtosis	1.49500	1.85887	11.9120	1.63005	1.78048	4.83928
Jarque-Bera	3.66554	4.97613	168.116	3.72279	4.36106	24.5705
Probability	0.15996	0.08307	0.00000	0.15545	0.11298	0.00000
Sum	227.822	597.515	7.46947	390.219	187.028	735.876
Sum Sq. Dev.	350.886	1067.10	8089.04	11.6527	146.873	10993.6
Observations	38	38	38	38	38	38

The Descriptive Statistical table 1 express the Jarque-Bera Probability, mean, variance, and other output of the variables in the model. The probability of Jarque-Bera stands for the existence of a normal distribution of these variables, and for a normal distribution to be present, it must be greater than 5%. In this case, all the variables are

normally distributed except for RIR and INFR, which are not. The mean of these variables is higher than the standard deviation of the variables, which is also an indication of variables being normally distributed. From the table, all our variables are having the same observation of 36. Next the stationarity of the variables was discussed.

4.2 Stationarity Testing

The stationarity test is a key test conducted on time series data, due to the well-known problem of time series data having a unit root at level form, meaning variables don't have constant mean and variance. This problem can lead to a serious potential problem in the econometric analysis by resulting in a spurious result of a model. The Augmented Dickey-Fuller test (Dickey & Fuller, 1981) and Phillips-Perron test (Phillips & Perron, 1988) tests of stationarity were done to avoid this problem. Before conducting the root test, the graphical result of the variables was checked.

