NEAR EAST UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

ECONOMIC DEPARTMENT

MASTER'S PROGRAMME

MASTER'S THESIS

AN ANALYSIS OF THE IMPACT OF EXCHANGE RATE FLUCTUATIONS ON ECONOMIC GROWTH OF NIGERIA

UMAR ALIYU SHUAIBU

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Economics Master's Program

Thesis Defence

An Analysis of the Impact of Exchange Rate Fluctuations on Economic Growth of Nigeria

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We Certify the Thesis Is Satisfactory for the Award of the Degree of Master of Science in Economics

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DEDICATION

This research work is above all dedicated to Almighty Allah who through his infinite mercy guides and protects me throughout my programme. The project is therefore dedicated to my sincere beloved parents, Late Alhaji Shuaibu Aliyu and Hajiya Khadija (Mama) Umar, as an abstract reward for the foundation they laid in me from my non-existing to what I am presently.

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ABSTRACT

This study empirically analyses the impact of exchange rate fluctuations on economic growth for Nigeria for the period of 1980A:2016A using vector error correction model (VECM). The study is interested in investigating whether exchange rate fluctuations have effect on growth performance in Nigeria with the adoption of flexible exchange rate regime than the other exchange rate regimes adopted over the years in Nigeria. The study confirms the long run cointegration among the variables of interest and in all there is a positive effect of exchange rate fluctuations on economic growth of Nigeria. Another finding of the research reveals that the results of the Granger causality test confirm a unidirectional short run causality that runs from real effective exchange rate (REER) to economic real economic growth (RGDP). Nevertheless, a unidirectional that runs from oil price (OPR) to real interest rate (RIR) in Nigeria also exists. Accordingly, the results for variance decomposition reveal that an increase or decrease in one RGDP is the result of a corresponding increase or decrease in REER, OPR, RIR and INF (cpi) within the observed period in the study. The study recommends some form of government intervention in the foreign exchange market. In addition, the government should diversify the export base of other economic sectors against the oil sector that serves as the main source of Nigeria foreign exchange earnings.

Keywords: Economic growth, Exchange rate fluctuations, Foreign exchange market Cointegration, vector error correction mechanism.

ÖZ

Bu çalışma, vektör hata düzeltme modelini (VECM) kullanarak 1980A: 2016A döneminde döviz kuru dalgalanmalarının Nijerya'daki ekonomik büyüme üzerindeki etkisini ampirik olarak analiz etmektedir. Çalışma, döviz kuru dalgalanmalarının Nijerya'daki büyüme performansı üzerinde esnek döviz kuru rejiminin benimsenmesiyle Nijerya'daki yıllar boyunca kabul edilen diğer döviz kuru rejimlerinden etkilenip etkilenmediğini araştırmakla ilgilenmektedir. Çalışma, ilgili değişkenler arasındaki uzun dönem eşbütünleşmeyi teyit etmektedir ve tümünde, Nijerya'nın ekonomik büyümesi üzerinde kur dalgalanmalarının olumlu bir etkisi olduğunu savunmaktadır. Araştırmanın bir diğer bulgusu, Granger nedensellik testi sonuçlarına göre, reel efektif döviz kuru (REER) 'dan ekonomik reel ekonomik büyümeye (RGDP) uzanan tek yönlü kısa vadeli nedenselliğin doğrulandığını ortaya koymaktadır. Bununla birlikte, Nijeryada petrol fiyatından (OPR) gerçek faiz oranına (RIR) geçen tek yönlü bir nedensellik de vardır. Buna göre, varyans ayrıştırması sonuçları, RGDP'deki bir artış veya azalmanın, çalışmada gözlemlenen süre içerisinde REER, OPR, RIR ve INF (cpi) 'de karşılık gelen artış veya azalmayı açıklamaktadır. Çalışma, döviz piyasasına devlet tarafından müdahale edilmesini öneriyor. Buna ek olarak çalışma, hükümetin diğer ekonomik sektörlerin ihracat tabanını, Nijerya'nın döviz kazançlarının ana kaynağı olan petrol sektörüne karşı çeşitlendirmelisi de öneriyor.

Anahtar Kelimeler: Ekonomik büyüme, Döviz kuru dalgalanmaları, Döviz piyasası Eş bütünleşme, vektör hata düzeltme me

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey – Fuller
AFEM	Autonomous Foreign Exchange Market
BDC	Bureau De Change
BTA	Business Travel Allowance
B£	British Pound
CBN	Central Bank of Nigeria
CIRP	Covered Interest rate
ECM	Error Correction Model
FEM	Foreign Exchange Market
FMFEM	Federal Ministry of Finance and Economic Development
FPMM	Flexible price Monetary Model
GDP	Gross Domestic Product
IFEM	Interbank Foreign Exchange Market
IMF	International Monetary Fund
INF (CPI)	Inflation (consumer price index)
IRP	Interest Rate Parity
NEEDS	National Economic Empowerment and development strategy
N£	Nigerian Pound
OPR	Oil Price
PPP	Purchasing Power Parity
PTA	Personal Travel Allowance
RDAS	Retail Dutch Auction Sales
REER	Real Effective Exchange Rate
RER	Real Exchange Rate
RGDP	Real Gross Domestic Product
RIR	Real Interest Rate
SAP	Structural Adjustment Program

SPMM	Sticky Price Monetary Model
STFEM	Second Tier Foreign Exchange Market
UIRP	Uncovered Interest Rate Parity
USD	United States Dollar
VAR	Vector Autoregressive
VECM	Vector Error Correction Model
WEO	World Economic Outlook
WDAS	Wholesale Dutch auction sales

CHAPTER ONE

BACKGROUND OF THE STUDY

1.1   Introduction

Every nation strives after development (Edwards and Todaro 1974). No country can leave in isolation because international trade has been made possible as a result of unequal resource endowment. Accordingly, some countries have abundance of resources while other countries do not because of absolute and comparative advantages in production, gains from trade and specialization (Ajekwe et al 2013). However, this means that every country is economically dependent on another country whether directly or indirectly, developed or developing in order to achieve a sustainable growth and development. Accordingly, this economic interdependence can be made possible through the exchange of goods and services needed by each country whereby the importing country has to convert its currency in terms of the exporting country's currency for such exchange to be executed. Therefore, the price (rate) by which those goods and services have been paid for is called the exchange rate. According to Chichi and Casmir (2014) exchange rate acts as a catalyst in international economic transactions because all nations are economically dependent due to varying factor endowment among these countries all over the world. Therefore, exchange rate is a catalyst and engine of growth to every sector of the Nigerian economy because no sector can flourish, prosper or achieve growth without a stable exchange rate policy system. In view of the above, fluctuations in exchange rate can have effects on the economic well-being of every economy that opens its economy to international trade in goods and services because the trade relates domestic prices with international prices as well as

commands a great influence on a nation's balance of payments position through its effects on the volume of imports and exports of goods and services. However, Mati (2014) asserts that exchange rate volatility is the unexpected and fluctuations in the rate of currency exchange. The effects of exchange rate fluctuations not only attracted economists' attentions but also policy makers' attentions. From the fore going, Nigeria adopted four exchange rate regimes in this study namely; fixed exchange rate regime which is decided by the monetary authorities was used before 1986, the adjustable pegged exchange rate regime is determined overtime by the monetary authorities, flexible exchange rate regime was adopted in 1986 and is determined by the forces of demand and supply in the foreign exchange market in Nigeria while the managed floating (flexible) exchange rate regime allows the intervention of monetary authorities in the foreign exchange market in Nigeria in order to maintain stability in the domestic currency in Nigeria. During the 1960s up to early 1970s agriculture dominated the foreign exchange earnings of Nigeria but this was not the case afterwards because oil export until today becomes a major source of foreign exchange earnings of Nigeria. Accordingly, the change (i.e increase or decrease) in the international price of oil can have combined effects on exchange rate stability, macroeconomic indicators and economic growth of Nigeria. According to Aliyu (2009), increase in oil prices results in high inflow of oil revenues in Nigeria and consequently leads to expansion in the level of Government spending while periods of dwindling oil revenues are usually backed up by budget deficits in Nigeria. Worthy of note is that, before the adoption of flexible exchange rate system in 1986, Nigeria's exchange rate policies encouraged the dwindling and over valuation of the domestic currency and this also encouraged Nigeria's over dependence on imports and as well discouraged export from non oil sectors of the economy. However, fluctuations in exchange rate in Nigeria have been more in the post Structural Adjustment Program (SAP) because of external shock from sharp decline in the international crude oil prices which affects Nigeria's external reserve. Despite the fact that various factors have been attributed to the unfortunate economic performance of Nigeria, it pertinent in this study to look at the growth process of Nigeria and link it within the framework of various exchange regimes and policies that had been adopted over the years in the Nigeria. However, there are various studies

in exchange rate in Nigeria but not much has been done on the specific topic an analysis of the impact of exchange rate fluctuations on economic growth of Nigeria. Accordingly, the findings of these studies are mixed and inconclusive as a result of differences in the set of data, sample size, estimation techniques and over all, the economic condition during which these studies were carried out.

From the fore going mixed and inconclusive findings of these previous studies, this study seeks to empirically analyze the impact of exchange rate fluctuations on economic growth of Nigeria; evidence from vector error correction model (VECM) between the period of 1980 – 2016 with focus on economic background of Nigeria and Nigeria's foreign exchange market. The study is divided into six chapters as follows; Chapter one introduce study background, Chapter two discusses the economic background of Nigeria with the framework of policy regimes, chapter three examines the existing literature related to the research topic. The methodology is discussed in chapter four of the study. Chapter five deals with the empirical analysis of data and chapter five concludes the study and provides policy recommendation for the study.

1.2   Statement of the Research Problem

Nigeria's exchange rate fluctuations have been a subject of debate among policy makers, concerned monetary authorities and academics because of the recognition of the vital role exchange rate regime plays in the achievement of sustainable growth. Optimal exchange rate policy is designed to obtain real exchange rate (RER) that maintains both internal and external balance (Agu, 2002). However, maintaining a realistic exchange rate for the Naira in Nigeria is very crucial, given the peculiar structure of the Nigerian economy. For example, the Naira will be denoted here in after as the Naira sign (₦) unless stated otherwise has continued to depreciate from ₦0.61 in 1981 to ₦2.02 in 1986. In addition, towards the end of the year 2009, the naira depreciated to ₦150 and in February, 2017 the exchange rate of one US dollar (USD) to Naira was over ₦300 for the official rate while the parallel market rate is about ₦520 and above. However, since the introduction of Structural Adjustment Programme (SAP) in 1986 till date, Nigeria has adopted various types of exchange rate policies. Worthy of note is that despite the adoption of various types of exchange rate mechanisms over the years, the naira

exchange rate has exhibited the features of continuous depreciation and instability as well as fails to maintain both internal and external balance causing declines in the standard of living in the economy, increased cost of production which also leads to cost push inflation. In addition, this has tended to undermine the international competitiveness of non-oil exports and make planning and projections difficult at both micro and macro levels of the economy. A good number of small and medium scale enterprises have been strangled out as a result of low dollar/ naira exchange rate and so many other problems.

Therefore, it is against this backdrop, this research study seeks to examine the impact of exchange rate fluctuations on economic growth of Nigeria over a period of 37 years (1980 – 2016). It is therefore necessary to carry out the study of this nature because policies formulated based on empirical verification prove to be more effective compared to those formulated based on value judgment.

1.3   Statement of the Research Question

- Do Exchange Rate fluctuations have impact on Gross Domestic Product of Nigeria?
- Is there any long run relationship among the exchange rate fluctuations and its identified variables in Nigeria?
- What are the possible effects of exchange rate fluctuations in formulating growth policies in Nigeria?

1.4   Statement of Hypothesis

H_o: Exchange rate fluctuations have no impact on the Gross Domestic Product of Nigeria.

H_o: There is no long run relationship between the exchange rate fluctuations and its identified variables   in Nigeria.

H_o: There are no possible effects of exchange rate fluctuations in formulating growth policies in Nigeria.

1.5   Aims and Objectives of the Study

- The main objective of the research is to analyze the impact of exchange rate fluctuations on economic growth of Nigeria. Specifically, the study will find out:
    - If there is any long run relationship between the exchange rate fluctuations and it's identified variables in   Nigeria.
    - To logically exhibit the possible effects of exchange rate fluctuations in formulating growth policies in Nigeria.

1.6   Significance of the Study

This study is highly significant due to the fact that so much importance is attached to exchange rate fluctuations in Nigeria because of the role it plays in an economy. The study will be indispensable when we consider the current performance of the Nigerian economy. The finding of the study will be of immense important to independent and student researchers that may be interested on similar line of research. To what extent, the study will equally add to the existing literatures and knowledge as well. In addition, the findings will benefit the decisions of the Nigerian citizens, regulatory authorities and the Nigerian government at large. The fact that exchange rate fluctuations affects them directly or indirectly. Accordingly, the study is expected to be referenced by studies in developing countries and Nigeria in particular because it elaborates on the limitations as well as overcomes the problems of previous studies. In particular, the study is more focus on the analysis of the impact of exchange rate fluctuations on economic growth of Nigeria: evidence from vector error correction model.

1.7   Originality of the Study

This study is my own work and was written by me to the best of my efforts, abilities and capabilities. In addition, the study has never been presented, published or written before now by anybody, anywhere and in any institution for the award of any degree and all authors whose works have been referred are fully and duly acknowledged either by way of citation or referencing.

1.8 Scope and Limitations of the Study

The scope of this research study is designed geographically to cover Nigeria located in the West African continent. The period covered is thirty seven (37) years between (1980- 2016). The conceptual scope consists of the exchange rate periods in Nigeria. The study is structured to evaluate Nigerian flexible exchange rate as the pilot of economic growth and development. Thus, this study is therefore limited to the impact of exchange rate fluctuations on Nigeria's economic growth. However, to obtain information for the research is not an easy task; cost has always to a certain extent been one of the major constraints when obtaining and conducting research. In addition, one has to obtain data for in depth analysis but lack of complete monthly and quarterly series of some variables constraint the researcher about the study to using annual series. Worthy of note is that, time factor has been a serious problem since in most academic researches the authorities concern give specific time to the researcher during which the study should be completed. Despite all these limitations, the researcher endeavors to reduce their effects on the study to the barest minimum.

1.9 Organization of the Study

This study is organized into six chapters. Chapter one set out the holistic scene and provides a broad problem of the study, the objective of the study as well. Chapter two provides the theoretical overview of Nigeria's economic growth and the foreign exchange market in Nigeria. Chapter three deals with literature review perspectives and approaches to exchange rate fluctuations in Nigeria. Accordingly, the chapter discusses various theoretical and empirical literature review related to exchange rate fluctuations in Nigeria. The methodology is discussed in chapter four. The discussion of empirical analysis and results of the study is presented in chapter five. Chapter six provides a summary of the findings, conclusion, and recommendations based on the conclusion of the research and further areas of research.

CHAPTER TWO

NIGERIAN ECONOMY AND EXCHANGE RATE REGIMES

2.1   Introduction

This chapter discusses the background of Nigeria's economy with a focus on policy regimes that cut across the growth structure and geographic information of the Nigerian economy before and after the adoption of structural adjustment program (SAP). Accordingly, the chapter discusses the major segment of the Nigeria foreign exchange market which includes official market, interbank /autonomous market and the parallel market as well as their impact on the exchange rate regimes.

2.2   Economic Background of Nigeria: A Perspective of Policy Regimes

The Nigerian economy has suffered series of adjustments over time with different policy regimes. Before the year 1986, a medium-term "development plan" was adopted as a most important framework for developing and restructuring the economy.

Figure: 2.1   Gdp Growth Rate of Nigeria (1960-2016)
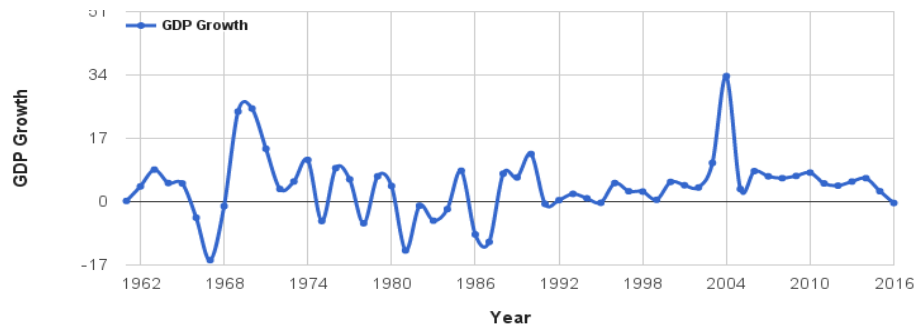
Source: Nigerian Bureau of statistics.

The First National Development Plan, 1962-1968, was developed to put the economy on a rapid growth path. The plan gave adequate priority to agriculture and industrial development as well as training of high-level and intermediate manpower which impacted on the growth process by its 54.7 percent to the GDP. However, the interruptions to economic activities during the period later paved way for broader economic policies for reconciliation and reconstruction. Thus, the Second National Development Plan, 1970-1974, was initiated largely to reconstruct and rehabilitate infrastructure that had been damaged during the Nigeria's civil war. Thus, the government invested a lot of resources into the construction and rehabilitation of infrastructure as well as improving the incomes of the people. The Indigenization Decrees of 1972 and 1974 put the management and control of the Nigerian economy in the hands of Nigerians within the framework of nationalism. The Third National Development Plan, 1975-1980, was devised under a more encouraging financial condition of huge oil revenues that accrued to the nation from the mid-1970s. However, the adoption of the Fourth National Development Plan, 1981-1985, was affected by the decline in the international oil prices. Accordingly, the government launched the Economic Stabilization Act as an urgent response to declining oil earnings and major external sector imbalances. This was aimed at reducing expenditure of the government and conserving foreign reserves in order to improve the country's balance sheet and in particular favorable exchange rate that will ensure stability in the domestic currency because fixed exchange rate was the system adopted since independence (Sanusi, 2010). Accordingly, it was however concluded that there was a need for a more fundamental reform to compliment the austerity measures. As a result, the government accepted the International Monetary Fund-sponsored Structural Adjustment Programme (SAP) in 1986. The SAP aimed at removing burdensome administrative controls and creating a more market-friendly environment strengthened by measures and incentives that would encourage private enterprise and more efficient allocation of resources. However, the year 1986 marked the period in which flexible (market determined) exchange rate system was adopted and allowed to be determined by the forces of demand and supply. One might argue the SAP recorded some measure of success. However, some of the gains of the SAP were eroded following the increased outbreak of policy reversals

between 1988 and 1989 -1994. Up to 1990, the economy witnessed some gains which were associated with increased deregulation and liberalization in economic management. Thereafter, there was a reversal of trends in major macroeconomic aggregates in 1994, resulting from policy reversals and inconsistencies. Generally, frequent policy inconsistencies and reversals that characterized the period under review created distortions in the economy and were further compounded by external shocks, including the external debt overhang. Overall, SAP failed to realize the goals of creating wealth and promoting sound economic development as most of the policies were stopped untimely or reversed out rightly. The experimentation with deregulation and liberalization was truncated in 1994 with the advent of a military government. Thus, the Federal Government reregulated the economy, by capping exchange and interest rates due to high nominal interest rates that reached an all-time high of 48.0 per cent in commercial banks and 60.0 per cent in non-bank financial institutions. These rates were in turn driven by the high rates of inflation at 48.8 per cent in 1992 and 61.3 per cent in 1993 (Sanusi, 2010). As there was no clear economic strategy for the rest of the decade, the monetary policy implementation became ineffective to check expansionary fiscal operations. In addition, weak institutions and an unfriendly legal environment reduced the benefits that would have accrued to the economy. Accordingly, the federal government promulgated vision 2010 on the need to confront the daunting development challenges in Nigeria but the plan was short lived by the sudden demise of the late military leader in 1998 and his successor dropped the plan. However, the scenario changed in 1999, with the return of democratic governance in the country. Democratic governments have introduced series of reforms that were aimed at redressing the distortions in the economy and to restore economic growth following the period of economic decline. In 2004 the government's economic agenda was formally launched and tagged the National Economic Empowerment and Development Strategy (NEEDS) with the need to achieve a long term target of vision 20; 2020. This emphasized that the country's GDP must grow and consequently make the Nigeria economy among the top 20 in the world by the year 20:2020 (Solodo, 2007). However, the vision is too ambitious against the back drop of historical antecedents of policy reversals, inconsistencies and failure in Nigeria (Eneh, 2011). Thus, in 2004 the banking sector

consolidation was initiated and was aimed at recapitalizing the banks and ensuring a sustainable and stable financial system that would support the real sector of the economy. This reform required the banks to have a minimum of twenty five billion naira as their capital base and also banks that could not meet such conditions were allowed to merge. In 2009, the CBN embarked on another banking sector reform four years after the previous one was begun. The 2008 global financial crisis strained the gains that were made in the Nigerian financial services sector from the 2004/2005 banking sector consolidation. Consequently, the global financial crisis adversely affected the Nigerian financial services sector, particularly the banking sector. It was against this background that the CBN moved decisively to strengthen the industry, protect depositors and creditors' funds, safeguard the integrity of the industry and restore public confidence. In that regard, the CBN replaced the chief executives/executive directors of the banks identified as the source of instability in the industry and injected the sum of ₦620.0 billion into the banks in an effort to prevent a systemic crisis. As a result, the Nigeria's financial system has been revitalized and emerging to be strong and competitive in the global financial practices to date despite the economic crisis facing the country. Central Bank of Nigeria Annual Report and Statement of Accounts, (various issues) CBN, Abuja. Therefore, the 7 Point Agenda was articulated in 2007 aimed at keying into the objectives of achieving vision 20:2020 by developing infrastructure, human capital and accelerate economic and other reforms in a way that address basic and immediate development need afflicting the country. However, the agenda lacks the planning unit as well as framework of reference because it ignored the plan of action from the grassroots and the agenda had no formal written document (Dode, 2010). Nevertheless, the immediate government in 2010 developed a transformation agenda which targeted development in the real sector, infrastructure, to achieve sustainable growth and development (Fatile, & Ejalonibu, 2016). . Accordingly, the Transformation Agenda was dropped with the emergence of new government with its Change Reform in 2015 which seeks to tackle corruption, insecurity and unemployment. However, the impact of this reform can be seen on the recovered stolen fund from top government officials, security is gaining its momentum but the unemployment is at a rising of 13.9, while inflation is 17. 78 and the overall economy is in recession.

2.2.1 The Structure of Nigerian Economy

The Nigerian economic Structure can be categorized into three major sectors of the economy that include the primary: agriculture and natural resources, the secondary: processing and manufacturing and the tertiary that deals with the services sectors. Figure: 2 shows the holistic view of the structure as follows.

Figure: 2.2 The Structure of Nigerian Economy
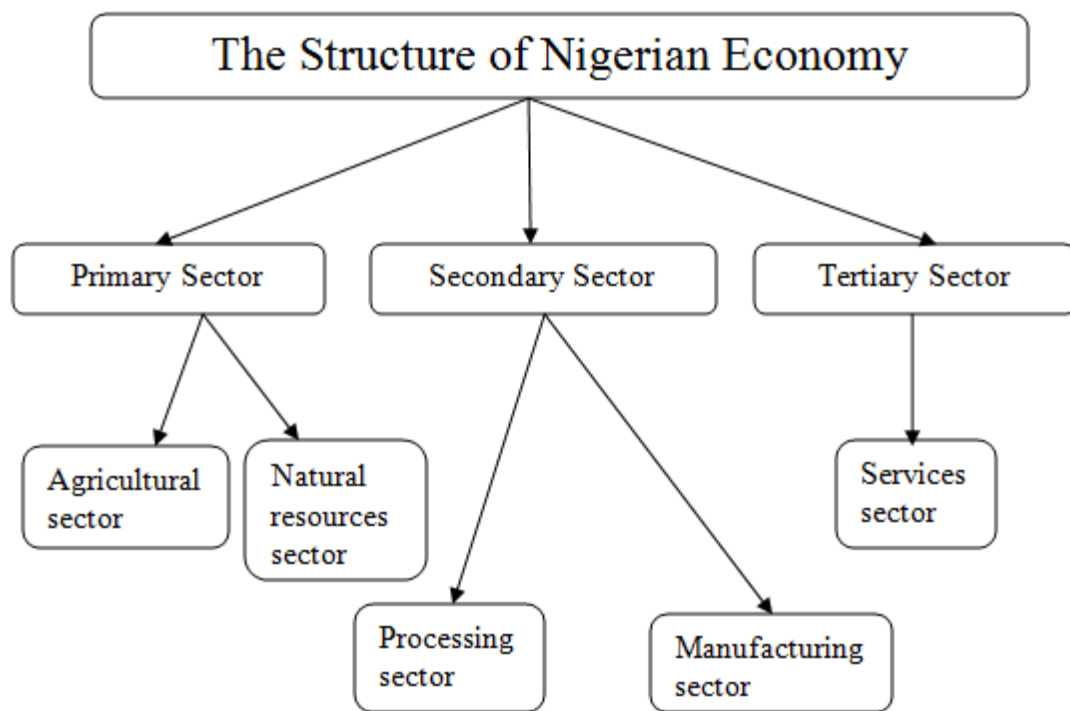
Source: Designed by the author.

However, the agricultural sector is a combination of subsistence and modern farming. Accordingly, the agricultural sector has not been able to fulfill its traditional role of feeding the population, meeting the raw material needs of industries, and providing substantial surplus for export. In reality, the contribution of the sector to total GDP has fallen over the decades, from a very dominant position of 55.8 per cent of the GDP in 1960-70 to 28.4 per cent in 1971-80, before rising to 32.3, 34.2 and 40.3 per cent during the decades of 1981-90, 1991-2000 and 2001 – 2009, these are represented respectively in the following table (Table 2.1). The fall is not because a strong and absorbing

industrial sector is displacing and absorbing agriculture but largely as a result of low productivity, owing to the dominance of peasant farmers and their reliance on elementary farm equipment and insufficient technology as well as under-capitalization which results in low yield and declining output, among others.

Table : 2.1 Sectoral Contribution to GDP

ACTIVITY SECTOR	1960 - 1970	1971- 1980	1981- 1990	1991- 2000	2001- 2009	2010- 2016
1. Agriculture	55.8	28.4	32.3	34.2	40.3	22.23
2. Industry	11.3	29.1	41.0	38.6	28.4	24.26
3. Manufacturing						
4. Building & construction	6.6	7.3	6.1	4.9	3.9	4.6
5. Wholesale & Retail Trade	4.8	8.3	2.3	1.8	1.8	3.6
6. Services	12.8	17.6	14.5	13.8	14.0	15.6
TOTAL value Added	15.3	16.5	9.8	11.5	15.5	14.6
	100.0	100.0	100.0	100.0	100.0	100.0
Diversification index	0.2	0.4	0.4	0.4	0.3	0.2

Source: National Bureau of Statistics

The industrial sector comprises the manufacturing, mining (including crude petroleum and gas) and electricity generation. Prior to independence in 1960, the Nigerian economy was mainly agrarian. On attainment of independence, the Nigerian government embarked on the programme of transforming the country into an industrial economy in which to date the industrial sector comprises modern business enterprises which co-exist with a large number of micro-enterprises employing less than 10 persons mainly located in the informal sector. Besides, the Nigerian manufacturing sub-sector is made up of large, medium and small enterprises, as well as cottage and hand craft units. In spite of spirited efforts made to boost manufacturing output and various policy regimes, the sector has not made any significant contribution to the growth of the economy. The fact

that, during and some few years after SAP, the main manufactured exports were textiles, beer and stout, cocoa butter, plastic products, processed timber, tyre, bottled water, soap and detergents as well as iron rods. However, some of these products have disappeared from the export list owing to poor enabling environment. The components of the mining sub sector in Nigeria are crude petroleum, gas and solid minerals. Prior to the advent of petroleum minerals such as coal and tin were the main mineral exports. However, with the emergence of crude oil, the relative importance of solid minerals diminished. Indeed, since the 1970s, the largest mining activity has been crude oil production, which became dominant in terms of government revenue and export earnings. Lately the production of gas has gained increased attention, as the export potential of gas has reduced the dominance of crude oil. Industry as a whole contributed only 11.3 per cent of the GDP in 1960-70, growing significantly in the next two decades to a high of 41.0 per cent in 1981-1990, owing largely to the crude petroleum and gas production during the decades. The contribution contracted to 38.6 per cent in the 1990s and further to 29.4 per cent during 2001-2009. These numbers, in fact, contradict the poor contribution of the manufacturing sub-sector to aggregate output in Nigeria compared with its peers in Asia and Latin America. Indeed, the contribution of the manufacturing component has on average been below 5.0 per cent in the two previous decades. Even the relatively high contribution of oil sector to the industrial sector contribution is being driven largely by crude production and not by the associated 'core industrial' components like refining and petrochemicals. The contribution of wholesale and retail trade and services has more or less remained stable while that of building and contribution rose sharply from 5.3 per cent in the 1960s to 8.3 per cent in the 1970s, but fell consistently, thereafter, to 1.8 per cent during 2001-2009. Accordingly, the contribution of these sectors between 2010-2016 have on average remained mixed with agriculture fell to 22.23% against the previous decade. In addition, industry and services have also decline on average against the previous decade with 24.226% and 14.6% respectively. The fall is as a result of low productivity, owing to the dominance of peasant farming and insufficient technology as well as under-capitalization which results in low yield and declining output, among others. However, with manufacturing 4.6%, building and construction3.6%, wholesale

and retail trades 15.6% have on average increased against the previous decade due to government effort to provide soft loans and training by the Central Bank of Nigeria.

2.2.2 Brief Historical and Geographical Information of Nigeria

Nigerian became independent from United Kingdom on 1st October, 1960 and consequently became a republic in 1963 replacing the queen with an indigenous head of state. However, Nigerian is the largest in Africa endowed with both human and natural resources of land mass, solid minerals, huge oil and gas reserves that serve as the main driver of the economy in terms of revenues, foreign exchange earnings, and foreign investments. Accordingly, the country has about 182 million that accounts for 47% of West Africa's population (Ghaji, 2016). In addition, the country's rich land mass occupies the land area of 923,768 square kilometers and lies entirely within the tropics with two main vegetation zones; the rain forest zones and savannah zones, reflecting the amount of rainfall and its spatial distribution (Sanusi, 2010). Thus, the country has thirty six (36) state of the federation besides its federal capital, called Abuja with an estimated population of 2.153 million in 2011. Consequently, the official language is English and the monetary unit of measurement is Nigerian Naira (₦). Again, the Nigeria's president is Muhammad Buhari elected and sworn in 2015 and the country holds election after every four years.

Figure: 2.3 Map of Nigeria Indicating Six Geopolitical Zones

Table:2.2 Nigeria's Six Geopolitical Zones

Northwest	Southwest
Northeast	Southeast
North central	South South

Source: author's design

2.2.3   Economic Growth of Nigeria

The economic growth of Nigeria can be discussed under two categories namely: the period before structural adjustments and the structural adjustments era to date and these include the following.

2.2.3.1   GDP in Pre Structural Adjustment Era

Nigeria gained its independence on 1st October, 1960 and not quite long was in civil war as a result of political crises, coups and counter coups between 1966 and 1979. During this period the instruments and system of administration were inimical to economic growth. Edo and Ikelegbe, (2014). The Nigerian economy has had a sluggish history. In the period 1960-1970, the Gross Domestic Product (GDP) recorded 3.1 per cent growth annually. During the oil boom era, roughly 1970-1978, GDP grew positively by 6.2 per cent annually - a remarkable growth. Despite the rich revenue the government had, it appeared to the government as not enough to the extent that it accumulated foreign debt to execute projects which most of them where claimed to be economically undesirable. Edo and Ikelegbe (2014). It therefore resulted to long period of economic stagnation. However, in the 1980s, GDP had negative growth rates which serves as signal that generated a series of internal and external pressures needing the government to make policies that favors economic growth and development. However, the effort was made in 1982 with the introduction of economic stabilization Act but it also failed to extent that not only the negative growth but also the capacity of the industrial based continue to decline drastically. By 1985 corrective measures were taken to include fiscal, monetary, exchange control measures, and income policies which helped to some extent but the

macroeconomic imbalance remained unresolved. The government believed that the economy needed a fundamental economic reform as the best alternative to safeguard the complete collapse of the Nigerian economy.

Figure: 2.4 Gross Domestic Product of Nigeria

Source: Nigerian Bureau of statistics.

2.2.3.1 GDP in Structural Adjustment Era and Beyond

Consequently, the structural adjustment program (SAP) was introduced with effect from 1986 and had contributed and created a conducive environment for economic growth and development. Although the (SAP) continues to suffer criticisms the various reforms and policies that were put in place which constitutes the period of structural adjustment and economic liberalization had made the GDP responded to economic adjustment policies and grew at a positive rate of 4.0 between the periods of 1988-1997. Accordingly, based on some basic indicators, it appears that the economy performed well during the years immediately after independence and into the oil boom years. However, in the 1980s the economy was in a recession. However, the implication of rapid growth in output as measured by the real gross domestic product (GDP) has been so important in Nigeria but the transformation of the various sectors of the economy is considered more convenient because this is in line with the growth objectives of most developing countries of the world. However, successive governments in Nigeria have since independence pursued the goal of structural transformation without much success despite the country's numerous resource endowments. Yet, the economic performance of Nigeria does not reflect these endowments compared to her rising Asian counterparts.

In particular, China and India were far behind Nigeria in terms of GDP per capita in the 1970s but these countries have transformed their economies and are currently considered without doubt among the major players (producers) in the global economic cycle. Worthy of note is that, during the 1970s Nigeria had a GDP per capita of US$233.35 and was ranked 88th globally, China had a GDP per capita of US$111.82 and was ranked 114th in the world. Consequently, Nigeria can better be compared with China because China has occupies the second largest economic position in the world (Sanusi, 2010) while Nigeria is currently considered a middle income mixed economy with emerging market, expanding financial commitments, telecommunication, entertainment sector, and the country is an agriculture and primary product oriented. In addition, the World Bank's 2016 Ease of Doing Business report shows Nigeria ranked 169th out of 189th economies, which has been a slight improvement from Nigeria's position of 170th out of 189 in 2015. Despite the improvement, the real growth rate of the economy is currently described as unhealthy, the fact that the economy is in recession.

Figure: 2.5 Real GDP Growth for the year, 2016
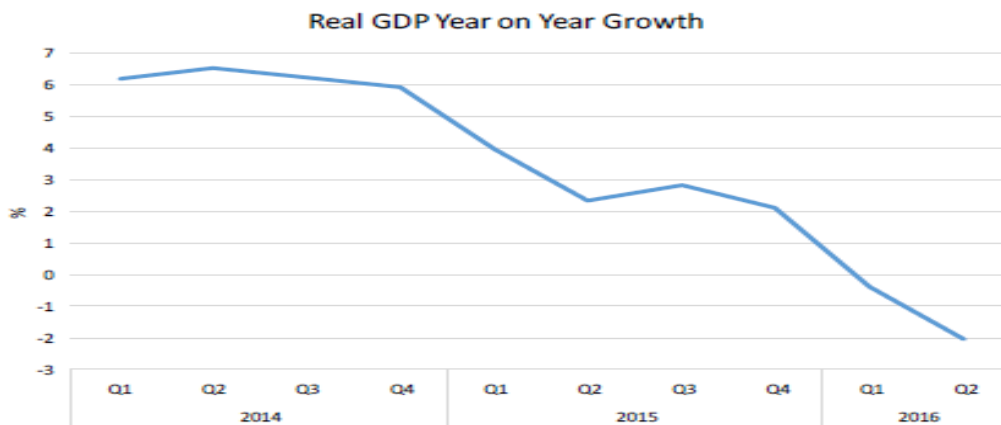
Source: Nigerian Bureau of Statistics, GDP report released 2016.

The Nigeria's gross domestic product (GDP), which measures the value of economic activities, has gone down to its lowest since the year 1991 in 2016. (National Bureau of Statistics, GDP report released 2016). The country's economy crashed to a 25-year low of -0.36 percent GDP growth rate with the last recorded below 1 percent was in 1999. The economy had a crashed of -0.3 percent in 1995, and -0.6 percent in 1991 according to World Bank's figures, (2016).

Figure: 2.6 Crude Oil and Non-Oil Growth
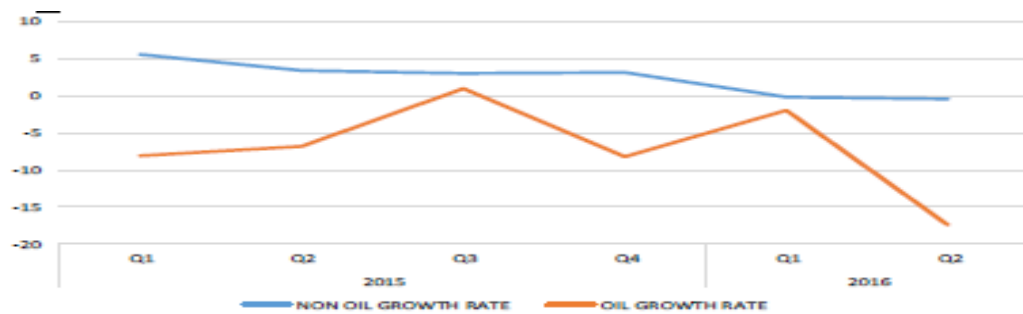
Source: **(**National Bureau of Statistics, GDP report released 2016).