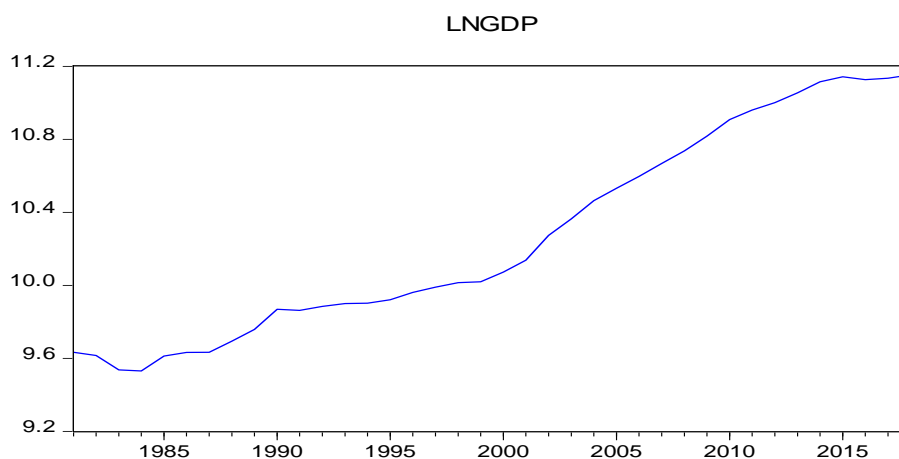


Figure 4.1: Graphical representation of the log of GDP

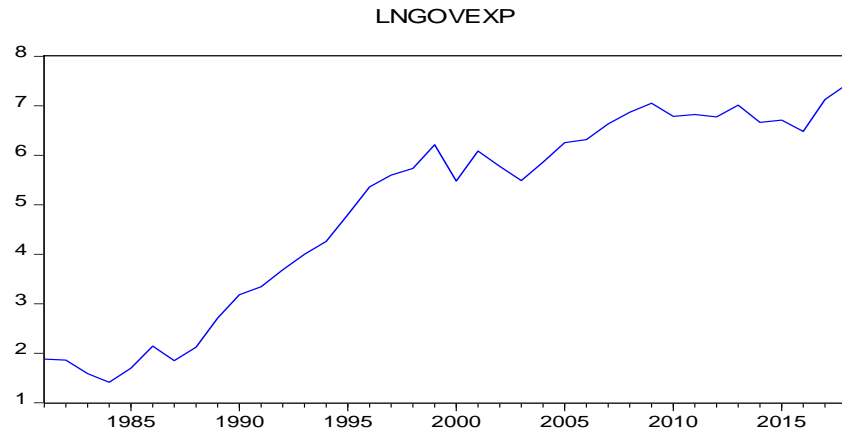


Figure 4.2: Graphical representation of the log of GOVEXP

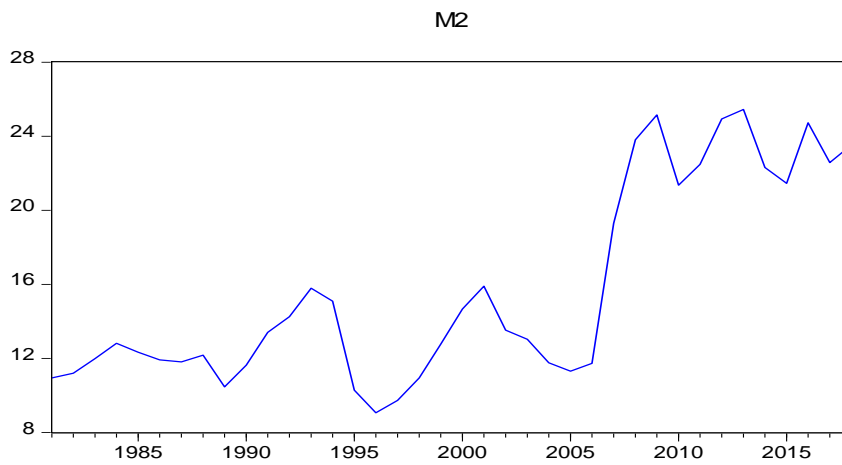


Figure 4.3: Graphical representation of the log of M2

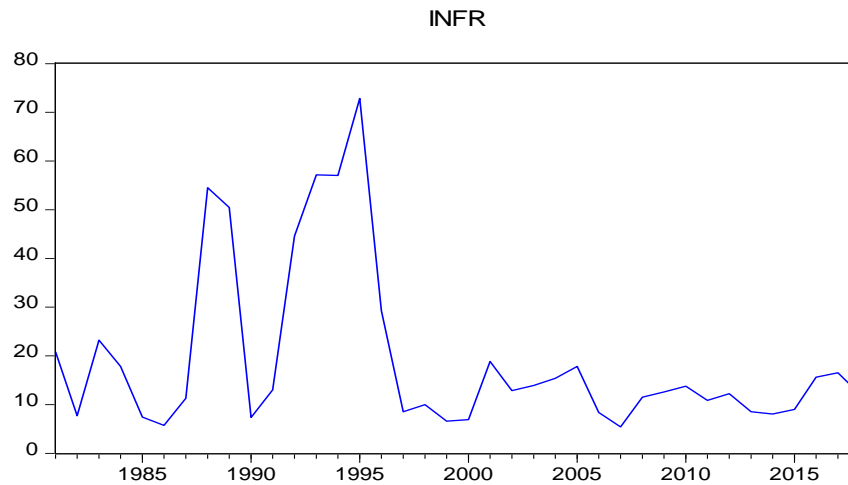


Figure 4.4: Graphical representation of the log of INFR

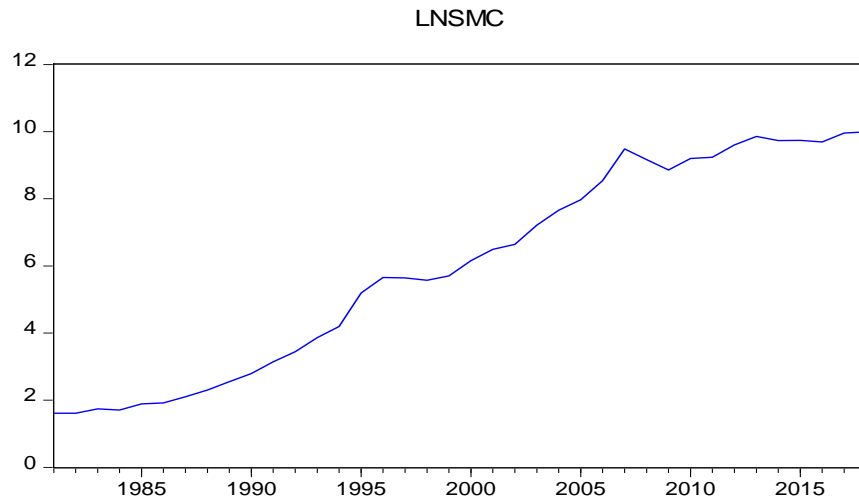


Figure 4.5: Graphical representation of the log of SMC

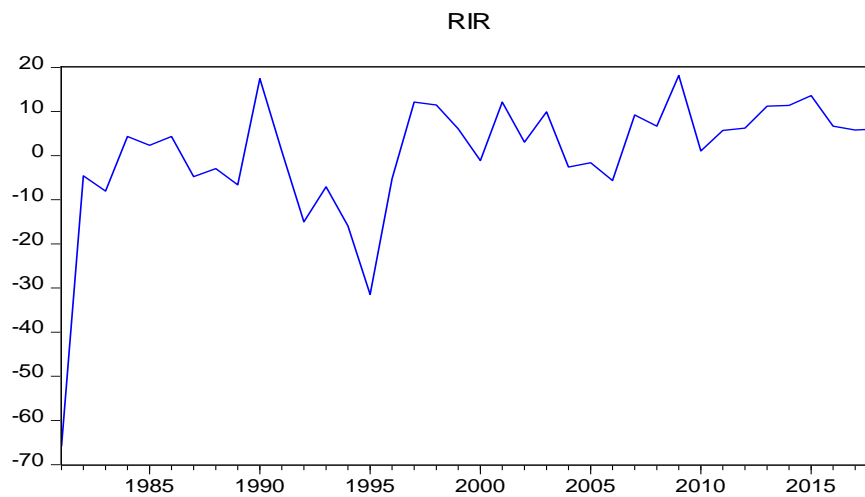


Figure 4.6: Graphical representation of the log of RIR

From the various figures drawn above, LNGDP, LNGOVEXP, M2, INFR, and LNSMC are not stationary in their graphical form. On the other hand, RIR is stationary. Below are the tests that bring to the conclusion of the state of stationarity of the variables.

Table 4.2: Stationarity (ADF)

Variables	At Level 1(0)			First Difference 1(1)			Remark
	C	C&T	N	C	C&T	N	
LNSMC	-0.595	-1.233	1.896	-4.60*	-4.582*	-3.201*	I(1)
Lag length	0	1	1	0	0	0	
M2	-0.992	-2.934	0.558	-4.59*	-4.543*	-4.571*	I(1)
Lag length	0	1	0	0	0	0	
RIR	-7.159*	-7.39*	-7.09*	-9.68*	-9.437*	-9.851*	I(0)