However, the Nigerian bureau of statistics report also emphasized that the Nigerian economy can be conveniently understood by the classifications and contributions of oil and non-oil sector. The report said that during the period under review, oil production was also lower relative to the corresponding period in 2015 by 0.36 million barrels per day when output was recorded at 2.05 million barrels per day. Meanwhile, the report said that growth in the non-oil sector was largely driven by the activities in seven areas of the economy. It therefore listed the seven areas as Agriculture, Information and Communication, Water supply, Arts entertainment and recreation, Professional scientific and technical services, Education and other services. According to the report, the areas have grown positively while the remaining 19 major sectors, many of which are substantially indirectly dependent on the oil sector have recorded negative growth. However, "The non-oil sector accordingly declined by 0.38 per cent in real terms afterwards in the 2016.

"In real terms, the non-oil sector contributed 91.74 per cent to the nation's GDP, higher from shares recorded in early 2016 (89.71 per cent) and the second quarter of 2015 (90.20 per cent)''.

By economic principles, an economy is said to be in recession when these contractions are observed at least over two quarters. Therefore, the results of second quarter of 2016 GDP growth rate has placed Nigeria in recession from a professional point of view.

Incidentally, Emefiele, (2016) maintains that the situation in the country can better be described as 'Stagflation,' which is a more serious economic problem. This situation

largely occurs when a country's Gross Domestic Product (GDP) is falling or stagnant, while unemployment and inflation are rising, all simultaneously".

The sharp decline in oil prices since September, 2014 has posed great challenges to the economy's external balances and public finance. Worthy of note is that, the foreign reserve fell by 15.61% from USD 34.5 Billion in December, 2014 to USD 29.1 Billion in December, 2015 and continue to decline in the early 2016 because of its used to defend the value of the Nigerian currency (Naira) in the foreign exchange market. This is also attributed to the significant reduction in the foreign inflows resulted from the same sustained low crude oil prices, (WEO on Nigeria, 2015). Consequently, this had impacted prices negatively as the import dependent country's reserves dipped to a low of $23 billion dollars which covers only about three months' worth of imports as at October 2016. The reserves have since begun a slow recovery after the CBN reduced its intervention at the interbank foreign exchange market standing at $25.187 billion as at December 19, 2016. This is however still below the $26 billion which the reserves were at the beginning of the year. In view of this, the Nigerian economy has a sluggish growth attributed to a slowdown in economic activities which has been adversely impacted by the inadequate supply of foreign exchange as well as aggravated by the foreign exchange restrictions targeted at a list of 41 imports, some of which are inputs for manufacturing and agro – industry, (WEO on Nigeria, 2015). The outcome for this include cuts in productivity, implication for employment of labor, tax yield for the government and spill over to the financial sector. Given this, the Central bank of Nigeria decided to reduce the cost of borrowing for the government and the private sector to stimulate the economy after seeing the increasing policy concern with regards to declining growth. In addition, the expansionary 2016 budget (budget of change) as well as 2017 budget (budget of recovery and growth) was adopted by the authorities to stimulate the economy.

The on-going economic reform program is an attempt to put the economy on a recovery path as claimed recently by the international monetary institution that Nigeria will come out of recession in 2017 this is evidenced given the recent improvement in the price of oil and intervention mechanism by Central Bank of Nigeria.

2.3 Nigerian Foreign Exchange Market

It is a known fact that no sovereign country can economically leave in isolation, the fact that each country has to pay for her imports in international currencies equivalent of the exporting countries through the mechanism of buying and selling of these currencies in a market called foreign exchange market in order to meet or settle international obligations and transactions. However, the need to develop a reliable local foreign exchange market in Nigeria attracted so much attention since the evolution of the central bank of Nigeria (CBN) in 1958, the enactment of the Exchange Control Act of 1962 and the subsequent centralization of foreign exchange authority in the CBN. Therefore, the displacement of agricultural exports by crude oil exports in the early 1970s, as the nation's major foreign exchange earner owing to the sharp rise in petroleum prices, enhanced official foreign exchange receipts. As a result, most economic agents had to patronize the CBN for foreign exchange allocation to pay for international transactions. The Foreign Exchange Market (FEM) experienced a boom during this period and the management of foreign exchange resources to ensure that shortages do not arise, came under sharp focus. However, it was not until 1982 that comprehensive exchange control was applied as a result of the foreign exchange crisis that set in that year. Worthy of note is that, the evolution of foreign exchange market in Nigeria up to its current stage had been influence by a number of factors such as international trade pattern, the structure of production in the economy, the private sector and commercial banks controlled the foreign exchange prior 1958. The fact that, banks acted as agents of the Nigerian local exporters. Among others led to the emergence of the Nigerian foreign exchange market (Central Bank of Nigeria, 2016. https://www.cbn.gov.ng/).

2.3.1 Concept of Foreign Exchange Market in Nigeria

According to international monetary fund (IMF) cited in Mati, (2014) that Foreign Exchange is " a monetary authorities' holdings of claims on foreigners in the form of bank deposits, treasury bills, short-term and long-term government securities and other claims usable in the events of balance of payment deficits, including non-marketable claims arising from inter-central banks and inter-government arrangements, without regard to whether the claim is denominated in the currency of the debtor or creditor".

However, foreign exchange market "can be defined as foreign currency or any other financial instruments acceptable as a means of payment or exchange for international transactions (Odusola, 2006). The emphasis here is the rate of exchange of the currencies. Adekanye, (2010) maintains that foreign exchange market is a medium of exchange of interaction between buyers and sellers of foreign currencies in a bid to negotiate a mutually acceptable price for the settlement of international transactions. As a result, the foreign exchange market is a contact between sellers and buyers of foreign currencies for the settlement of business transactions and international obligations. However, the United State Dollar (USD), Euro and Pound Sterling among others are the major currencies traded in the Nigerian foreign exchange market.

2.3.2   Objectives of Foreign Exchange Market in Nigeria

The financial system of any economy requires a sound foreign exchange market operation that achieved its desired objectives. However, the objectives of the Nigeria's foreign exchange market include the following:

(1) To restore balance of payment equilibrium and achieve convertibility of the Naira by allow ing imports only when is necessary in the interest of the economy.

(2) To prevent illegal traffic in currency and goods across the Nigerian borders that enriches some businessmen at the expense of the nation's interest.

(3) To offer a means of dealing in foreign exchange at a market determined rates to achieve simple equilibrium rate (s) of the Naira.

(4) To attract inflow of capital especially fund held abroad by Nigerians in order to finance industrial growth and development.

(5) To manage inflationary effects on the Nigeria's economic well being.

2.3.3   Segments of Foreign Exchange Market in Nigeria

The Nigerian foreign exchange market has occasioned great changes overtime that includes three major segments of the market: official, parallel and interbank foreign exchange market. The major participants in these markets include the CBN, Federal

Ministry of Finance, commercial banks, brokers, exporters, importers, investors, tourists, immigrants corporate bodies, end users residents and non residents.

2.3.3.1 Official Market

The official market of the foreign exchange market deals with the official rate of exchange. Federal ministry of finance and economic development (FMFED) approves and exercise overall control of the public and private sector transactions in this market. While the CBN monitors and issues guidelines that regulates the operations of the market and also supplies the market official foreign exchange.

2.3.3.2 Parallel Market

The parallel market in this study includes bureau de change (BDC). However, this market is an alternative source of foreign exchange to consumers who find it difficult to access the foreign exchange in the official market. This market has been in existence since the exchange rate era and transactions are executed without tedious restrictions and processes of exchange in this market. The fact that any buyer may buy foreign exchange for any purpose from a willing and able seller in which the rates are negotiated on the spot at a rate higher than the official market rate. Worthy of note is that, scarcity in the official market and its formalities gave way to the development of the parallel market Garba, (1997).

2.3.3.3 Interbank / autonomous market

Prior to 20th June, 2016, the foreign exchange market in Nigeria consisted of the interbank and autonomous foreign exchange market. As a result, they are treated as the same again in this study. The interbank foreign exchange market was at the early stage dominant since the centralization of the foreign exchange in the CBN under the 1962 Act (Oladele, 2015). However, the interbank foreign exchange market is a market in which banks extent credit facilities among themselves to meet very short term liquidity obligations from overnight borrowing up to one year (Ojo, 1976). In addition, the market is characterized by rapid transmission of information and the borrowing rate in the market is influenced by the market dominant leaders and this among others led the instability of the exchange rate and consequently the emergence of official market in

which fixed exchange rate was applied to priority public sector transactions while a flexible exchange rate was use for private sector transactions through the autonomous foreign exchange market (AFEM) segment that more or less allowed banks to deal in interbank but with only privately sourced foreign exchange in order to redress the distortions caused by the market imperfections but the Naira was generally volatile in the parallel market during the (AFEM) system. To what extent, the measure was not achieved as the CBN was being relied upon for the supply of foreign exchange at a subsidized rate prior to the CBN introduction of single flexible exchange rate with effect from 20th June, 2016. Nevertheless, the measure taken by the CBN up to date continued to be argued as not proven a success in stabilizing the value of the Naira against major international currencies. The fact that the value the Naira has depreciated to the tune that Nigeria has never witness in its history. For instance, the value of the Naira against USD at official interbank market rate and the parallel market rate are about ₦314 and ₦516 respectively. However, prior to 20th June, the official interbank market rate was about ₦200 while the parallel rate was about ₦270 to $1 (one USD). As result, this study seeks to examine the impact of exchange rate fluctuations on economic growth of Nigeria.

2.3.4 The Structure of Nigeria's Foreign Exchange Market Management Policies.

The Nigeria's Foreign Exchange Market is discussed within the framework of Management Policies and regimes since the Nigeria's independence to date in the following figure: 2.7.

Figure 2.7 The Structure of Nigeria's Foreign Exchange Market Management Policies.

```
                        ┌──────────────────────┐
                        │        1959          │
                        │   N£ fixed parity B£  │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────────────┐
                        │            1973              │
                        │ Devaluation of US$ VS fixed N£│
                        └──────────────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │       1974 N£        │
                        │  Parity to B£ / US$  │
                        └──────────────────────┘
                                   │
        ┌────────────────────────────────────────────────────────┐
        │                        1978                            │
        │   Trade (import) weighted basket tied to 7 currencies  │
        └────────────────────────────────────────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │   1985 Referenced    │
                        │      on US$          │
                        └──────────────────────┘
                                   │
   ┌────────┐           ┌──────────────────────┐           ┌────────┐
   │ FTFEM  │◄──────────│        1986          │──────────►│  SFEM  │
   └────────┘           │   Dual exchange      │           └────────┘
                        └──────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        1987          │
                        │  Unified exchange    │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        1988          │
                        │        IFEM          │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        1989          │
                        │        BDC           │
                        └──────────────────────┘
                                   │                  ┌──────────────────────┐
┌────────────────────┐  ┌──────────────────────────┐  │  Restriction of BDC  │
│ Naira exchange rate│◄─│          1994            │─►└──────────────────────┘
└────────────────────┘  │ FXD (Economic policy     │  ┌────────────────────────────┐
                        │      reversal)           │─►│Centralization of Forex in CBN│
                        └──────────────────────────┘  └────────────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        1995          │
                        │        AFEM          │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        1999          │
                        │        IFEM          │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        2002          │
                        │        RDAS          │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────┐
                        │        2006          │
                        │        WDAS          │
                        └──────────────────────┘
                                   │
                        ┌──────────────────────────┐
                        │ 2016-2017 Intervention   │
                        │  Flexible exchange rate  │
                        └──────────────────────────┘
```
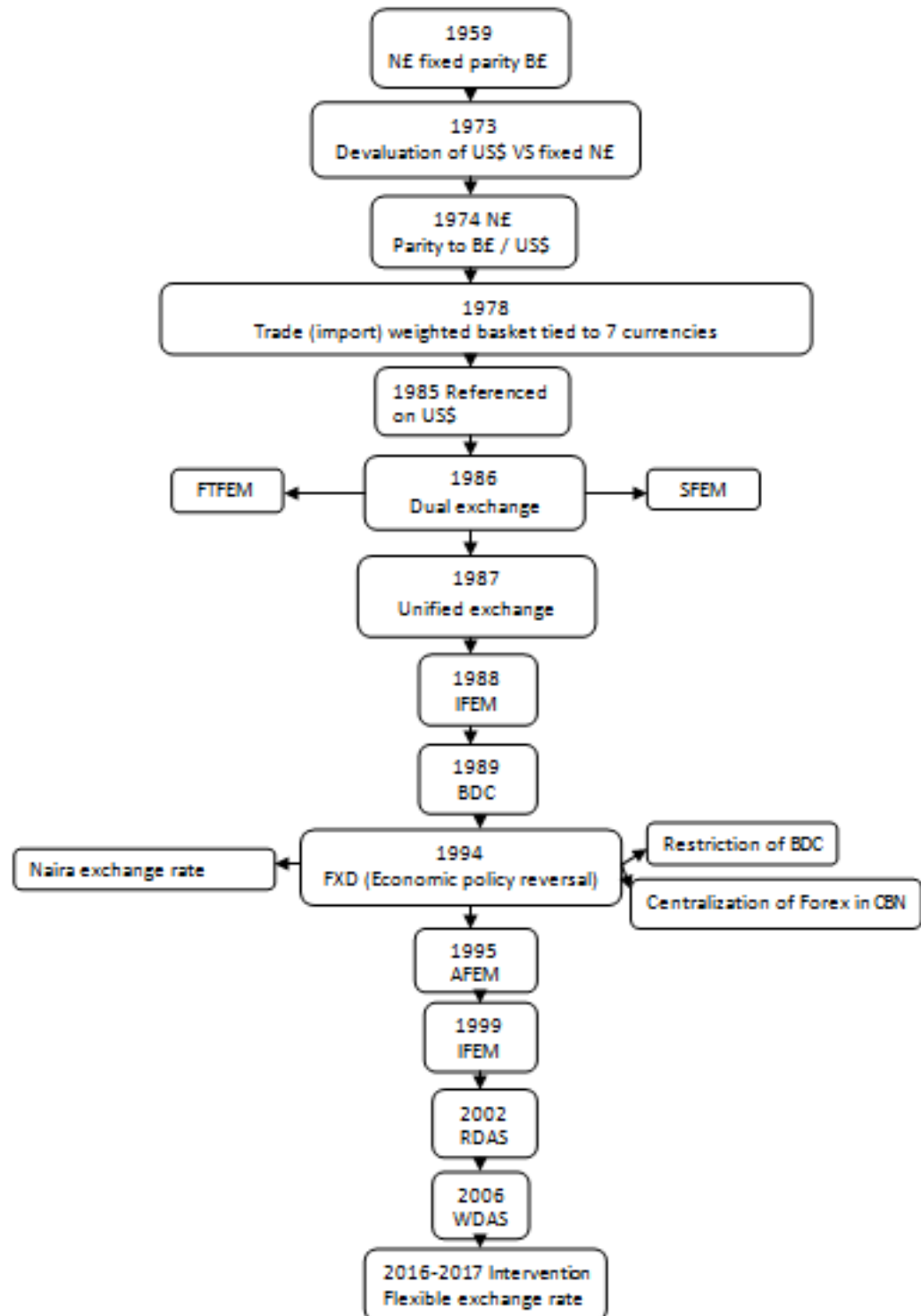
Source: author's Design

From the figure above, the foreign exchange market in Nigeria has seen a great deal of changes since the emergence of Nigeria as a country. However, in 1959 Nigerian pound (N£) as at then was a fixed parity to British pound (B£) but in 1973 when the US dollar was devalued, the Nigerian monetary authorities decided to fix the parity of Nigerian pound against us dollar. However, the Nigerian pound was later fixed against both British pound and us dollar in 1974 and subsequently tied the Nigeria's import trade to seven currencies in 1978. Nevertheless, the Nigerian currency was referenced to US dollar by the year 1985. With the introduction of SAP in 1986 and the subsequent adoption of flexible exchange rate system in Nigeria, the CBN also introduced a dual exchange rate system which consisted of the first tier foreign exchange market (FTFEM) which provide official exchange rate to public transactions and the second tier foreign exchange market (STFEM) which provide market determined exchange rate to private sector transactions. However, the (FTFEM) and the (STFEM) were merged into a unified foreign exchange market in 1987 and a year later interbank foreign exchange market was introduced in 1988. Accordingly, there were pressures for need to recognize the role of bureau de change (BDCs) in providing easy access to small users at a market determined rate because of the scarcity and tedious processes involve when obtaining the foreign exchange from the official foreign market. Therefore, a fixed exchange rate economic policy reversal he pegged the naira exchange rate against major international currencies, restricted the activities of BDCs and centralized the foreign exchange activities under the CBN. Consequently, there were a lot of irregularities and market distortions and for that autonomous foreign exchange market (AFEM) was introduced to minimize such problem in the economy in 1995 Iloye, (2016). The (AFEM) was later replaced with the interbank foreign exchange market (IFEM) to provide easy access of foreign exchange among the foreign exchange market participants in 1999. Accordingly, the need to minimize the gap between the parallel and the official market rate in 2002, the CBN introduced retail Dutch auction sales (RDAS) which was later replaced by wholesale (WDAS) in February, 2006. The WDAS allowed the CBN to supply foreign exchange to remove restrictions in all the markets. However, DASs that traditionally provided foreign exchange at an officially subsidized rate by CBN were brought into a single flexible exchange rate market structure with effect from June, 2016. This was

adopted with the objective of managing Nigeria's declining foreign reserve and depreciating value of the naira against major international currencies in foreign exchange market cause by sharp decline in oil prices. Suffix is to say that, the flexible exchange rate policy introduced in 2016 has been intervene by the CBN in February, 2017 with the objective of minimizing the gap between huge gap between domestic and international currencies in the foreign exchange market in Nigeria.

2.3.4.1 Foreign Exchange Market in Pre Structural Adjustment Program (SAP) Era

The Nigeria's foreign exchange market has seen numerous changes depending on the economic situation overtime. However, the Nigeria's exchange rate policies date back to the period of its emergence from the colonial experience when the Nigerian pound was pegged to the pound sterling. The uncertainties of the civil in Nigeria preclude the devaluation of the Naira at a time when the pound sterling was devalued in 1967.The fact that, inflation was at an alarming rate. Therefore, the Nigerian pound was quoted with reference USD when Nigeria adopted a fixed exchange rate policy in order to:

-Preserve the real value of the domestic currency.

-Maintain a favorable external reserve position.

-To maintain stability of the naira against major international currencies especially the USD.

However, (Rich, 1980) maintains that USD convertibility into gold was suspended and this led to the first devaluation of the USD and consequently amidst a flood of currency speculation because of the international financial system challenges and difficulties. As a result of this scenario, most economically advanced countries formally switched to flexible (market determined) exchange rate system in 1973. Despite the switch, the Nigerian pound was kept at parity without devaluation alongside the USD. Therefore, the Nigerian pound exchange rate parity appreciated from N£1 = $2.80 to N£1 = $3.04 in 1974. Import is cheaper because Nigeria pound became stronger than before and this helped to combat inflation up to 1978 but between 1980 to 1985, the Naira was relatively stable against the a major convertible currencies but economic challenges such

as overvaluation of the naira marked the end of fixed exchange rate system prior 1986 (Nwali, 2016).