Lag length	0	0	0	0	0	0	
LNGDP	-0.027	-1.503	2.499	-3.35**	-3.3***	-2.136**	I(1)
Lag length	1	2	1	0	0	0	
LNGOVEXP	-0.886	2.168	-1.8***	-6.272*	-6.260*	-2.742*	I(1)
Lag length	0	0	0	0	0	1	
INFR	-2.8***	-3.9**	-1.8***	-5.58*	-5.511*	-5.664*	I(1)
Lag length	0	1	0	0	0	0	

Note: *=1% significance level, **=5% significance level, and ***=10% significance level to reject the null hypothesis. **C** indicates the Intercept, **C&T** serves as Intercept and Trend, while **N** means no intercept and trend.

Table 4.3: Stationarity test (PP)

Variables	At Level 1(0)			First Difference 1(1)			Remark
	C	C&T	N	C	C&T	N	
LNSMC	-0.594	-1.562	0.793	-4.625*	-4.523*	-3.080*	I(1)
LNM2	-0.774	-1.985	1.019	-5.392*	-6.185*	-4.424*	I(1)
LNRIR	-6.940*	-7.090*	-6.71*	-28.50*	-29.82*	-20.74*	I(0)
LNGDP	0.684	-2.570	0.259	-3.24**	-3.2***	-1.95**	I(1)
LNGOVEXP	-0.883	-1.468	1.044	-6.268*	-6.262*	-5.456*	I(1)
LNINFR	-2.7***	-2.823	-1.7***	-9.415*	-10.31*	-9.797*	I(1)

Note: *=1% significance level, **=5% significance level, and ***=10% significance level to reject the null hypothesis. **C** indicates the Intercept, **C&T** serves as Intercept and Trend, while **N** means no intercept and trend.

The table 4.2 and 4.3 indicates the test of the unit root (non-stationarity), conducted on our variables by the use of the Augmented Dickey-Fuller test and PhillipsPerron test. The result shows that Stock Market Capitalization, Broad Money, GDP, Inflation Rate, and Government Expenditure are all stationary at first difference, while the Real Interest Rates is stationary at level. Since the variables are of a mixture of I(0) and I(1), using Autoregressive Distributed Lag (ARDL) model is not a problem, unlike other co-integration models that cannot. The bounds test used to conduct the long-run connection of variables in the model was initiated by Pesaran, Shin, and Smith in 2001.

4.3 Autoregressive Distributed Lag Model (ARDL)

This model consists of dependent and independent variables, where the independent or explanatory variable contains the lagged value or values of the dependent and the explanatory variables. It also includes the endogenous and exogenous variables. This model helps out in obtaining an unbiased long-run estimate. The ARDL bounds test would be conducted to find out if the variables are co-integrated and if they are, the short and long run nexus among the variables would be conducted alongside the Error Correction Model. On the other hand, if it results in no co-integration, only the short run would be conducted.

4.3.1 Bounds Cointegration Test

The bounds test hypothesis is as follows:

$H_0: \rho_1 = \rho_2 = \rho_3 = \rho_4 = \rho_5 = \rho_6 = 0$ (No Cointegration),

$H_1: \rho_1 \neq \rho_2 \neq \rho_3 \neq \rho_4 \neq \rho_5 \neq \rho_6 \neq 0$ (Cointegration).

In rejecting the null hypothesis, the 5% significant level is used. If the F-Statistic is > the critical value of the upper bound I(1), it means there is co-integration among the variables, thereby reject the null hypothesis. In addition, a long-run relationship among

the variables is seen. But if it results in the F-statistic being $<$ the critical value of the lower bound $I(0)$, it means no long run relationship in the model and fail to reject the null hypothesis.

Table 4.4: Lag Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-413.3243	NA	2077.612	24.66613	24.93549	24.75799
1	-222.0411	303.8027	0.232327	15.53183	17.41733	16.17484
2	-179.6290	52.39146	0.196498	15.15465	18.65630	16.34881
3	-132.6014	41.49495	0.191335	14.50596	19.62376	16.25128
4	-26.92558	55.94601*	0.015584*	10.40739*	17.14133*	12.70385*

Table 4.5: The Bounds Co-integration Test

Model	Without Trend		With Trend	
	F_s	T_r	F_s	T_r
LNSMC (LNM2, LNRIR, LNGDP, LNGOVEXP, LNINFR)	9.0896*	-4.426**	11.2747*	-5.3076*

Note: *=1%, **=5%, and ***=10% as level of significance to reject the null hypothesis. F_s and T_r represent the F-Statistic and T-Statistic respectively of constant without trend and constant with trend.

From table 4.4 of the lag selection, Lag four (4) was chosen due to its lowest value seen in most of the Information Criteria and would be used to run the ARDL model. The bound test result from table 5, used the AIC to determine the F-Statistic, which was greater than the critical value of the upper bound $I(1)$ using a 5% significant level. Here, the null hypothesis is rejected, meaning the variables are co-integrated, and they produce a long-run relationship. Furthermore, the short-run, long-run, and the error correction model among the variables were conducted using the ARDL test.