2.3.4.2   Foreign Exchange Market in Structural Adjustment Program (SAP) Era to date

The year 1986 was the period when the structural adjustment program and the subsequent flexible (market determined) exchange rate were adopted in the foreign exchange market in Nigeria. In addition, a dual exchange rate exchange rate system was adopted which included the first tier (FTFEM) and the second tier foreign exchange market (STFEM). The (FTFEM) transactions were carried out at the official rate for public sector transactions while the (STFEM) transactions at a market determined rate for private sector. In 1987 the two markets were merged into a unified exchange rate system. However, scarcity and tedious processes in the official market led the emergence of bureau de change (BDC) and were licensed in1989 to provide easy access to small user of foreign exchange at a market determined rate. Despite these measures, the was the need for policy reversal in 1994 to restrict the operations of BDC, centralize foreign exchange in the CBN and the Naira exchange rate pegging among others. Given this, autonomous foreign exchange market was introduced in 1995 in order to minimize the market distortions (Oloye, 2016). Nevertheless, a transition from (AFEM) to (IFEM) took effect in October, 1999 after which the need to achieve a realistic exchange rate for the naira and to minimize the gap between the official and the parallel market exchange rate, the CBN introduced the Dutch auction sales in 2002 which included the retail Dutch auction sales (RDAS) and the wholesale Dutch auction sales (WDAS) to remove all the market distortions until 2006 (Nwali, 2016). Yet, these measure that traditionally provided the foreign exchange at an officially subsidized rate by the CBN are now brought into a single flexible (market determined) foreign exchange market structure with effect from June, 2016 in order to manage the declining reserves and widening gap of the naira exchange rate against major international currencies in the official and parallel market that have been said to be caused by sharp decline in price of crude o

2.3.5   Limitations of Foreign Exchange Market Management Policies in Nigeria

Every currency moves according to the strength of the economy it represents. The appreciation of the currency indicates the economic progress to a certain extent while its depreciation explain economic hardship in an economy and these may result from certain factors that limit the performance of the foreign exchange market. However, the limitations of foreign exchange market management in Nigeria include but not limited to the following:

2.3.5.1   Import dependency culture;

Over reliance on imports brings about excess demand and scarcity in supply of the foreign exchange from the monetary authorities.

2.3.5.2   Mono cultural export;

The dependence on oil export revenue at the expense of agriculture exports posed serious threat to the foreign exchange market development.

2.3.5.3   Inconsistent government policies;

The various policies put in place ignored the import dependence need of the industrial sector inputs for their survival among others. However, most of these policies are not applicable in the long run.

2.3.5.4   Corruption;

Corrupt practices such as embezzlement and reckless spending at home or abroad of most of the government officials at the expense of productive sector remains a great challenge to the development of foreign exchange market and overall economic prosperity in Nigeria.

2.3.5.5   Speculative Fraud and Economic Abuse;

Speculative consequences of manufacturing sector and travelers are among the recent challenges of foreign exchange market in Nigeria. They obtain foreign exchange as business travel allowance (BTA) and personal travel allowance (PTA) at an official rate and turn around and sell it in the parallel market at higher rate for a profit instead. They

create serious limitations to the development of foreign exchange market and the external reserve.

2.4   Exchange Rate System in Nigeria

Interest in the type of exchange rate system to be adopted is understood from the fact that knowledge about alternative exchange rate system can enable Nigeria to know which one is the most convenient system to help the country achieve its macroeconomic objectives. According to Begg et al (1984) an exchange rate system is a description of the prevailing condition under which the monetary authorities decide on the exchange rate regime to be adopted. Accordingly, the type of exchange rate in Nigeria determines the extent with which the participants in the foreign exchange market can operate. However, there are basically two types of exchange rate system in Nigeria although each one has a variation but in this study four (4) types of exchange rate system can be considered due to the fact that there is an intervention mechanism in the free floating or fixed exchange rate system in Nigeria. These categories include the following:

(1) Fixed exchange rate system
(2) Adjustable peg system
(3) Free floating/ flexible exchange rate system
(4) Manage floating

2.4.1   Fixed Exchange Rate System in Nigeria

During the early years of Nigeria's independence, Nigeria did not have monetary policy freedom because the monetary policy was greatly influenced and dictated by the prevailing economic condition in Britain. Accordingly, the monetary policy instrument during that period was the exchange rate which was fixed at par with the British pound sterling up till 1967 when the British pound sterling was devalued but the Nigerian monetary authorities avoided the devaluation of it currency and pegged the Nigerian currency which was then called Nigerian pound (N£) to United State Dollar (USD/$) because of the consequences incurred from the civil war at that time. However, the international financial crises of the 1970s led to the devaluation of United State Dollar (USD/$) while Nigeria returned to peg its currency to British pound sterling.

Accordingly, Nigeria continued to peg its currency to whichever major foreign currency was stronger in the foreign exchange market up to 1976 when an independent exchange rate management policy was adopted and the main objective was to manage the exchange rate of the Nigerian domestic currency in order to influence real economic variables and lower the rate of inflation (Adubi and Okumadewa, 1999).

According to Truett and Truett (1987) cited in Ajekwe et al (2013), fixed exchange rate system is a foreign exchange market that is characterized by government intervention to keep the rate of exchange of Naira against foreign currencies stable. Accordingly, the monetary authorities decide to maintain the convertibility of their national currencies at a fixed exchange rate and to maintain a nominal exchange rate. This means that the value of the local currency in exchange for the foreign currencies was administratively fixed by the CBN using different policy mechanisms depending on the prevailing economic condition (Ahmed and Zarma, 1997)

2.4.1.1   Positive Impacts of Fixed Exchange Rate System in Nigeria

The advantages and disadvantages of this exchange rate regime are however, too numerous to be captured and added in a single model because academic literature is very wide. Nevertheless, the monetary theorists have in since emphasized a particular argument in favor of fixed exchange rate that fixes the value of money in order for the central banks to establish a credible commitment against inflation (Frankel, 2003). However, the main arguments in favor of the system of fixed exchange are as follows:

2.4.1.2   Promotes international trade and investments:

The argument in favor of this is that fixed exchange rate arouses confidence among lenders, investors, and importers as well as minimizes the risk of uncertainties involved in international transactions which brings an orderly and steady economic growth. However, any fluctuations in exchange rate could cause problems to plans and programs of foreign exchange participants.

2.4.1.3   Removes speculation and uncertainty in international transactions

The speculative activities in the international transactions brings about possibility of panic of flight of capital from one country to another is minimized or even eliminated in the fixed exchange rate regime. Accordingly, the confidence inspired in the foreign exchange market participants that the rate will not change in the near future also eliminates the threat of speculative activities in the foreign exchange market in Nigeria without the danger of losses.

2.4.1.4   Prevents Depreciation of Domestic Currency

Nigeria is a developing country in that any fluctuations in exchange rate tends to worsen the balance of payment crisis to an extent that the home currency will continue to depreciate in terms of foreign currencies. Therefore, fixed exchange rate eliminates such fluctuations to stabilize the domestic currency exchange rate.

2.4.1.5   Prevents Inflatory Pressure in the Economy

Fixed exchange rate system is characterized as anti inflationary measure because if exchange rate is allowed to vary or decline, then imports of goods and services become dearer. Accordingly, the high cost of imports amplifies the inflation. Therefore, this scenario can be prevented by adopting the system of fixed exchange rate to ensure stability in domestic prices.

2.4.1.6   It Promotes Steady Growth in the Economy

Fixed exchange rate system brings about smooth flow of international monetary system, confidence in foreign exchange market as well as stable domestic prices of goods and services that encourage new and existing business entrepreneurs in both formal and informal sector of the Nigerian economy.

2.4.2   Negative Impacts of Fixed Exchange Rate System in Nigeria

The argument put against the effectiveness of fixed exchange rate system in Nigeria include but not limited to the following:

2.4.2.1   Very Expensive To Run.

Nigeria is deprived of it monetary independence because maintenance of exchange rate stability requires the monetary authorities to pursue a policy of monetary expansion or contraction even at the expense of its reserves and other macroeconomic objectives.

2.4.2.2   Price uncertainty

Price uncertainty inhibits the willingness of investors to make long – term capital investment abroad because fixed exchange rate only work under the favorable conditions especially gold standard. In addition, the prices of exports are more flexible in the internal market.

2.4.2.3   Difficulty of fixing devaluation rate

Decision on external value of Nigerian currency, criteria for devaluation as well as reestablishing the equilibrium in the balance of payment during the fixed exchange rate regime was a great challenge to the economic prosperity.

2.4.2.4   Ignores the cost price relationship

The fixed exchange rate system does not reflect the real cost price relationship between the currencies of the transacting countries because each country has different economic policy and the cost prices between them are subject to change overtime. However, if the exchange rate is to reflect the changing cost price relationship between these countries, must be flexible exchange rate system.

2.4.2.5   Current Account Imbalance

Overvaluation of the exchange rate in Nigeria could lead to current account deficit and this is one of most important problem of overvaluation under the fixed exchange rate system.

2.5   Adjustable Peg Exchange Rate System in Nigeria

This is a fixed exchange rate system that is subject to intervention by the monetary authorities. The Central Bank of Nigeria as the monetary authorities make adjustments

and modifications from time to time depending on economic situation in the country in order to make checks and balances in the foreign exchange market operation to ensure stability of the Nigerian Naira against foreign currencies. This was effective at the time of fixed exchange rate system in Nigeria before SAP 1986 and as well before 20th June, 2016.

2.6 Structural Adjustment Program (SAP) in Nigeria

The structural adjustment program (SAP) was introduced in Nigeria in June, 1986 and expected to end in same June, 1988 but proceeded until 1994 and 2006 when the government decided to officially abandoned it. Nevertheless, the program (SAP) was the most effective and revolutionary reform to solving the ever Nigeria's sustained economic problems and development instituted in Nigeria the fact that the program had a positive impact on the performance of the Nigerian economy during the early years of its implementation as given from the growth graph. Therefore, two of its main objectives include the following;

1. To minimize import dependence culture by restructuring the aggregate domestic expenditure and production patterns of the economy.
2. To diversify into non oil export production to reduce over dependence on mono oil export.

Hence, these objectives were put forward through private sector - led development strategy and reduction in the size of the public sector by adopting some key measures as follows:

- Exchange rate deregulation.
- Cut public extra budgetary spending and implementing tight fiscal policy.
- Cut subsidies and liberalized various sectors of the economy.
- Execution of commercialization and privatization in the economy.

Table: 2.3 Economic Indicators in the period of (SAP)/ Rolling plan, 1986 - 1994

Year	Gdp Growth rate (%)	Inflation rate (%)	Investment GDP (%)	Average manufacturing Capacity utilization	Growth rate non oil export	Growth rate import (%)	Debt service Rate (%)	Net resource transfer ($) bn
1986	3.1	5.4	6.0	38.8	-29.1	-47.5	35.4	-1.5
1987	-0.5	10.2	3.7	40.4	36.2	4.5	39.7	-0.7
1988	9.9	38.3	4.0	42.2	13.9	7.4	27.6	0.8
1989	7.3	50.5	5.1	43.8	-34.5	-33.3	25.9	-3.4
1990	8.2	7.5	6.3	40.3	1.1	34.4	26.8	-4.1
1991	4.7	13.0	5.8	42.0	16.5	-36.5	29.1	-3.6
1992	3.0	44.6	5.7	38.1	-48.2	-11.1	20.1	-3.7
1993	2.7	57.2	6.8	37.2	-6.8	-19.2	16.9	-3.3
1994	1.0	57.0	5.8	30.4	7.3	-3.6	18.7	-4.1

Source: central Bank of Nigeria Annual reports (1986 - 1995), African development bank Reports of (1990 - 2000).

Despite the increase in the growth rate of the economy, there was an increased in imports of industrial inputs even though one of the major aim of SAP was to reduce import in favor of domestic industrialization (Mati, 2014). In addition, there was a rapid depreciation of the local currency (Naira), galloping inflation heavy debt burden, volatile interest rate, unemployment and overall cut in living standard of the common and average Nigerians, among other problems.

2.6.1 Impacts of Structural Adjustment Program on Exchange Rate fluctuations in Nigeria

In 1986, the Nigerian government embarked on a Structural Adjustment Program (SAP), in order to correct the aforesaid economic problems. The program was classified into three categories: improvement of the financial structure; improvement of monetary management; and reform to strengthen capital movements and the foreign exchange

market (Oresotu, 1992). The importance of the financial system to economic development is not quite clear- cut. Some researchers such as Hicks (1969) hold the view that the financial system plays a crucial role in the mobilization of capital for industrialization. On the other hand, there are those, who hold a contrary view. In the 1980s, several African governments embarked on structural adjustments programs in order to correct the disruptions in their economies. Accordingly, as Geo-Jaja and Mangum (2001) note, structural adjustment programs seldom delivered on their intended objectives. Yet, (Ayadi et al 2008) finds that the expected outcome of the structural adjustment program in Nigeria was marred by policy reversals of government. This is a possible reason for the poor performance of the financial sector of the economy. Therefore, he concludes that financial development and economic growth have no consistent relationship in post-SAP era Nigeria. However, the implementation of SAP is a mixed of positive and negative outcomes that continue to be subjected to different interpretations specifically its relation with introduction of flexible exchange rate in Nigeria. However, prior to the SAP in 1986, which witnessed a change from fixed exchange rate to regime when one dollar ($1.00) exchange for 77 kobo to a manage floating with no predetermined exchange rate when one dollar ($1.00) exchanged for (N1.756) Naira and the main complaint among corporate executive was the high demand of the United State Dollars ($/USD) to pay for imports since relegation of agricultural sector to the background when Nigeria became an oil exporting country attributed to inappropriate exchange rate policy which encourage over- valuation of the local currency (Naira) and dependence on imports at the expense of export gains of the manufacturing non-oil sector (Obadan, 1993). This trend was sustained as irreversible to date because the Naira is now in February, 2017 exchange for about (N500) since December, 2016 to early 2017 in the parallel market whiles the official rate about (N315). Hence, this is an evidence of the widening gap between the demand and supply of foreign exchange which adds to the increasing economic hardship in the economy and Nigerians in abroad who maintain bank accounts in Nigeria. (Ogbonna 2012) maintains that when a country is subjected to mandatory devaluation programs as occasioned by SAP and revised recently in Nigeria, the people and the economy in general suffer the fact that import becomes cheaper while export becomes expensive. This is because of

the import dependence culture of manufacturing sector on inputs as well as more local currencies has to be exchange for units of imports unlike before devaluation. Given this scenario, SAP had been officially abandoned in 2006 after re-introduction over time. However, the current basic macroeconomic policies for external sector adjustments and the management of inflation cannot still be ignored or driven away from what was the case during the period of SAP. The fact that flexible exchange rate policy was re-introduce since June, 2016 to date. As observed by (Anwu, 1992) that the Nigeria's IMP-World Bank supported SAP was seriously flawed on several grounds, and that Nigeria could not succeed by adopting the competitive Capitalist model, because of its characteristic inherent instability and in order to achieve self reliant development objectives, Nigeria must draw up her own adjustment programme taking due cognizance of her peculiar conditions and Class relationships.

2.6.2   Challenges of Structural Adjustment Program (SAP) in Nigeria

Inflation has assumed a disaster in Nigeria since the implementation of SAP IN 1986 from 5.4 percent in 1986 to 40.9 percent in 1989, and become a threat to the Nigerian society given its conditionality of SFEM/FEM/IFEM ,removal of subsidies on petroleum products, and fertilizer, privatization and commercialization, trade liberalization, and interest rate deregulation (Anwu, 1992).. Yet, the fundamental economic challenges and problems of Nigeria were unresolved because of the following challenges:

- The authorities failed to consider the import dependence of the industrial sector in Nigeria.
- The public and private sector lack patriotic commitment and discipline for the success of the Program.
- The time (2 years) stipulated for the pro – long economic problems by the policy makers were visionary poor.
- Inefficient resource allocation and poor implementation of deregulation policy caused by market Imperfections.
- Contradiction and inconsistency of fiscal and monetary policies.

2.6.3 Implications of Structural Adjustment Program in Nigeria

The policy implication as maintained by (Anwu, 1992) was immediate dismantling of the t SAP program, while the home-grown adjustment programme is made viable by satisfying the following conditions: Removal of fundamental sources of continuing inflation In a credible and sustainable manner: carefully putting into effect a set of transitional measures; and ensuring the existence of a broad based political will And consensus to support the measures. Such support should be exploited While it lasts, providing a strong argument in favor of 'shock treatment' over gradualism. We need careful cooperation between interventions in prices, nominal wages, and exchange rates, backed up by fundamental reforms. (Knight et al, 1986) specifically put the exchange rate reform obligation on both the Federal Government and the Central Bank of Nigeria to manage the exchange rate of the Nigerian currency effectively and efficiently, in order to maintain external stability and cure inflation. However, this does not indicates returning to a rigid exchange control regime rather fixing lower and upper bands for our exchange rates, taking into account the international values of the world's major currencies. In addition, this will go a long way towards generating an investment surplus that inflation would have otherwise swallowed, thus raising output and bringing prices down further. In the longer run, Nigeria should initiate moves towards an African Monetary Union, since collective action would make African states to exert greater influence on the price level while achieving a stable exchange rate regime. Therefore, the implication does not only include the exchange rate reform but also monetary reform, tax – based price policy as well as fiscal policy reform should be put in place and implemented.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

Researches in exchange rate have identified a number of concepts, perspectives and approaches to the study of exchange rate fluctuations. However, the attempt in this chapter is to explore the theoretical as well as the empirical studies that are economically related to the study of this nature with a view to uncover the stand point and position of the impact of exchange rate fluctuations on economic growth of Nigeria. The focus is to establish the issues involved in developing exchange rate stability in Nigeria. Accordingly, the chapter starts with the concepts of exchange rate in Nigeria. Following, is the impact of flexible exchange rate in Nigeria and manage floating regime. Finally, theoretical models as well as the empirical studies related to the study have been explored to serve as the basis of the research as well as the theoretical framework.

3.2 Exchange Rate Concept in Nigeria

Over the years exchange rate has been seen as the most important price in the Nigerian economy. The fact that it significance has attracted so much attention from analysts, policy makers and to the Nigerian population who directly feel its various effects in their social and economic activities. However, this is largely because the exchange rate in whatever conceptualization, is not only an important relative price but also signals the competitiveness of a country's exchange power in a pure market, the world over. According to (Sohmen Egon, 1969) exchange rates are the prices per unit of one

currency in terms of another. The exchange rate is the price at which one national money can be exchanged for another (Richard Baillie and Patrick McMahon, 1989). However, the exchange rate between dollar and the pound refers to the number of dollars required to purchase a pound in which the rate is normally determine in the foreign exchange market (Jhingan, 2004). In addition, (Mordi, 2006) maintains that exchange rate is the price of one country's currency in terms of another country's currency. Exchange rate is the ratio between a unit of one currency and the amount of another currency for which that unit can be exchanged at a particular time Ngerebo and Ibe (2014). (Sohmen Egon, 1969) argues that in the United Kingdom, the quoted exchange rate refer to the amount of foreign currency obtainable for the UK pound. In Nigeria, the exchange rates are the prices per unit of Nigerian Naira required in terms of foreign currencies.