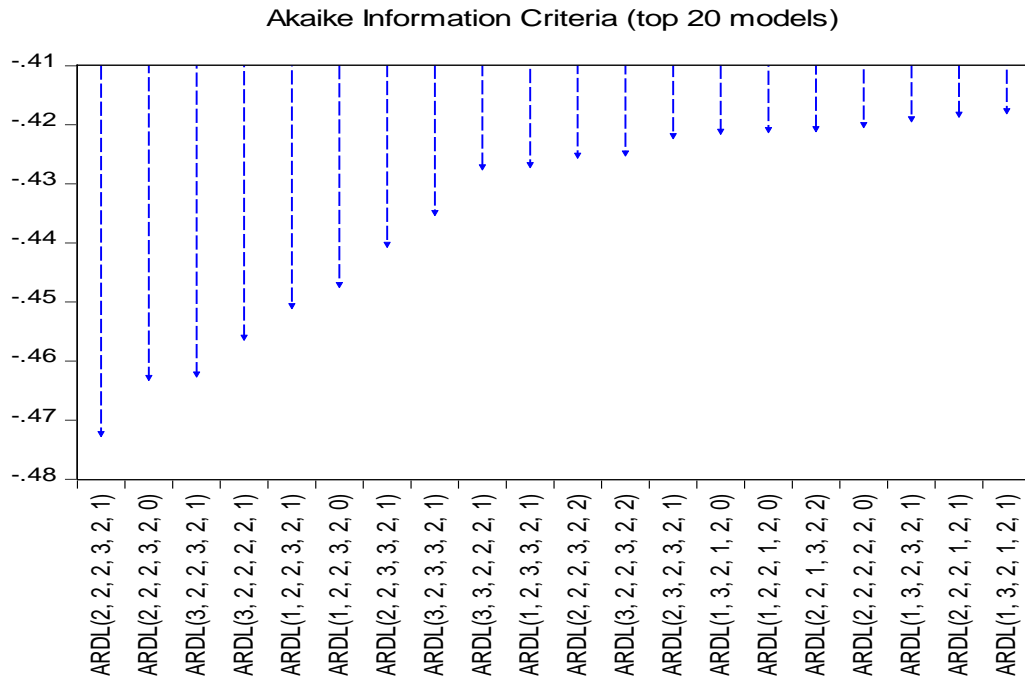


Figure 4.7: The Model selection criteria graph

Table 4.6: The ARDL model of long-run coefficient (unrestricted constant and no trend)

Dep. Variable	Explanatory Variables	Coefficient	Std. Error	T-Statistic	Prob.
LN _{SMC}	M2	-0.077093	0.030768	-2.505626	0.0227
	RIR	-0.098813	0.022335	-4.424181	0.0004
	LNGDP	4.077969	0.404964	10.06995	0.0000
	LNGOVEXP	0.671995	0.064441	10.42809	0.0000
	INFR	-0.021223	0.006837	-3.103991	0.0064

Table 4.7: The Short-run coefficient and Error correction model

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-23.90822	2.861692	-8.354574	0.0000
ECT(-1)	-0.643702	0.076621	-8.401121	0.0000
Δ (LN _{SMC} (-1))	-0.186339	0.110321	-1.689054	0.1095
Δ (M2)	0.004997	0.014332	0.348700	0.7316
Δ (M2(-1))	0.044288	0.017492	2.531946	0.0215
Δ (RIR)	-0.029654	0.004350	-6.817089	0.0000
Δ (RIR(-1))	0.009329	0.003702	2.520131	0.0220

Δ (LNGDP)	4.348970	0.958561	4.536977	0.0003
Δ (LNGDP(-1))	1.583657	0.880469	1.798651	0.0899
Δ (LNGDP(-2))	-1.442435	0.792144	-1.820925	0.0863
Δ (LNGOVEXP)	0.063142	0.089600	0.704712	0.4905
Δ (LNGOVEXP(-1))	-0.454529	0.102710	-4.425383	0.0004
Δ (INFR)	-0.009010	0.002773	-3.249301	0.0047

Figure 4.7 point out twenty models that can be conducted using Akaike Information Criteria. From the twenty different models, Akaike Information Criteria selected model (2, 2, 2, 3, 2, 1) as the best model, which was used to conduct the ARDL short run and long run nexus of the variables.

Table 4.6 display the ARDL long-run coefficient of the model using Akaike Information Criteria. Here, the broad money is negatively significant towards the market capitalization. This means a percentage change of 1% in the broad money supply would result in a fall of 0.077% in the value of the Nigeria stock market capitalization. This can be a result of excessive money in circulation that might lead corporations to raise funds in other areas rather than the stock market, which tends to reduce the market value of the exchange. Moreover, the rise in the money supply gravitates an economy to inflation in the long run, where high inflation is known to aggravate low stock value. Aziza (2010) found a similar result in his study of various countries in the world, stating that broad money and quasi money growth insert a negative impact on the Nigerian stock market growth, both short and long run. Also, Nwaogwugwu (2018) found a negative and statistically significant Money supply with the stock market growth in Nigeria.