3.3   Determination of Exchange Rates in Nigeria

Given that there are a number of models that seek to clarify what determine the exchange rate in an economy, it can be said that the factors that determine the exchange rates and its movements in an economy can be identified depending on the type and nature of economic system as well as the type of exchange rate system adopted in that economy. However, the following factors are considered to be the major theoretical foundations of exchange rate determination based on the traditional flow, the portfolio balance and the monetary model in Nigeria (CBN brief, 1996):

3.3.1   Demand and Supply

The traditional model sees exchange rate as the interaction between the demand for and supply of foreign exchange. This can be done when the monetary authorities increase the supply of specific foreign exchange, then the exchange rate against the domestic currency will fall given a constant demand. This makes the value of the domestic currency to appreciate, ceteris paribus. For instance, the introduction of WDAS in 2006 increased the supply of foreign currency as a result of which Naira became stronger. On the other hand, a gap in the operation of inter-bank foreign exchange market in 2009 weakened the value of Naira in the bureau de change market, with the Naira/dollar exchange rate increased from $1=156.93 to as high as $1=180.63. However, the recent

market determined exchange rate policy adopted has sky rocketed the difference between the official and the parallel exchange rate from (official ₦ 197 = $1),(parallel N225 = $1) to (official ₦305.20 = $1), (parallel ₦500 = $1) between late 2015 and early 2017.

3.3.2 Assets Substitution

The portfolio balance approach sees the exchange rate as the result of the substitution between domestic and foreign financial assets.

3.3.3 Relative Shifts in Money Stock, Inflation Rate and Output

The monetary approach emerged as a result of the short comings of the portfolio balance approach of non automatic sustainability between money and financial assets. As a result, it sees exchange rate as a function of relative shifts in money stock, inflation rate and domestic output between an economy and the tradable economy.

3.3.4 Speculation

Speculative attitude of the operators in the foreign exchange market.

3.3.5 Dependence on Import

The domestic exchange rate has been receiving pressure because of the over reliance on importation of consumer goods as well as industrial inputs that require high demand for the foreign currencies.

3.3.6 Oil Export Prices

The oil price shocks can actually have a great impact on the foreign exchange earnings, external reserve and the foreign exchange stability. However, the recent declining oil price has made the real growth rate into recession.

3.3.7 External Debt Servicing

The payment of external debt of whatever nature causes destabilization in the foreign exchange market and the exchange rate.

3.3.8 Policy Stand of the Government and Political Interference.

The current flexible exchange rate introduced in 2016 has weakened the naira exchange rate to a record low rate against the major international currencies. Accordingly, the emergence of the freedom fighters, rebels and other sectarian groups such as Ogoni people (MOSOP) in southern Nigeria and the 'Boko Haram' in North - eastern Nigeria scare away foreign investors and this affect foreign exchange dealings.

3.3.9 Interest Rates Differentials

The higher the domestic interest rate over the foreign interest rate, the appreciation of the Nigerian currency owing to capital inflow and consequently higher Naira demands.

3.3.10 Terms of Trade

This explains the ratio of export prices to import prices. However, the higher export prices over import prices indicate higher demand for Naira and consequently affect the exchange rate, ceteris paribus.

3.4 Exchange Rate Movement in Nigeria

The exchange rate movement is an appreciation or depreciation of a given currency overtime. An exchange rate is said to appreciate if the amount of currency the required to give in exchange reduces against the currency in exchange, ceteris paribus (Wafure et al, 2010). According to exchange rate movements have effects on inflation, prices incentives, fiscal viability, and competitiveness, as well as efficiency in resource allocation, international confidence and balance of payments equilibrium. Before the year 1986 era, a fixed exchange rate system was adopted hen the Nigerian currency pegged to British pound and later to USD. Accordingly, the global financial difficulties and the subsequent collapse of the Bretton wood's institutions led the emergence of a flexible exchange rate system in the year 1986. Despite the various policy structures adopted to maintain the stability of the Naira over the four (4) decades, the Naira continuous to depreciate against the major internal currencies especially the American dollar. For instance, the exchange rate depreciated throughout the 1980s with the Naira depreciated from ₦0.610 in 1981 to ₦2.0206 in1986 and further to ₦8.0378 in 1990.

Although the exchange rate became relatively stable in the mid 1990s, it depreciated further to ₦102.1052, ₦120.9702, and ₦133.5004 in 2002, 2003 and 2004 respectively. But prior the year 1986, the Naira appreciated against the USD from ₦0.7143 in 1970 to ₦0.6159 in 1975 and further to ₦0.5464 in 1980 when its start to depreciating. However, the Naira saw an appreciation in the exchange rate of ₦132.147, N128.6516 and ₦117.968 respectively. Accordingly, the Naira depreciated in 2009 to about ₦150.00. Yet in 2011and 2012, the Naira depreciated up to about ₦156 to ₦162.30 depending on the market (CBN Bulletin, 2011). Therefore, the rate declined to ₦155.73 in 2013 and the Naira US dollar difference was highly volatile towards the end of 2014 and in February 2015 with ₦168 for $1(1USD), ₦204, for $1(1USD) but later appreciated to ₦197 for $1(1USD) in the late 2015 (Amassoma, 2016). However, Nigeria's foreign exchange reserves have declined from $37.3 billion to $25 billion between 2014 and in the mid -2016 which saw a period of two consecutive negative quarters. In addition, the CBN moved the Naira to a flexible exchange rate further made the depreciation rate at about N305.58 in official market while parallel market rate movement was about ₦416 to ₦420 in the late 2016 to a peak of ₦520 in February 2017. However, due to the recent intervention by CBN in the late February, 2017 to June, 2017 during which the study is completed becomes ₦390 and ₦305.26 to $1in the parallel and official market on average respectively.

3.5   The Impact of Flexible Exchange Rate System in Nigeria

In a flexible or floating exchange rate regime, the authorities allowed the exchange rate to be determined by free market equilibrium without intervention through transactions that increase or decrease the foreign exchange reserves. However, Solmon (1980) maintains that under the flexible exchange rate regime, the price of domestic currency in terms of another is determined by the forces of demand and supply because exporters and importers are competing in the open market to buy currencies they require. In reality, only few countries if any do permit the value of their currencies to be determined only by the market forces. The fact that there is always the monetary authorities' intervention to a certain extent as it is usually called managed floating exchange rate system (Blanchard, 2006). Therefore, the aim of flexible exchange rate regime is to

solve the problems of an imbalance between exports and imports (Arnold, 2005). Giving this, a country can set a limit within which its currency can fluctuate relative to other countries currencies, beyond such a margin, the authorities can intervene to bring the exchange rate to a favorable level against other currencies. However, the policy option available to Nigeria for adopting a particular exchange rate regime depends on its defining goal of exchange rate stability in the country. Accordingly, the potential impact of exchange rate on inflation prices, investment, balance of payment, and interest rate as well as the issue of the determination of optimal exchange rate becomes imperative for the successful implementation of development programs in the country. However, (Chuka, 1990) maintains that exchange rate stability permits viability of the exchange rate in response to changes in relative prices, international terms of trade and growth factors. This indicates that Exchange rate policy affects growth by determining capital flow, foreign investment and external balance for most developing countries like Nigeria. The instability of foreign exchange constitutes a bottle neck in the process of national development. In the course of development in Nigeria, the rate of growth of national output and the demand for imports tend to exceed export based capacity. Therefore, there is a conflict between accelerating internal development and maintaining external balance. This conflict is without doubt need to be resolved by a realistic exchange rate policy.(Udoye, 2009) asserts that several factors influence the choice of a particular exchange rate regime in Nigeria, a major consideration is the internal economic conditions or fundamentals, the external economic environment and the effect of various random shocks on the domestic economy. However, Nigeria which is vulnerable to unstable internal financial conditions and external shocks, terms of trade shocks, and excessive debt burden, which require real exchange rate depreciation, tends to adopt a regime which ensures greater flexibility. Worthy of note is that, it is becoming increasingly recognized that whatever exchange rate system a country may adopt, the long-term success depends on its commitment to the maintenance of strong economic fundamentals and a sound banking system (Sanusi, 2004). However, (Meese and Rogoff, 1990) maintain that the floating exchange rate was adopted in developing countries from 1973 and the question of whether exchange rate fluctuations have self-regulating adverse effect on transactions of the country in question has attracted a lot of literature.

Accordingly, the introductions of adjustment programs by the country and the attendant liberalization of exchange rates have brought the discussion of this work further into clear focus. The fact that, economists are divided over whether government's argument for managing exchange rate rest on three points: Firstly, the government can determine the fundamental equilibrium exchange rate. Secondly, floating exchange rate has been too volatile. Thirdly under floating exchange rate currencies can become significantly over-valued or undervalued. The first and third points are related. (Williamson, 1994) proclaim that the supporters of floating exchange rates points out that exchange rate volatility may or may not have adverse effect on favorable terms of trade depending on its effect on import. Accordingly, they also argue that under the flexible exchange rate the economy has a greater ability to adjust to external shocks as maintained by (Meade, 1951) that countries with a flexible exchange rate system will be able to safeguard real shocks emanating from abroad. Yet, (Meade, 1951) was very careful to note that flexible exchange rate is not universal remedy because there are indeed situations when it may not help to accommodate external shocks. He maintains that, there must be sufficient divorce in movements in the cost of living and movements in wage rates. This key point has also been recognized by modern scholars that have analyzed the advantages of alternative exchange rate regimes (Dornbusch, 2001; Kenan, 2002 cited in Edwards & Yeyati, 2005). However, this helps to avoid costly and prolonged adjustments processes. Therefore exchange rate fluctuations can be positive or negative.

3.5.1   The Positive Impact of Flexible Exchange Rate System in Nigeria

In a completely free exchange market, exchange rate would fluctuate freely in response to varying demand for the different currencies as well as with fluctuating demand for currencies. However, large savings in foreign exchange rate could be expected especially since capital movement affect exchange rate as directly as do merchandise export and imports (Krueger, 1983). Accordingly, the positive impact of flexible exchange rate system in Nigeria can be listed as below;

3.5.1.1 Independent Monetary Policy with greater insulation from other countries' economic problems:

The flexible exchange rate system allows Nigeria to freely adopt an independent policy to conduct properly the domestic economic affairs but there are limits to this freedom when the economy has limited capital mobility. Accordingly, Mundell (1961) maintains that countries that have competitive market and as well flexible prices are better off from the loss of an independent monetary policy.

3.5.1.2 Promotes Economic Growth

The flexible exchange rate system adopted in Nigeria can promote economic growth if backed up by a sound monetary policy oriented toward reducing volatility and uncertainty of inflation and output to achieve domestic economic stability in Nigeria. Accordingly, the exchange rates can be changed in accordance with the requirements of the monetary policy of the country to achieve the planned national objectives.

3.5.1.3 Explanation to Balance of Payment Problems

The system of fixed exchange rate system automatically requires the intervention of Central Bank of Nigeria automatically in the foreign exchange market by buying or selling domestic currency in exchange for the foreign reserve currency. However, when there is a trade deficit (our imports demand exceed foreign demand of our exports) in the balance of payments, the external value of a country's currency falls. Therefore maintaining the fixed exchange rate system with a continuing decline in foreign exchange reserve of Nigeria becomes an additional cost for the country. As a result, a market determine system of flexible exchange rate was adopted to encourage exports a, and discourage imports of ineligible goods to maintain a favorable balance of payment position in Nigeria.

3.5.1.4 Promotes International Trade

In a system of floating regime the Central Bank of Nigeria uses expansionary monetary policy that encourages domestic production and enhances the exports trade. In addition, the Central Bank of Nigeria intervenes by changing the interest rates to stimulate the flow of inventors' funds into Nigeria. However, the monetary policy has an effect on all rates in Nigeria.

3.5.1.5 Prevents exchange rate speculations

The flexible exchange rate system in Nigeria protects the currency against speculation as opposed to the main weakness of the stable exchange rate system in Nigeria which in spite of the strict exchange control, currency speculation is encouraged. The speculative activity is called "round tripping" in Nigeria. The CBN gives allowances for foreign exchange for business and personal travelling at an official subsidies rate lower than both parallel and interbank foreign exchange market. However, the speculators will collect instead of using it abroad they immediately sell it in the parallel market at a higher rate for unwanted gains. The same applies to Nigerians in Diasporas. As a result, this destroys the stability in the exchange value of the domestic currency and makes devaluation of the currency inevitable. For instance, the Naira had to be devalued in 2016 mainly because of such speculation (Governor central bank of Nigeria, 2016).

3.5.2 Negative Impact of Flexible Exchange Rate System in Nigeria

Accordingly, the negative impact of flexible exchange rate system in Nigeria can be listed as below;

3.5.2.1 Tendency to Worsen Existing Problems

Floating exchange rates may aggravate existing problems in the economy. If the country is already experiencing economic problems such as higher inflation or unemployment, floating exchange rates may make the situation worse. However, For example, if the country suffers from high inflation, depreciation of its currency may drive the inflation rate higher because of increased demand for its goods; however, the country's current

account may also worsen because of more expensive imports. Hence, the depreciation of the weak Naira has simply tended to worsen the balance of payments deficit more.

3.5.2.2   Adverse Effect on Economic Structure

The system of flexible exchange rates has serious repercussion on the economic structure of the Nigerian economy. However, it causes changes in the price of imported and exported goods which, in turn, destabilize the economy of the country. Hence, flexible exchange rates create conditions of instability and uncertainty which, in turn, tend to reduce the volume of international trade and foreign investment. Long-term foreign investments are greatly reduced because of higher risks involved.

3.5.2.3   Depression Effects of Capital Movements and Factor Immobility

Speculative capital movements caused by fluctuating exchange rates may lead to the problem of extremely high liquidity preference. In a situation of high liquidity preference, people tend to hoard the domestic currency without investing it into productive sector. Therefore, interest rates rise, investment falls and there is large-scale unemployment in the economy. In other words, the immobility of various factors of production deprives the flexible exchange rate system of its advantages arising from the adoption of monetary and other policies for maintaining internal stability. Such policies produce desirable effects on production and employment only when supply of factors of production is elastic.

3.5.2.4   Inflationary Effect

Flexible exchange rate system involves greater possibility of inflationary effect of exchange depreciation on domestic price level of a country. Inflationary rise in prices leads to further depreciation of the external value of the currency.

3.5.2.5   Failure of Flexible Rate System

Experience of the flexible exchange rate system adopted between the three decades in Nigeria has shown that it was a flop because the system is not a purely flexible exchange rate system. As result, many governments rejected it. However, many people really prefer the managed floating which can uncover the faceless and criminally minded

people who are destroying the naira under the guise of a free float as is being canvassed by some so called experts.

3.6   Managed Floating System in Nigeria

The flexible exchange rate system adopted in 2016 in Nigeria puts too much pressure on the monetary authorities. As a result, the monetary authorities had to intervene in order to manage the inconveniences in the foreign exchange market activities in Nigeria. Accordingly, the major inconveniences include high and persistence exchange rate fluctuations, high inflation and transaction cost in the economy. (Stephen and Sanmi 2012) maintain that under the managed floating regimes the government intervenes in the foreign exchange market in other to influence the exchange rate, but does not commit itself to maintaining a certain fixed exchange rate or some narrow limit around it. The Central bank of Nigeria only participates in the market by controlling the market for foreign exchange. For instance, after so much waiting and speculation, the Central Bank of Nigeria (CBN) on June 15, 2016 finally introduced certain far reaching changes to the foreign exchange regime in Nigeria. The announcement was quickly followed by the release of a new set of guidelines for the implementation of the changes to support the reintroduction of the managed floating exchange rate system. However, the guidelines include the following: (a) Revised Guidelines for the Operation of the Nigerian Inter-bank Foreign Exchange Market; and (b) Guidelines for Primary Market Dealership in Foreign Exchange Products. Although some details about the feasibility of the proposed changes are still being worked out among the CBN and such stakeholders as bank treasurers and the Nigerian Financial Market Dealers Association, there is no doubt that the changes represent the most determined and extensive restructuring of the foreign exchange market in Nigeria since the repeal in the 1990s of the Exchange Control Act of 1962. The fact that, the market participants such as banks, exporters importers and the Central Bank of Nigeria advisory committee continue study the changes to determine their exact implication and impact on foreign investors , Nigerian businesses and the economy at large.

3.6.1 The Implications of the Managed Floating Foreign Exchange Guidelines in Nigeria

Accordingly, the implications of managed floating (flexible) exchange rate system in Nigeria can be listed as below.

3.6.1.1 Market with Flexible Prices

Accordingly, the new exchange rate intervention guidelines have replaced the much criticize artificial peg on the Naira (₦) to U.S. dollar rate of exchange and also abolished what used to be a dual foreign exchange market comprising the CBN window and the inter - bank market, and established in its place a single market structure for foreign exchange which shall be the restructured interbank/autonomous market window. The implication of this is that, exchange rates in the new foreign exchange market will no longer be dependent on a fixed determined rate by the CBN but will instead be driven by invisible hands on a daily basis in the Nigerian foreign exchange market.

3.6.1.2 Authorized Intervention (S)

The guidelines empower the CBN to participate in the foreign exchange market through authorize periodic interventions to either buy or sell foreign exchange as at when due in order allow the CBN to ensure continuous liquidity in the foreign exchange market and keep the exchange rate within check from time to time without necessarily stipulating the rates in the ordinary course of business. However, the CBN can purchase or sell foreign exchange directly into the new foreign market on a wholesale basis to authorized dealers or on a retail basis to end-users through the authorized dealers the fact that such end - users require the foreign exchange for "eligible transactions" and submitted their appropriate documents. Accordingly, the CBN will trade only with a limited number of banks to be registered as primary market dealers in foreign exchange products after satisfying certain criteria stipulated under the Guidelines.

3.6.1.3   Restriction/Banned on 41 (ineligible) Imported Goods and Services

The Nigerian monetary authority's declaration of banned on 41 items from accessing the old official foreign exchange market by the CBN in June, 2015 remains applicable under the new guidelines because the CBN argue that Nigeria had the capacity to produce those goods and services locally. Although it appears that the CBN wants to reverse the policy after several complaints that the policy did more harm than good to the Nigerian economy because of the import dependence culture of Nigerian economy. Accordingly, many researchers that the banned on importation of these goods is among the causes of widening gap between the official and the parallel rate of exchange. While the CBN values the official rate at ₦306, the parallel rate has appreciated to ₦380 in April 24, 2017 as opposed to official rate of ₦305 and the parallel rate of ₦380 in February 24, 2017. It is hope that this appreciation will manage the floating to encourage businesses and investments for overall economic growth in Nigeria. However, the implication for this has been the result of injection of billions of US dollars by the CBN to stimulate the activities in the foreign exchange market and redress economic hardship caused by exchange rate fluctuations in Nigeria.

3.6.1.4   Additional Naira upon Conversion

The foreign investors importing capital into Nigeria as well as persons receiving money in Nigeria by means of any of the international money transfer payment systems may now have addition Naira upon conversion of the foreign currency to Naira whether for the purpose of obtaining certificate of capital importation or for any other purpose. However, this is because the new guidelines allow the proceeds of foreign investment inflows and international money transfers to be purchased by authorized dealers at the market prevailing rate of exchange in the new foreign exchange market instead of the fixed rate which existed under the old regime.

3.6.1.5   Liquidity Assurance

The repatriation of imported capital requires some form of processes. The fact that the foreign investors will still be required to present their certificates of capital importation (CCI) derivatives products in the new foreign exchange market seems to provide some

form of assurance of liquidity on the settlement dates for repatriation of imported capital.

3.6.1.6   Unstable Naira (₦)

The exchange rate between naira and other currencies of the world especially dollar is now very volatile. The fact that, it fluctuates on weekly, daily and even on hourly basis and there is no limit to its variability. This fluctuation has made naira to be very unstable and its value reduced to the barest minimum since the introduction of the flexible exchange rate system in Nigeria. This problem of exchange rate fluctuations became too disturbing after the emergence of the generalized floating system in the mid June, 2016. It was not however surprising that several different exchange rate policy systems were tried between 1986 and 2008 and abandoned. However, the current exchange rate regime would not be a different case from the other policies of exchange rate adopted by Nigeria prior June, 2016 if the recent intervention by CBN is   mismanaged because naira is now being undervalued.

However, in spite of these different methods of determining exchange rate, a realistic exchange rate has not been found for naira because the existing exchange rate systems had continued to widen the gap between the official and the parallel markets and had failed to prevent disequilibrium in the foreign exchange market. It has also failed to ensure stability of the exchange rate as well as maintaining a favorable external reserve positions and consequently ensure external balances. In addition, the various exchange rate systems in used in Nigeria had also failed to eliminate or reduces the frequency of capital outflow and the depreciation in the value of Naira exchange rate. Therefore, this unfavorable movement in exchange rates in Nigeria is a movement in current exchange rates that would lower exchange value for Nigeria if proper measures are not taken into considerations.

3.7   The On-Going Central Bank of Nigeria's Intervention in the Foreign Exchange Market in Nigeria

In an effort to address the persisted hardship and or difficulties encountered in the foreign exchange market in Nigeria since the return of the flexible exchange rate system

in Nigeria in 20th June 2016 that brought about a huge gap between official and parallel market exchange rate in Nigeria, the Central Bank of Nigeria actually had to intervene in the Nigerian foreign exchange market on two occasions in order to moderate the amplitude of fluctuations in the exchange rate. The frequency with which new exchange rates were introduced and changed and the intermittent intervention of the Central Bank is in formed by the determined effort of the monetary authorities to un-relentlessly combat the un-abating depreciation and instability of the naira exchange rate as (Stephen & Sanmi, 2012) also maintained. However, the move is aimed at easing access to foreign exchange by Nigerians as well as to foster a more efficient and competitive foreign exchange market. In addition to the generalized floating exchange rate system, a number of other factors have contributed to the dwindling fortune of Naira. These include weak production base and undiversified nature of the economy; import dependent production structure; sluggish foreign capital inflows; unguided trade liberalization policy; over reliance on the imperfect market system, weak balance of payment position, loss of monetary policy and more importantly, poor foreign exchange management system (Obadan, 2006). However, CBN had released new policy action in the foreign exchange market in February, 2017 to help boost and guarantee its supply of foreign exchange to both small and the major end-users. Accordingly, the CBN maintains sales will cover merchants and small banks on weekly basis of every Tuesday for visible and invisible transactions such as on health grounds, school fees, and personal travel allowance (PTA) as well as boosting the manufacturing sector. In view of this the CBN came out with a special wholesales intervention forward sales in the interbank foreign exchange market by injecting and or offering $500 million. Out of which only 23 banks were able to take up $370,810,810.79 to meet the visible and invisible transactions requests of their customers. See: http://venturesafrica.com/these-are-the-requirements-to-access-forex-for-pta-and-school-fees/. In addition, the CBN expects that such retail transactions to be settled at a rate not exceeding 20 percent above the interbank market rate. However, out of the un-cleared offering for the invisible transactions, the CBN had also sold $80million to banks to meet the demands of their customers who had applied for foreign exchange for school fees, medicals and personal travel allowances (PTA). Given this, the CBN in its determined effort to ensure that the

naira continued to appreciate in value pumped dollar into the BDC market with each qualified operator getting $8,000. Accordingly, these interventions are besides spot sales of $1.5million to four (4) banks as well as the offer of $41million for sales out of which $35 million was also taken up for the payment of school fees, medical bills and PTA. Therefore, the CBN had sold $491.8 to commercial banks and authorized dealers in the market as at February, 2017 in all the offerings see: (Thisday News /2017/02/26). In addition, CBN also offered additional $150 million to authorised foreign exchange dealers in the interbank wholesale auction window to meet their customers' demand. Yet, /2017/02/26, the CBN had also announced the sales of $10,000 only to low-end dealers once every week. In a bid to sustain the tempo of foreign exchange supply to the interbank foreign exchange market and ensure improved dollar liquidity, the Central Bank of Nigeria (CBN) Thursday March 2, 2017 intervened with a total of $170 million. A breakdown of this showed that the central bank sold the sum of $100,000,000 as wholesale interventions, just as it sold about $70,000,000 to meet requests for Business/Personal Travel Allowances. The latest dollar injection by the CBN took the amount so far offered in the interbank forex market within the past few weeks to over $1.2 billion for both wholesale and retail interventions. However, the CBN only on Tuesday, March 7, 2017 injected another sum of $100 million into the interbank foreign exchange market in its resolve to ease the challenge of access to foreign exchange by genuine customers. During the intervention auction on March 28, 2017, customers had fully subscribed to the auction, clearing every dollar at stake. It, however, topped it up with another $180 million on Monday, as part of measure to further boost liquidity in the market. While $100 million was for the wholesale forwards segment, $80 million was for the settlement of dollar demand for school fees, medicals and Personal Travel Allowance (PTA), among others. During the first week of April, CBN injects $240 million to forex market, directs cash payments. The Central Bank of Nigeria, CBN, on Monday April, 10 injected another $90 million to meet requests by bank customers, in its bid to sustain the supply of foreign exchange and ensure liquidity in the market. Accordingly, Nigeria's naira has advanced to regain value on the country's parallel market on Thursday April, 20. Accordingly, the parallel market rate strengthened 2.6 percent to 385 naira to the dollar. In addition, the CBN Acting Director, Corporate

Communications, Isaac Okorafor, said the bank remained resolute in ensuring that it supplies enough forex to genuine customers of Deposit Money Banks and increase liquidity in the market. In view of this, the central bank sold $20,000 to each bureau de change operator this fourth week of April, 2017 to boost liquidity. Accordingly, the central bank of Nigeria has sold about $4 billion since it started its aggressive intervention on the foreign exchange market in February. The central bank has been intervening on the foreign exchange market to try to narrow the currency's spread with the parallel market rate (NASDAQ, 2017/4/20)

3.7.1 Implications of CBN Policy and Market Intervention in the Foreign Exchange Market in Nigeria

Following the intervention of the CBN, the exchange rate of the dollar to the naira continued to slide. In fact, the value of the national currency has been appreciating significantly since the announcement of the new intervention policy in February, 2017. For instance, the dollar which was sold for ₦525 at the parallel market on Monday second week of February before the announcement tumbled to ₦501/$1 on Wednesday. As at the close of business on Friday, it closed at ₦450/$, stronger than the ₦480 to the dollar from the previous day, amassing a gain of ₦75/$ after the announcement, thereby signaling renewed confidence in the foreign exchange market. However, with the naira rapidly and gaining value daily, many of speculators whom have lost millions of naira are now cautious of buying dollars at higher rate in order to avoid such massive loss. Nevertheless, a report by an independent newspaper (THISDAY news 2017/02/26) investigation revealed that a portion of the parallel market operators are trying to slow down the fall of the dollar to moderate the heavy losses they are currently suffering. It was gathered that many of them had bought huge volumes at over ₦500/$ with the expectations that the naira will continue to fall, only for CBN to dramatically intervene, leading to the naira gaining substantially against the dollar. In addition, the new policy, though seen by a few as a policy reversal, couldn't be coming at a better time. This is because the country's foreign reserve has been on the increase lately. On other hand, the new policy is seen by many as fit for purpose. It has extinguished the criticisms that trailed the introduction of the preferential treatment when it was introduced last August,

2016 and defended those who described the CBN's initial policy as unsustainable. The fact that Some analysts maintained that "CBN initially progressed in error by implementing a selective policy in the first place by allocating 60 per cent of foreign exchange at the interbank market to a sector whose output has been falling over the years. In addition, the manufacturing has sector's been contributing less than 10 per cent to Nigeria's GDP. However, even when naira was strong the sector defies all logic to access the dollar because the commercial banks failed to comply with the CBN's directives to sell the foreign currencies to the manufacturers. Accordingly, this resulted to several complains where by the president of manufacturers association of Nigeria once lamented that the CBN was only treating the symptoms of the manufacturing sector rather than face the real challenges that made that critical sector of the economy uncompetitive. He also maintained that "The sale of sixty per cent (60%) out of the foreign currencies funded by the CBN into commercial banks to manufacturers as directive by the CBN didn't impact on the manufacturing sector because the banks failed to comply with directive of the CBN. Therefore, when our members approached the banks what the banks used to tell them was that they were not funded by the CBN as such the CBN can't dictate to them how they sell foreign exchange that they bought from the autonomous markets".   However, this recent policy therefore seeks to correct the initial anomaly and they believe it makes economic sense," the analysts argued. Accordingly, Observers opined that appreciation of the external reserves to US$29.1 billion has empowered the central bank to intervene by making the foreign exchange market wet with the greenback and this time, the approach is more strategic and targeting. While stakeholders and analysts are diverse in their reactions to the new policy, with more on the side of the CBN, and as well rather than focusing on the wholesale demand alone thereby leaving the retail users at the mercy of parallel market operators, who fix rates as they wish, the CBN is looking at addressing retail demand thereby redirecting traffic from the parallel market. However the managed floating uncover the faceless and criminally minded people who are destroying the naira under the guise of a free float as is being canvassed by some so called experts see: http://www.vanguardngr.com/2017/03/cbns-interventions-exchange-rate-go/

Between the middle of February and early March, the CBN shocked the speculators by injecting over one billion US Dollars ($1 billion) into the market. Within a few weeks the Naira rebounded toward the ₦400 to $1 mark on average and these measures and their effects have proved that forex scarcity is the main problem. See: Read more at: http://www.vanguardngr.com/2017/03/cbns-interventions-forex-market.

Before the new policy, the naira had been affected negatively by unfriendly global economic forces; somewhat resisting fiscal and monetary policy formulations. However, it has been clearly seen that the increase in currency sales to exchange bureau has also helped take out pressure from the black market, the fact that some importers were no longer bringing forward dollar demand as liquidity continues to improve. In addition, the bank cut the amount of paperwork small and medium-size businesses must provide to buy dollars. This is also another effort to improve liquidity and stability of foreign exchange in Nigeria. In the official market, the currency was quoted at 306 per dollar in the fourth week of April, 2017 while the parallel market rate strengthened to 385 naira to the dollar.

3.8   Theoretical Exchange Rate Models

One of the major research goals in the study of exchange rate fluctuations is the desire to find an acceptable model(s) that explains the movement of the exchange rate in terms of macroeconomic variables that affect the growth of a country like Nigeria. However, forecasting exchange rate has been a great challenge in Nigeria since the collapse of the Bretton wood system in the 1970s. In order to understand the behavior of exchange rate in Nigeria, this study re-examines the forecasting capabilities of various theoretical exchange rate models. Given that there are many exchange rate models available for exchange rate determination, the models used in this study are selected according to at least one of the following criteria: (i) prominent in economic literature in Nigeria ;(ii) not restrictive to only theoretical or empirical model in Nigeria; (iii) readily replicable and available for implementation in Nigeria; and (iv) not previously evaluated in a systematic manner in Nigeria. Based on the above criteria, the models examined to serve as the basis of this study are classified into three major categories as follows (i) partial equilibrium: the Purchasing Power Parity model, the interest rate parity model; (ii)

general equilibrium: Mundell- Fleming Model and (iii) hybrid model: monetary model (Mati, 2014). These exchange rate models are discussed below:

3.8.1   Purchasing Power Parity (PPP) Model

The **PPP** model is a theoretical exchange rate model that explains the movements of the exchange rate between two economies' currencies by the changes in the countries' price levels. The purchasing power parity theory assumes that the actions of importers and exporters, whose transactions are recorded on the current account, induce changes in the exchange rate. However, the **PPP** model is based on the "law of one price", which asserts that a unit of a domestic currency can buy the same quantity of goods or services in the foreign countries. Accordingly, it is eventually the interaction of demand and supply that will determine the equilibrium prices of both Naira and US dollar. In addition, the goods-market arbitrage mechanism will move the exchange rate to equalize prices in the two economies. For example, if the US goods are more expensive than those in Nigeria, consumers in the US and Nigeria may tend to purchase more Nigeria goods. Therefore, the increased demand for Nigeria goods will drive the Nigeria naira to appreciate with respect to the US dollar until the dollar-denominated prices of the US goods and Nigeria goods are equalized (Mati, 2014). However, the exchange rate determination under the PPP model is expressed as:

Let **Px** and **Py** represent the prices of the goods or services in domestic and foreign currency and as well let "r" represents the exchange. Accordingly, let the **Xp** and **Yp** represent the domestic and foreign price level quoted in their currencies respectively. Given the law of one price, the price (s) of goods or services should be the same in domestic and foreign market. This means that: **Px = rPy**. In addition, let us consider the domestic price index be **Xp= f (P_i)** where **i=1**, 2… n while the foreign price index be **Yp= f (P_i).** However, if the prices of goods or services expressed in domestic currency are equalized across countries and the same goods or services enter each country's market basket with same weighs, then absolute PPP prevails. In view of this case, the law of one price can be expanded to aggregate price level. However, absolute PPP holds if the function of domestic and foreign price indices are homogeneous of degree one.

r = Xp/ Yp = <u>domestic price of the standard market basket of goods and services</u>
Foreign price of the standard basket of goods and services

Where, the right-hand-side is the common multiple of the price of each good in one currency and in the other (Dornbusch R, 1985 cited in Mati, 2014). However, **If Px/Py=k** for all goods, then **r=Xp/Yp=k**. The implication of the absolute **PPP** is that **Px/rPy =1** at all times. However the assumption of the absolute PPP is violated in practice by the presence of transport costs and other trade obstacles. Therefore, the PPP theory is restated in terms of changes in the exchange rate and relative price levels: **r=βXp/Yp,** where **β** is a constant which reflects the trade obstacles. This weak version is called the **relative PPP**. According to (Dornbusch R. 1985), an increase in the home price level relative to that of abroad implies an equi-proportionate depreciation of the home currency. Relative PPP can be stated mathematically as follows:

$$\%\Delta r = \%\Delta Xp - \%\Delta Yp$$

This mathematical expression explains that the percentage change in exchange rate is obtained by the difference between the percentage change in domestic price level and percentage change in foreign price level.

However, the limitations of these PPP theories in its absolute and also in its relative form are rejected at least for the short and medium term, i.e. that nominal exchange rate changes compensate for inflation differentials although the level of PPP rates may differ. The main causes for the rejection are rigid prices and factor costs as well as high transaction costs which hinder arbitrage on goods markets. Nevertheless, (Krugman, Obstfeld, Melitz, 2012) see some truth in PPP in its relative form for the long run, if combined with their "general theory of exchange rates in the long run". In this concept, currencies in those economies tend to appreciate in real terms whose goods face comparatively stronger demand than goods from other economies and vice versa. The opposite is the case for Nigeria because crude oil as the major exports has been facing a comparatively weaker demand than goods from other economies.

3.8.2 The Interest Rate Parity Model

Interest rate parity (IRP) is a model of exchange rate determination based on investor motivations in which equilibrium is described by the interest rate parity condition. However, interest rate parity condition is a condition in which the rates of return on comparable assets in two countries are equal. Accordingly, IRP model explains the value and movements or relationship between spot and forward exchange rates of currencies that the expected return on domestic assets will equal the exchange rate-adjusted expected return on foreign currency assets to satisfy the foreign exchange market equilibrium (Mati, 2014). Therefore, the reliability of this technique is highly related to how the two interest rates affect each other (Zhang & Dou, 2014). The model explains the behavior of exchange rate, inflation and interest rate in two economies. However, it is also known as the asset approach to exchange rate determination. The interest rate parity model assumes that the actions of international investors—motivated by cross-country differences in rates of return on comparable assets—induce changes in the spot exchange rate. In other words, IRP implies that transactions on a country's financial account affect the value of the exchange rate on the foreign exchange market. This contrasts with the purchasing power parity model, which assumes that the actions of importers and exporters that induce changes in the exchange rate. Generally, there are two descriptions of IRP – covered interest rate parity (CIRP) and uncovered interest rate parity (UIRP).

3.8.2.1 Covered Interest Rate Parity

Covered interest rate parity model explains that no arbitrage condition that states that the interest rate differential is covered with the use of a forward contract. In other words, the use of the forward exchange rate covers the investor against exchange rate risk. Accordingly, the returns from depositing money (Naira) in Nigeria should be equivalent to that of the returns from saving US dollars in the united state. However, it is expected to hold approximately when capital markets are perfect.

$$1+i_t = (1+i^*_t)\, S_{t+1}/S_t$$

$$1+ i_t\, /1+ i^*_t = S_{t+1}/S_t$$

Where i_t is the domestic interest rate, $i*_t$ is the foreign interest rate, S_{t+1} is the forward rate and St is the spot rate.

3.8.2.2 Uncovered Interest Rate Parity (UIRP)

Uncovered interest rate parity is a no-arbitrage condition that states that the interest rate differential equals to the expected change of the interest rate (e.g. due to expected inflation in one country). In other words, (UIRP) also explains that expected appreciation / depreciation in the value of a currency is offset by lower/ higher rate of interest. Expectation plays an important role in the (UIRP) model. Replacing forward exchange rate in the last equation above with expected rate **(E*),** the Uncovered Interest Rate Parity can be expressed as follows:

$$1+ i_t /1+ I_t = E*(S_{t+1}/S_t)$$

Where **E*** expected rate, i_t is the domestic interest rate, I_t is the foreign interest rate, S_{t+1} is the forward rate and S_t is the spot rate. However, one of the limitations of IRP is that the interest rate differentials cannot explain the difference rates between the spot and the forward rats (spot market rates follow forward rates) as maintained by the (CIRP). In addition, the current forward rate deviates from the actual exchange rate in the future. Given this, the forward rate is not a reliable predictor of the actual exchange rate in the future. Therefore, it is observed that many studies pay little or no attention to the reality of the foreign exchange markets, and just maintain econometric and empirical findings or at least stylized facts (Priewe, 2016).