Also, the real interest rate and inflation rate are both negative and statistically significant, using a 5% significant level. Which mean a 1% change in the real interest rate and the inflation rate would indicate a decrease of 0.098% and 0.021% respectively in the long run. Furthermore, both GDP and government capital expenditure are statistically significant and positive on the market capitalization. Here, a 1% change in GDP and government capital expenditure in the long-run, would lead to an increase of 4.077% and 0.671% respectively in stock market capitalization in Nigeria. As a result of this, all the variables exert the growth of the stock market in the long run.

The short-run coefficient model shows that the real interest rate is statistically significant at its current state and one lag in table 4.7. Where the current state impacts the stock market capitalization negatively, and one lag has a positive influence in the short run. Okpara (2010) found a similar result in his findings, where the current interest rate and one lag period influences the market positively. The gross domestic product is also positively significant on the Nigerian stock market capitalization in the short run. While on the other hand, the one lag period of government capital expenditure and the current inflation are both negative and statistically significant. This means both in short run exert a negative effect on the Nigerian stock market capitalization.

The error correction term (ECT(-1)) is negatively significant as anticipated. It means the speed of adjustment from disequilibrium short run back to the long run equilibrium of 64.3%. In summary, Money Supply influences the market in long-run but does not in the short-run. Whereas, the other variables in model are all influencing the Nigerian stock market in both the long and short run. In summary, both policies exert either

positive or negative influence on the stock market growth. This result supports the study of Chatziantoniou et al. (2013), which state that both policies have an indirect or direct influence on the stock market. The R-Square and Adjusted R-Square are 83% and 74% respectively, which means that the macroeconomic variables proxy to both policies explain 83% of the stock market capitalization, which is proxy to the stock market growth. Also, the F-statistic, which has a 0.000 prob-value, signifies a good model.

Table 4.8: Diagnostic tests

Test Name	F Prob.
Normality	0.2573
Heteroscedasticity, Breusch-Pagan-Godfrey	0.1561
Breusch-Godfrey Serial Correlation LM Test	0.0856