3.8.3 Mundell- Fleming Model

The Mundell - Fleming model is an open economy version of the IS-LM with inclusion of capital flows as an important component of the model. Therefore, Robert Mundell (1968) and Marcus Fleming (1962) developed a model of exchange rate that explains the short run relationship between nominal exchange rate, interest rate and output. However, the model is designed for the analysis of macroeconomic policy in a developing open economy that is a price taker in export and import markets (Huh, 1999). Accordingly, the model explains the behavior of exchange rate based on the IS-LM curve and Balance of Payment components. According to the model, an economy cannot simultaneously

have a fixed exchange rate, independent monetary policy and free capital mobility so that the role of capital flows is activated. The point here is, this principle is referred to as "impossible trinity" (Mati, 2014). There is not much doubt that Nigeria is a developing economy. Nevertheless the model explains that the existence of a correlation between the level of exchange rate and monetary supply in the long run. In addition, it implies that devaluation may also result in devaluation unless inflation, fiscal discipline and balance of payment are well coordinated. In other words, the model generally regards an increase in domestic real income as being the leading factor to a worsening trade balance and therefore to a depreciation of the exchange rate. However, if the increase in real income results purely from increase in exports, which are exogenous, then an appreciation of the exchange rate will prevail and vice versa. However, it is argued that this model maintains that the relative increase in the domestic interest rate led to capital imports, and hence appreciation of the exchange rate. This has not provided explanation about the high and real degree of volatility that occurs in the foreign exchange market.

3.8.4 Monetary Model

This is an extremely and influential model of exchange rate determination. However, the model logically employed the Purchasing Power Parity (PPP) and Quantity Theory of the demand for Money (QTM) to explain the behavior of exchange rate in an economy. Accordingly, the model explains the rate of exchange between two or more currencies is determined by the interaction of demand and supply of the currencies involved in the foreign exchange market. In addition, the model maintains that the behavior of economic units in an economy and the stock of money of each currency influence the exchange rate in the economy. Accordingly, the quantity theory of the demand for money (QTM) states that there is a positive relationship between the quantity of money and the general price level of goods and services. Therefore, PPP maintains that a given amount of goods and services both when converting a given rate of currency should be an equivalent rate of currency at another country (IMF, 2002). Therefore, the model implies that the price level in different countries should be the same when expressed in the same currency—makes it an attractive theoretical tool for understanding fluctuations in

exchange rates over time. It also provides a long-run benchmark for the nominal exchange between two currencies and thus a clear criterion for determining whether a currency is significantly ''overvalued'' or ''undervalued'' (Rapach, and Wohar, 2002). Based on QTM postulates, the following equation holds:

$$MV=PY$$

Where M stands for quantity of money supply/demand

V means velocity of money in circulation

P signifies average price level, and

Y is the Real GDP.

Worthy of note is that, an increase in the money supply leads to an increase in inflation and consequently causes a decrease in the value or purchasing power of the domestic currency.

Accordingly, the monetary models of exchange rate are of two types: (i) flexible price monetary model (FPMM) and (ii) the Sticky price monetary model (SPMM). However, the (FPMM) is developed by Frankel (1978) and Hodrick (1978) while the (SPMM) is developed by Dornbusch (1976) and Frankel (1979).

3.8.4.1 Flexible Price Monetary Model (FPMM):

 The following assumptions are made under this model: all goods prices are completely flexible, domestic and foreign assets are perfect substitutes, there perfect mobility of capital, the money supply and money income are determined exogenously and domestic money is demanded only by domestic residents, and foreign money only by foreign residents. However, an increase in the domestic real income can play a significant role in creating an excess demand for the domestic currency. In addition, economic units can take this advantage by increasing their real money balances through decreasing their expenditures. The implication of this is a fall in the prices of goods and services. The fact that PPP continuously holds, appreciation of the domestic currency helps in restoring the equilibrium (Mati, 2014). However, the model concludes that a monetary policy expansion cannot have any real effects due to perfect price flexibility.

3.8.4.2   The Sticky Price Monetary Model (SPMM):

The (SPMM) is able to provide explanation for the dynamic adjustment process that occurs as exchange rates move towards a new equilibrium. However, the model is based on the idea of price stickiness and shows that as a result of unanticipated monetary disturbance, the exchange rate expectations will deviate from PPP for as long as it takes goods prices to fully adjust to the new monetary conditions. The implication of this is that, the exchange rate can over shoot its long – run path. The model is also based on the two country model with identical structural parameters in the domestic and foreign countries. However, the major difference with the monetary model is that domestic and foreign goods prices only adjust to a new equilibrium with a lag as a result of cost of adjustment and lack of complete information. Therefore, the maintenance of long – run equilibrium PPP implies the long – run effect of a change in money supply is identical to that of the monetary model. Nevertheless, the (SPMM) "maintains that "jump variables" such as interest and exchange rates compensate for stickiness of the price of goods and services. However, he model also maintains that under the short run the prices of goods and services are sticky. Therefore, a fall in the nominal domestic money supply means a fall in real money supply but interest rates will consequently rise. Accordingly, the rise in the domestic interest rates leads to not only capital inflow but also an appreciation of the domestic currency (Neely and Sarno, 2002). In the long run the prices of goods and services fall in response to the fall in the real money supply which results from high domestic interest rate. To put simple, the exchange rate will gradually move towards the long – run PPP. From the foregoing, the (FPMM) and (SPMM) provide similar fundamental explanation for the exchange rate in the long run. The fact that, the reduce equation of (SPMM) contains the (FPMM). In the long – run, (Civcir, 2004) maintains that the (SPMM) reduces to the (FPMM).

However, (Rapach and Wohar, 2002) argue that the lack of empirical evidence for a stable long run relationship among nominal exchange rate and monetary fundamentals renders the monetary model a seemingly plausible theoretical model with little practical relevance. They also maintain that a ready explanation for the failure to find cointegration between nominal exchange rate and monetary fundamentals in much of the

present is the relatively short spans of data typically employed, which cover only the post Bretton wood's float in the 1970s.

From the foregoing explanation of the theoretical models of exchange rate determination, no single theoretical model can consistently stand out as the best exchange rate forecasting model when assessed by multiple criteria as observed in (Priewe, 2016). Accordingly, Cheung et al, (2004) also concludes that a particular theoretical exchange rate model may do well for one exchange rate but not for the other. However, the combined forecast by the models is in general more convenient to the forecast based on single model when considering the limitations of each model. Therefore, a systematic forecast should be adhered to when making predictions on market surveillance purposes, exchange rate movement of major foreign currencies and also forecast for macroeconomic analysis in general particularly in a developing country like Nigeria.

3.9   Empirical Literature from Previous Studies

 The collapse of the Bretton Wood fixed exchange rate system in the early 1970s led to the adoption of flexible exchange rate regime in 1970s, the world over. Although, there is a growing body of literature on the impact of exchange rate fluctuations on economic growth of Nigeria since the adoption of flexible exchange rate regime in the early 1970s, empirical evidence has been ambiguous both within developed and developing countries like Nigeria about the consensus on the impact of exchange rate fluctuations on economic growth of Nigeria. However, differences from the data series and measurement, model used in a study as well as level of economic growth and development can be the reasons for the mixed findings. However, Bala and Asemota (2013) in their study using monthly data series from 1985:1 to 2011:7 for Naira/dollar, 2004:1 to 2011:7 for naira/British pounds and Naira/Euro rates, confirms the existence of exchange rate fluctuations in Nigeria. Accordingly, the study employs variants of GARCH models which include EGARCH, PARCH, IGARCH, CGARCH and GARCH with volatility break. In addition, (Shehu, 2008) examines the impact of foreign exchange fluctuations on the changes of nominal standard international trade classification (SITC) import on Nigeria using three foreign exchange market structures

(SFEM, AFEM and IFEM). However, the study employs annual time series data covering 1987 to 2008; 1987 to 1994 for SFEM, 1995 to 1999 for AFEM, and 2000 to 2008 for IFEM using simple Ordinary Least Square (OLS) method. Accordingly, the study finds significance relationship between AFEM Naira/dollar exchange rates and the (SITC) import. On the one hand, the study reveals negative and fairly positive significant relationship between the two variables under IFEM and SFEM respectively. Accordingly, (Oloba and Abanga, 2013) confirm the existence of volatility of Naira/dollar exchange rate in Nigeria. They employed EGARCH econometric model on quarterly data from 1986:1 to 2009:4. Using annual data from 1971 to 2012 and vector error correction model, (Odili, 2015) examines the long –run impact of real exchange rate volatility in Nigeria. Accordingly, the study reveals that there is poor performance and negative impact of exchange rate volatility and economic growth on international trade in Nigeria. The study maintains that the ineffective tariffs measures would be effective with effective import substitution industrialization to stimulate growth. In his study, the purchasing power parity and black market exchange rates. (Culbertson, 1975) uses purchasing power parity calculations as approximations of the equilibrium rate over the period of 19 years for three countries. The findings reveal that relative rates of inflation are the dominant forces influencing equilibrium exchange rate. (Hooper, & Kohlhagen, 1978) study the effect of exchange rate uncertainty on the prices and volume of international trade analyzed the theoretical impact of exchange rate risk on the both equilibrium prices and quantities in the United States and Germany. Accordingly, the study finds a significant impact of exchange rate uncertainty on prices but no significant impact on level of trade was found. However, (Mees and Rogoff, 1988) in their study titled was it Real? The exchange rate – interest rate differential relation over the modern flexible rate period examine the relationship between real exchange rates and real interest rate differential in the United States, Germany, Japan and United Kingdom. They find insignificant relationship between the two variables. Therefore, the study argues that real disturbance of productivity shocks may be a major source of exchange rate volatility. Accordingly, real exchange rate and real interest rate relationship is a key player to explain exchange rate movements (Edison and Melick, 1999). Their study examines the relationship between real exchange rate and real interest using three

different approaches across four currencies with 20 years' time series data. They maintain that each approach shows significant relationship despite some peculiar problems.

(Amassoma, 2016) analyzes the impact of exchange rate policies on gross domestic product (GDP) in Nigeria both in the long and short run using Error Correction Model (ECM) with time series data between (1970- 2013). However, the study finds that exchange rate fluctuations had no significant effect on economic growth in the short run rather finds the existence of an insignificant positive relationship link between exchange rate fluctuations and economic growth in Nigeria in both the long and short run. However, the study maintains that this was attributed to the influence of the monetary authorities in mitigating exchange rate fluctuations in Nigeria. (Oyerinde, 2014) investigates the impact of exchange rate fluctuations on aggregate domestic investment financing in Nigeria using error correction techniques (ECM) and time series data of 42 years (1970- 2012). The study reveals no relationship between exchange rate fluctuation and domestic income. However, the non-relevance of exchange rate is that domestic cost of investment finance is the key to promoting investment in Nigeria. (Eze, and Okpala, 2014) examine the quantitative impact of foreign exchange policies on economic growth in Nigeria using time series data from 1970 to 2011 and chow test for the analysis. The study finds insignificant positive relationship of exchange rate and economic growth, the fact that growth performance has not under gone any structural changes. Accordingly, Uduakobong, and Enobong (2015) in their study an empirical analysis of the relationship between exchange rate movements and economic growth in Nigeria using Ordinary Least Square (OLS) technique and the Granger Causality Test with time series data from (1970-2011), find that there is positive and insignificant relationship between exchange rate and economic growth in Nigeria. David, et al (2010) examine the impact of exchange rates fluctuations on manufacturing sector in Nigeria using multiple regression with annual series data between 1986 to 2005. The study finds a significant negative impact of exchange rate fluctuations on the manufacturing sector. However, in a study by Imimole, & Enoma (2011) titled Exchange rate depreciation and inflation in Nigeria using Auto Regressive Distributed Lag (ARDL) Co integration Procedure with (1986–2008) annual data, the study reveals a positive significant relationship between exchange

rate fluctuations and inflation rate in Nigeria. Ibrahim (2016) investigates the determinants of real effective exchange rate in Nigeria for the period between 1960 and 2015 using the vector error correction mechanism (VECM) to separate long run from the short run fundamentals. The study reveals that; terms of trade, openness of the economy, net capital inflow and total government expenditure were the major long run determinants of real effective exchange rate in the country while variables such as; broad money supply (M_2), nominal effective exchange rate, structural adjustment program dummy, June 12 crisis and change to civil rule dummies were revealed as the major short run determinants of exchange rate in Nigeria between 1960 and 2015. Another finding from the study maintains that change to civil rule system has not been friendly with the country's real effective exchange rate. However, In order to find out the significant relationships between the official and parallel exchange rates and the consumer price index (CPI). Accordingly, Adetiloye (2010) adopted the techniques of correlation and Granger causality with time series data of 1986 to 2007 to find the significance of the relationships between the index (CPI) and the exchange rates. The study demonstrates that there is higher positive relationship between the ratio of imports and the index than exist between the parallel and official rates. In their paper, the Effects of Exchange Rate Fluctuations on Economic Growth of Nigeria, (Okorontah, & Odoemena, 2016) examine the relationship between exchange rate and economic growth in Nigeria using Ordinary Least Square (OLS) & Error Correction Mechanism (ECM) with a time series data of 1986 to 2012. However, the study contradicts many existing literature by finding a no negative relationship between exchange rate and economic growth in Nigeria. (Ajekwe et al, 2013) compares the impact of fixed and flexible exchange rate systems on the Nigerian economy using Ordinary Least Square (OLS) with a sample size of 1960 to 2007 data, the result show that fixed exchange rate system has a significant positive impact on economic growth and as well the flexible exchange rate has a positive impact on economic growth of Nigeria.

Table: 3.1 show a Summary of previous studies indicating author (s) name, country/region of study, methodology or econometric technique employed in the study and finally the findings/results of the studies as follows:

Author(s)	Country of study	Econometric Technique	Sample size	Findings/results
Culbertson, (1975)	USA, Louisiana State University	PPP calculations	1952 – 1971	Positive effect on inflation
Hooper,&Kohlhagen(1978)	USA and Germany	Model of differential risk-bearing	1965 – 1975	Positive effect on prices
Meese & Rogoff (1988).	USA, Japan, UK and Germany	Simple Exchange rate-interest rate differentials and cointegration.	_	Insignificant effect on interest rate
Edison, and Melick, (1999).	USA	ADF and KPSS	20 years	Long run effect on interest rate
Odili (2015)	Nigeria	VECM	1970 – 2012	Negative effect on trade
Bala and Asemota (2013)	Nigeria	GARCH Approaches	1985–2011M	Effect on trade
Shehu (2008)	Nigeria	OLS METHOD	1987-2008A	Insignificant positive effect on trade
Oloba and Abanga (2013)	Nigeria	EGARCH	1986-2009Q	Effect on trade
Amassoma (2016)	Nigeria	ECM	1970– 2013A	Negative effect on economic growth in the short run

Oyerinde	Nigeria	ECM	1970 -2012A	Insignificant effect on income
Eze and Okpala (2014)	Nigeria	Chow test	1970-2011A	Insignificant positive effect on growth
Uduakobong and Enobong (2015)	Nigeria	OLS	1970 – 2011A	positive effect on economic growth
David et al (2010)	Nigeria	Multiple regression	1986-2005	Negative Effect on manufacturing
Immimole and Enoma (2010)	Nigeria	ARDL	1986 -2008	Positive Significant effect on CPI
Ibrahim (2016)	Nigeria	VECM	1960- 2015	Short & long run effect on TOT, OPN, NCI and M_2, NEER, SAP respectively.
Adetiloye (2010)	Nigeria	Correlation & granger causality test.	1986-2007	Positive significant effect on CPI& import
Okorontah and Odoemena (2016)	Nigeria	ECM	1986-2012	Insignificant negative effect on growth
Ajekwe et al (2013)	Nigeria	OLS	1986- 2012	Positive effect on growth

Source: author's compilation; M: monthly Q: quarterly and A: annually

From the foregoing reviewed literature, a number of studies examine the effectiveness of exchange rate fluctuations performance of Nigerian economy. However, the findings from these studies are considered to be mixed results. This contradiction is either because of the researches inability to utilize the appropriate variables in their model or their effort to employ the required econometric technique and as well unit root to test the validity of the model and the variables respectively. In addition, some of the studies failed to include some of the variables that are critical to the effectiveness of macroeconomic policies effecting exchange rate fluctuations. However, variables such as oil prices, real effective exchange rate, inflation (CPI), and government expenditure have not been included in these. In view of these, the analysis on the impact of exchange rate fluctuations on economic growth of Nigeria remained inconclusive. The fact that these studies pay little or no attention to the speed with which the exchange rate moves in real and relative prices as well as realities of foreign exchange market in Nigeria. Therefore, this study demonstrates the extent by which the foreign exchange market participants respond to exchange rate fluctuations in the parallel market and official foreign exchange market activities. However, the research study seeks to fill these gaps overlooked by the previous studies by performing relevant econometric test that have been missed in the previous studies. Worthy of note is that, the researcher wants to uncover the standpoint from a point of attention to a new point of attention on the analysis of the impact of exchange rate fluctuations on economic growth of Nigeria.

CHAPTER FOUR

METHODOLOGY

4.1   Introduction

This chapter explains the methodological approaches adopted to conduct the study. Specifically, the study employs the econometric techniques using time series data to analyze the impact of exchange rate fluctuations on economic growth of Nigeria within the frame work of Vector Error Correction Model (VECM). In order to achieve the object of the study, the study incorporates various measures of exchange rates, economic policies and foreign exchange market as proxies of exchange rate fluctuations while real GDP serves as a proxy for the economic growth of Nigeria. However, the chapter introduced the methodology which is followed by data collection and description of variables. Accordingly, model specification and estimation techniques are last and final sections of the chapter respectively.

4.2   Data Collection

The study employs annual time series data from 1980 to 2016 (covering 37 observations). Accordingly, the data are sourced from the statistical bulletin of the central bank of Nigeria of various issues, world development indicators, 2017 and National Bureau of Statistics (NBS).

4.3   Description of Variables:

The data used in this study include the measures of economic growth and exchange rate fluctuations variables which were selected from the framework of exchange rate fluctuations Literatures. The variables which the study uses includes real GDP (RGDP) as the dependent variable which serves as a proxy for economic growth while the independent variables which serve as proxies for exchange rate fluctuation in Nigeria include real effective exchange rate (REER), Oil price (OPR), real interest rate (RIR) and inflation (CPI). The inclusion of these variables allows the study to capture the major impact of exchange rate fluctuations on economic growth in Nigeria and by so doing make the study unique and more comprehensive in comparison with some previous studies which omitted or ignored the relevance of these variables in their studies. Therefore, these variables are discussed under the following headings:

4.3.1   Real Gross Domestic Products (RGDP)

GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant local currency. In other words, real gross domestic product (RGDP) is the inflation or deflation (price changes) adjusted value of economic output (goods and services) produced by labor and property located in Nigeria.