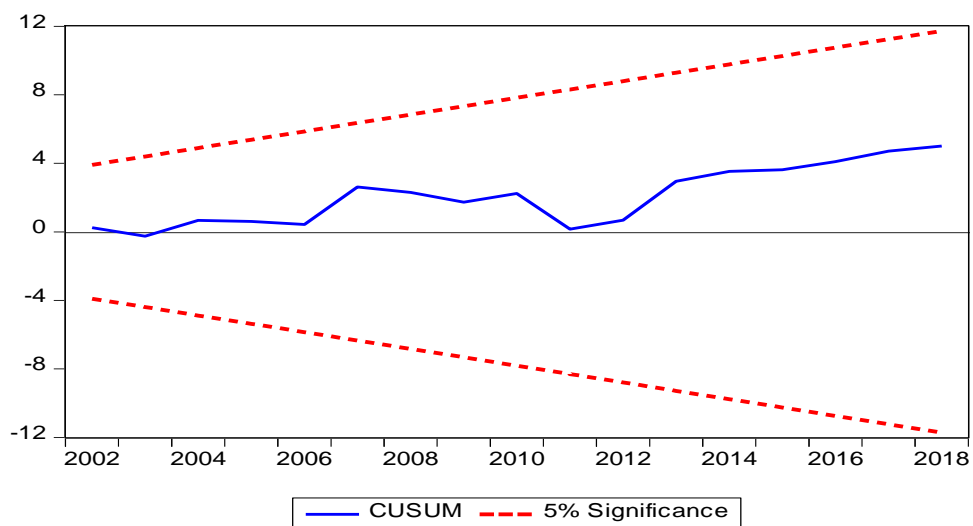


Figure 4.8: The CUSUM Test

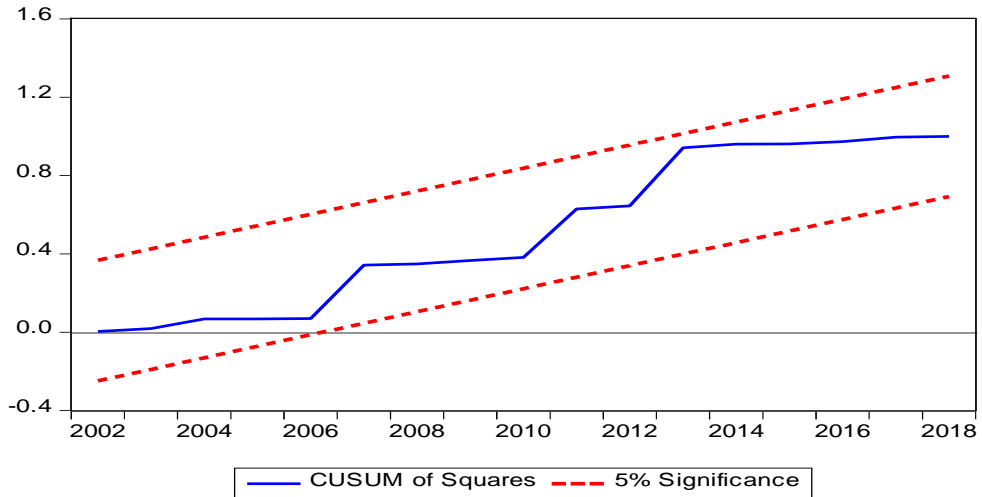


Figure 4.9: CUSUM of Squares Test

Table 4.9: Causality Tests

Hypothesis	P. Value	Decision	Lag
DM2 \longrightarrow DLNSMC	0.1486	Fail to reject	1
DLNSMC \longrightarrow DM2	0.2172	Fail to reject	1
DRIR \longrightarrow DLNSMC	0.1571	Fail to reject	1
DLNSMC \longrightarrow DRIR	0.1614	Fail to reject	1
DLNGDP \longrightarrow DLNSMC	0.7749	Fail to reject	1
DLNSMC \longrightarrow DLNGDP	0.4535	Fail to reject	1
DLNGOVEXP \longrightarrow DLNSMC	0.6780	Fail to reject	1
DLNSMC \longrightarrow DLNGOVEXP	0.0320	Reject	1
DINFR \longrightarrow DLNSMC	0.6726	Fail to reject	1
DLNSMC \longrightarrow DINFR	0.1930	Fail to reject	1
DRIR \longrightarrow DM2	0.9228	Fail to reject	1
DM2 \longrightarrow DRIR	0.1725	Fail to reject	1
DLNGDP \longrightarrow DM2	0.7117	Fail to reject	1
DM2 \longrightarrow DLNGDP	0.4273	Fail to reject	1
DLNGOVEXP \longrightarrow DM2	0.9263	Fail to reject	1
DM2 \longrightarrow DLNGOVEXP	0.9508	Fail to reject	1
DINFR \longrightarrow DM2	0.1575	Fail to reject	1
DM2 \longrightarrow DINFR	0.0430	Reject	1
DLNGDP \longrightarrow DRIR	0.8949	Fail to reject	1
DRIR \longrightarrow DLNGDP	0.0451	Reject	1
DLNGOVEXP \longrightarrow DRIR	0.8515	Fail to reject	1
DRIR \longrightarrow DLNGOVEXP	0.0889	Fail to reject	1
DINFR \longrightarrow DRIR	0.5607	Fail to reject	1
DRIR \longrightarrow DINFR	0.8562	Fail to reject	1
DLNGOVEXP \longrightarrow DLNGDP	0.9245	Fail to reject	1
DLNGDP \longrightarrow DLNGOVEXP	0.9560	Fail to reject	1

DINFR	→	DLNGDP	0.0384	Reject	1
DLNGDP	→	DINFR	0.4078	Fail to reject	1
DINFR	→	DLNGOVEXP	0.3512	Fail to reject	1
DLNGOVEXP	→	DINFR	0.0226	Reject	1

Table 4.8 consists of the various diagnostic tests conducted on the ARDL model. Here, it shows that the model does not have a problem of unequal spread, looking at the Heteroscedasticity prob-value which is not significant considering the 5% significant level. Also, the Normality test, which tests the state of normality of the residuals in a model, indicates that this model residuals are normally distributed. While in the test for the serial correlation or autocorrelation of residuals. The residuals are not serially correlated. The study also checked for the stability of the model, using the CUSUM and the CUSUM of Squares test. These test indicates the model to be stable.

From the result in table 4.9, a causality of a unidirectional connection is seen running from stock market capitalization to government expenditure, which signifies that changes in stock market capitalization have a cause on the government expenditure but not vice versa. While in the event of stock market capitalization with other variables, an independent relationship exist between them, where none causes the other. A similar result in the case of money supply with real interest rate, economic growth, and government expenditure, were an independent relationship also exist between them and not causing each other. Moreover, money supply has a unidirectional relationship when it comes to inflation rate, which means money supply adjustments induce changes in inflation rate but reverse is not the case for inflation rate to money supply. Inflation rate on the other hand exhibit a unidirectional relationship with GDP, this means inflation rate granger cause the economic growth but not vice versa. In the case of GDP and RIR, a similar result of unidirectional

relationship exist between them, which indicates that changes in the real interest rate causes changes in economic growth but not vice versa. Whereas, the real interest rate coexist an independent relationship, when it comes to government expenditure and inflation rate, were none causes the other. Furthermore, the government capital expenditure and economic growth exhibit an independence relationship between them, which means there is no Granger causality in any direction. The government capital expenditure and inflation rate have a unidirectional relationship, which means government expenditure causes the direction of inflation rate but similar case cannot be found in the case of inflation rate to government expenditure.

Chapter 5

CONCLUSION AND POLICY IMPLICATION

The study investigate the interaction of monetary and fiscal policy on the Nigerian stock market growth from 1981 to 2018. The study made use of EVIEWS to conduct the analysis. In running analysis, the Augmented Dickey-Fuller and Phillips-Perron test were used to check for the unit root of the time series macroeconomic variables. This results in a mixture I(0) and I(1) of the variables, which leads to the use of ARDL in determining the relationship of the variables. Stating the Stock Market Capitalization as the dependent variable and the Broad Money, Real Interest Rate, GDP, Government Expenditure, and Inflation Rate as the explanatory variables of the model used. The ARDL Bounds test shows a long run relationship between the policies and the stock market. Meaning the stock market in Nigeria is influence by the monetary and fiscal policies in the long run.

In addition to the long run, the short-run relationship and the ECM of the variables were analyzed. The ECM concludes a speed of 64.3% in the adjustment from the disequilibrium short run to the long run equilibrium, which shows a great sign of adjustment. The findings reveals the existence of a relationship between Broad Money, Government Expenditure, Real Interest Rate, GDP, and Inflation Rate with the market capitalization in both long and short run. That is to say, both short and long run changes in these policies affects the stock market performance in Nigeria. In the case of Granger causality, a unidirectional nexus between the stock market and government

expenditure exists. It indicates a one-way direction of the Nigerian stock market, causing government spending in Nigeria. While, a similar result is found between the fiscal and monetary policy, showing a one-way causality of the variables. In some cases, the variables exhibit independent relationship on each other, which means changes of one variable has no cause on the other variable and vice versa. Also, the various diagnostic tests conducted on the model shows the model to be a good one. This also indicates that reducing the interest rate and increasing the government expenditure in the country would lead to a better return of the stock market in Nigeria. The study suggests that policymakers should make use of both policies together, not separately, this is due to the significant impact both have on the market. This also means one of the policy unclogs the other to achieve a better stock market performance. Furthermore, policymakers should look closely at the rate of interest and money supply of the economy, because if these macroeconomic variables are used wrongly in any economic condition, it might result in a problem in such an economy. For instance, where the money in circulation is not sufficient enough to run the activities in an economy, this might attract the issue of deflation in such an economy. Policymakers can resolve this problem by increasing the supply of money in such an economy and other factors. While for the case of inflation, policymakers can resolve this problem by increasing the interest rate and increasing taxes by the government. The result of this study can be of assistance to investors in knowing the nexus between the stock market and macroeconomic variables for better investment decision and policymakers like the Central Bank of Nigeria in implementing its monetary policy. Other macroeconomic variables that can be considered are Exchange Rate and Tax. Where a high Exchange rate that favors the domestic currency, indicates a good economy, would leads foreign investors to invest in such a market and thereby leading

to an increase in the stock market return. Tax, on the other hand, increases the stock market return when it been reduced by the government.

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