4.3.2   Real Effective Exchange Rate (REER)

REER is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs. However, an increase in (REER) makes exports more expensive while imports cheaper and consequently loss in international trade competitiveness for Nigeria.

4.3.3   Oil Price (OPR)

The price of Nigeria's Bonny Light (FOB) is the international market annual average oil price expressed in US dollars per barrel. Fluctuations in the price of oil have an impact

on Nigeria's GDP. The fact that, an increase in oil price leads to increase in national output. In addition, oil price shock has effects on exchange rate fluctuations because crude oil is the Nigeria's major source of foreign exchange earnings.

4.3.4   Real Interest Rate (RIR)

Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator. The lending interest rate is also the bank rate usually meets the short and medium term financing needs of the private sector. The lending interest rate is normally differentiated according to the credit worthiness of borrowers and objectives of finance. The terms and conditions attached to lending rates differ by country, however, limiting their comparability.

4.3.5   Inflation (CPI)

Consumer price index reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used. Data are period averages.

4.4   Model Specification

From the foregoing, this study specifies the following functional form of the relationship between exchange fluctuations and economic growth of Nigeria. In addition, the study incorporates various explanatory variables which reflect the proxies of exchange rate fluctuations while real GDP being the dependent variable serves as the proxy for economic growth.

RGDP = f (REER, OPR, RIR, CPI) …………………………………. (1)

Where:

 The unit of measurement of the variables is given as below

RGDP – index of Gross Domestic Product (real GDP) express in constant term

REER – Real effective exchange rate index (2010 = 100)

OPR - International market annual price in US dollars.

CPI – Consumer price index (2010 = 100)

RIR - Real interest rate is in percentage (%)

However, the equation (1) above can also be transformed into mathematical model as below.

$$RGDP = \alpha + B_1REER + B_2OPR + B_3RIR + B_4CPI\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The Eqn (2) indicates the relationship between RGDP (as the dependent variable) and REER, OPR, RIR and CPI as the independent variables.

Equation (2) can in addition be transformed into an econometric model as follows:

$$RGDP = \alpha + B_1REER + B_2OPR + B_3RIR + B_4CPI + \varepsilon_t\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

This equation is the econometric model where the error term (ε_t) is added to account for the effect of all the omitted variables not included in the model and also capture the influence of any measured error that might affect the dependent variable (RGDP).

4.5   Estimation Techniques

For the purpose of analyzing the econometric model specified above, the study employs unit root test based on the augmented Dickey- Fuller (ADF) test at first instance. The implication for this is to know if the variables are stationary or not. Worthy of note is that stationary data prevents the problem of spurious and autocorrelation result. Accordingly, most time series data are by their nature non stationary. Thus, running non stationary variables results in spurious result and consequently poor inference that contradicts the reality. From the foregoing, if the variables concerned are non stationary at level but of the same order after taking first or second difference then a test of cointegration using Johansen Multivariate cointegration would be assessed. The implication for this is to confirm the presence of a long- term equilibrium relationship among these analyzed variables in the model. If these variables are cointegrated, a long term equilibrium relationship exists between the variables. If the variables are cointegrated of the same order (say I (I) as well as based on the Johansen multivariable cointegrated test, then vector error correction Model (VECM) as specified by Engle and

Granger (1987) will be applied to investigate the impact of exchange rate fluctuations on economic growth of Nigeria.

Accordingly, the long run model can be formulated in to an error correction model (ECM) which integrates shot- and long- run dynamics of the model. Therefore, the ECM is expressed as follows;

$$\Delta Y_t = \alpha + \sum_{i-1}^{P} \beta \Delta Y_{t-1} + \pi ECT_{t-1} + \varepsilon_t \dots\dots\dots\dots\dots\dots (4)$$

Where;

Δ - is the first difference operator

$Y_{t-1:}$ is a $P * 1$ vector of variables that are integrate of order one I (1)

Y_{t-1}: is one period lag of the integrated variables.

ECT_{t-1}: is one period tag of the residual term (i.e. disequilibrium) from the long- run relationship.

ε_t: is white noise error term while α, β, and π are the coefficients of VECM

α -Intercept

β -Short run coefficient

π-Long run coefficient of the period log of the disequilibrium term. In theory of π should be negative (i.e $\pi < 0$) and significant if the disequilibrium is to be corrected in subsequent period and also for the need to restore long run equilibrium. Therefore, the coefficient of the error term indicates the speed of adjustment to the long run equilibrium. This explains by how much any deviation from the long run relationship is corrected in each period.

CHAPTER FIVE

EMPIRICAL RESULTS AND DISCUSSION

5.1   Introduction

This chapter presents and discusses the empirical results based on the outcomes of the study. The empirical results include unit root test results, co-integration test results and VECM results which are presented in subsequent tables. In addition, the empirical results for Granger causality test and variance decomposition test are also analyzed. The study critically analysis and discusses the result as well as compares and contrasts the results with the previous empirical studies reviewed in chapter three for policy implication.

5.2   Unit Root Test Results

The unit root tests for stationarity of all the variables interest are carried out before estimation of VAR model to determine stationary nature the variables and as well avoid the problems spurious results and autocorrelation. The results of the Augmented Dickey-Fuller (ADF) unit root test shows that all the variables are found to be non-stationary at level with the exception of real interest rate that has been stationary at both level and first difference. Nevertheless, all the variables were later found to be stationary at first difference.

Table 5.1: Presents Augmented Dickey Fuller (ADF) Unit Root Test below

Variables	LEVEL			FIRST DIFFERENCE			Remark
	Trend & Intercept			Trend & Intercept			
	T-Statistics	Critical value 5%	Prob.	T-statistics	Critical value 5%	Prob.	
RGDP	-1.475218	-3.540328	0.8197	-5.327536	-3.544284	0.0006*	I(1)
REER	-1.905747	-3.540328	0.6309	-4.062321	-3.544284	0.0155*	I(1)
OPR	-1.993967	-3.540328	0.5848	-6.127689	-3.544284	0.0001*	I(1)
RIR	-1.595943	-3.574244	0.7698	-9.533775	-3.544284	0.0000*	I(1)
INFcpi	-.344449	-3.544284	0.0500	-5.486463	-3.544284	0.0004*	I(1)

Source*: Researcher's computation using Eviews 9.5*

Note: * I (I) stands for 'Stationary', I(0) stands for 'Non stationary'. The rejection of null hypothesis (series is non stationary) is based on the Mackinnon critical values (1991).

From table 5.1, we can observe that all the variables are non-stationary at level but become stationary after taking the first difference using trend and intercept. However, at first difference all the variables became stationary in both intercept and linear trend with the same order I(1).

5.3   Lag Order Selection Criteria

In order to estimate the cointegrating vectors, it is pertinent to select an optimal lag length to have a significant influence on the outcome of the results. The choice for an optimal number of lag depend on the recommendation of each criteria and the recommended lag with the lowest possible value. However, the order of lag selection is presented in Table 5.2.

Table 5.2 Lag order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1666.077	NA	6.64e+37	101.2774	101.5041	101.3537
1	-1542.132	202.8191*	1.68e+35*	95.28072*	96.64118*	95.73847*
2	-1523.002	25.50670	2.69e+35	95.63647	98.13065	96.47569
3	-1510.816	12.55474	7.99e+35	96.41311	100.0410	97.63379
4	-1483.265	20.03723	1.39e+36	96.25849	101.0201	97.86063

* indicates lag order selected by the criterion
Source: Authors' Computations Using Eviews 9.5.

The optimal lag length in the cointegration was tested using the five lag selection criteria namely, Akaike Information Criteria (AIC), Schwarz Bayesian Information Criteria (SBIC), Likelihood Ratio Tests (LR), Final Prediction Error (FPE) and Hannan-Quinn Information Criteria (HQIC). As observed from Table 5.3, the entire criterion selected 1 lag with no exception. Therefore, this study will use 1 lag as recommended by the entire criterion.

5.4   Cointegration Test

The result of the unit root test confirms that after taking first difference all the variables are stationary and integrated of order I(1). The Johansen test for Co-integration is conducted to check the presence of a long-run relationship between two or more variables that are non-stationary at level. The motivation behind the Cointegration tests is to find out if RGDP, REER, OPR, RIR, and INF are cointegrated or not. Therefore, based on these findings we can expect the possibility of the existence of long run relationship among the variables. However, Table 5.3 below presents the Johansen test for Co-integration results.

Table 5.3 Unrestricted Johansen Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.
None *	0.692283	84.91365	69.81889	0.0020*
At most 1	0.457128	43.66356	47.85613	0.1172
At most 2	0.333592	22.28267	29.79707	0.2831
At most 3	0.201975	8.077818	15.49471	0.4571
At most 4	0.005166	0.181266	3.841466	0.6703

Trace test indicates 1 cointegrating eqn (s) at the 0.05 level

 * denotes rejection of the hypothesis at the 0.05 level

Source: Authors' Computations Using Eviews 9.5

The result from the cointegration test suggests that there is evidence of cointegration among the variables in the model. Trace test indicates 1 cointegrating equation. However, this indicates the presence of a long-run relationship between the variables.

Table 5.4 Unrestricted Johansen Cointegration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigen value	Max –Eigen Statistics	0.05 Critical Value	Prob.
None *	0.692283	41.25009	33.87687	0.0055*
At most 1	0.457128	21.38089	27.58434	0.2539
At most 2	0.333592	14.20485	21.13162	0.3485
At most 3	0.201975	7.896551	14.26460	0.3893
At most 4	0.005166	0.181266	3.841466	0.6703

Maximum Eigen value test indicates 1 cointegrating eqn (s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Source: Authors' Computations Using Eviews 9.5

The result from the cointegration test suggests that there is evidence of cointegration among the variables in the model. Maximum Eigen value test indicates 1 cointegrating equation. However, this indicates the presence of a long-run relationship between the variables.

5.5   Vector Error Correction Model Result

Given that the study variables are integrated of I (1) and cointegrated for VECM estimation, the study presents the estimation of the vector error correction model (VECM) in table 5.5 below

Table 5.5: Vector Error Correction Model Result

Variables	Coefficient	Std. Error	t-Statistic
Constant	9.266380	4.02711	2.30100
RGDP $_{t-1}$	0.417139	0.16341	2.55271
REER $_{t-1}$	3.873541	5.44895	0.71088
OPR $_{t-1}$	1.630820	2.73843	0.59553
RIR $_{t-1}$	1.244731	2.42779	0.51270
INF_CPI $_{t-1}$	2.117882	2.43770	0.86880
ECM $_{t-1}$	-0.019595	0.02364	-0.82894

Source: Authors' Computations Using Eviews 9.5

The table 5.5 presents the estimate of vector error correction model after all the variables of interest are I (1) and cointegrated with cointegration relation. The VECM allows the long run behavior of the endogenous variables to restore to their long run dynamics. The coefficient of the ECT shows a negative sign and statistically insignificant at five percent (5%) with speed of adjustment to equilibrium at 0.019 percent. This implies that equilibrium is restored (adjusted) by 2% of the past year's deviation from equilibrium. The low absolute value is a sign of a slow speed of adjustment towards equilibrium. This means that the speed of adjustment of fluctuations in exchange rate was too low in the past year in Nigeria. As a result, the restoration to equilibrium path will take a longer time unless equilibrium agents (government and monetary authorities) make active policies that will speed up the adjustment. In other words, Masih and Masih (1996) cited in Faisal (2016) identified another long run causality showing that ECT can be determined by using the significance of T- statistics. Therefore, the t- statistics shows a value of -0.82894 and is statistically insignificant because is less than 2%. This indicates

that it has no effect on the system. These insignificant values indicate that the government needs to revise its flexible exchange rate policy guidelines because they have no effect on the system given the economic recession Nigeria is currently in. However, the short run positive relationship is in line with the recent managed floating exchange rate intervention policy in Nigeria that has been used to correct the shocks and distortions to meet the objective of maintaining exchange rate and price stability to achieve economic growth in Nigeria. Accordingly, it implies that the behaviors of the variables are controlled by the monetary authorities in Nigeria.

5.6   Granger Causality Tests

Granger (1988) maintains that if there is evidence of cointegration among the estimated variables, then a bidirectional or unidirectional causality exists. The granger causality is tested to capture dynamics of the models using the first difference of the variables. Table 5.6: presents the Pair-wise Granger Causality Tests Results.

Table 5.6: Pair-wise Granger Causality Tests Results

Null Hypothesis:	Obs	F-Statistic	Probability
REER does not affect RGDP	36	5.08027	0.0310*
RGDP does not affect REER		0.00820	0.9284
OPR does not affect RGDP	36	0.15302	0.6982
RGDP does not affect OPR		0.68954	0.4123
RIR does not affect RGDP	36	0.05595	0.8145
RGDP does not affect RIR		3.04456	0.0903
INF_CPI does not affect RGDP	36	0.28199	0.5990
RGDP does not affect INF_CPI		1.18663	0.2839
OPR does not affect REER	36	0.20604	0.6529
REER does not affect OPR		0.80819	0.1879
RIR does not affect REER	36	1.26240	0.2693
REER does not affect RIR		1.8E-06	0.9989
INF_CPI does not affect REER	36	2.45193	0.1269
REER does not affect INF_CPI		2.20565	0.1470
RIR does not affect OPR	36	0.02047	0.8871
OPR does not affect RIR		4.22498	0.0478*
INF_CPI does not affect OPR	36	0.01178	0.9142
OPR does not affect INF_CPI		1.66345	0.2061
INF_CPI does not affect RIR	36	3.64455	0.0650
RIR does not affect INF_CPI		0.17539	0.6781

Source: Authors' Computations Using Eviews 9.5

From the table 5.6 above, The result of pair-wise Granger causality test reveals that the null hypothesis of REER does not affect RGDP is rejected , the fact that the probability value of the REER is less than 5% (0.0310) critical value. On the one hand, all the other null hypotheses were accepted with the exception of the null hypothesis of OPR does not affect RIR which again is rejected because its probability value is less than 5% (0.04650).

5.7 Variance Decomposition

The analysis for variance decomposition of variables of interest maintains that changes related with one variable have corresponding effects on the assessment of another variable. It states that the relationship about the comparative importance of a change in explained (RGDP) variable in a vector auto regressive (VAR) as a result of a corresponding change in the explanatory variables of interest (REER, OPR, RIR, INF_CPI) within nine years periods. Accordingly, these periods are classified into three streams ranging from short (1 year to 3 years) periods, medium (4 years to 6 years) periods and long term (7 years to 9 years) periods. However, the study uses the last period of each term for the analysis.

Table: 5.7 Variance Decomposition of RGDP

Variance Decomposition of RGDP					
Periods	RGDP	REER	OPR	RIR	INF_CPI
Short Term	98.27660	0.358292	0.104023	1.230095	0.030986
Medium Term	98.14648	0.147044	0.065785	1.616002	0.024690
Long Term	98.10203	0.092081	0.054215	1.728510	0.023167

Source: Authors' Computations Using Eviews 9.5

The result of RGDP variance decomposition signified that variation in RIR is the largest source of variation in RGDP apart from its own shock. The contributions of the other

variables (REER, OPR and INF (CPI)) are minimal compared to that of RIR. However, variation in REER is larger than OPR and INF (CPI).

Table: 5.8 Variance Decomposition of REER

Variance Decomposition of REER					
Periods	RGDP	REER	OPR	RIR	INF_CPI
Short Term	2.556957	96.19929	0.178863	1.045000	0.019891
Medium Term	2.812797	95.73126	0.087154	1.355562	0.013223
Long Term	2.910278	95.56393	0.056620	1.457864	0.011313

Source: Authors' Computations Using Eviews 9.5

The result of REER variance decomposition signified that variation in RGDP is the largest source of variation in REER apart from its own shock. The contributions of the other variables (RIR, OPR and INF(CPI)) are minimal compared to that of RGDP. However, variation in RIR is larger than OPR and INF(CPI).

Table: 5.9 Variance Decomposition of OPR

Variance Decomposition of OPR					
Periods	RGDP	REER	OPR	RIR	INF_CPI
Short Term	6.901331	0.445854	91.67998	0.718191	0.254646
Medium Term	9.503114	0.697147	88.85058	0.731190	0.217965
Long Term	10.56917	0.799434	87.65777	0.761650	0.211984

Source: Authors' Computations Using Eviews 9.5

The result of OPR variance decomposition signified that variation in RGDP is the largest source of variation in OPR apart from its own shock. The contributions of the other

variables (REER, RIR and INF(CPI)) are minimal compared to that of RGDP. However, variation in RIR is larger than REER and INF (CPI).

Table: 5.10 Variance Decomposition of RIR

Variance Decomposition of RIR					
Periods	RGDP	REER	OPR	RIR	INF_CPI
Short Term	1.922017	11.07859	16.27272	41.78020	28.94647
Medium Term	2.067192	11.07623	11.83154	43.41648	31.60856
Long Term	2.134164	10.96459	9.666374	43.21203	34.02283

Source: Authors' Computations Using Eviews 9.5

The result of RIR variance decomposition signified that variation in INF(CPI) is the largest source of variation in RGDP apart from its own shock. The contributions of the other variables (REER, OPR and RGDP) are minimal compared to that of INF(CPI). However, variation in OPR is larger than RGDP and REER.

Table: 5.11 Variance Decomposition of INF_CPI

Variance Decomposition of INF_CPI					
Periods	RGDP	REER	OPR	RIR	INF_CPI
Short Term	1.863396	8.488783	6.165188	39.47255	44.01008
Medium Term	2.284064	13.96040	7.626645	35.00701	41.12188
Long Term	2.444064	15.53317	7.966318	33.95594	40.10051

Source: Authors' Computations Using Eviews 9.5

The result of INF (CPI) variance decomposition signified that variation in RIR is the largest source of variation in INF (CPI) apart from its own shock. The contributions of

the other variables (REER, OPR and RGDP) are minimal compared to that of RIR. However, variation in REER is larger than OPR and RGDP.

5.8   Discussion of Results

From the foregoing analysis, the existence of a long run relationship among the variables was established by the cointegration test while the VECM coefficient of the cointegrating equation shows that the speed of adjustment has a very low effect on the system. While the result of granger causality shows that REER affects economic growth of Nigeria and also RIR affects OPR, while exchange rate granger caused inflation. This implies that exchange rate, oil price, real interest rate are significant variables in explaining economic growth in Nigeria and also significant variables in explaining inflation through their combined effect. Therefore, it can be concluded that exchange rate fluctuation policies can be used positively to stimulate economic growth of Nigeria. Accordingly, the results variance decomposition reveal the relationship about the comparative importance of a change in explained (RGDP) variable in a vector auto regressive (VAR) as a result of a corresponding change in the explanatory variables of interest (REER, OPR, RIR, INF_CPI) within the observed years or periods. However, the study on the analysis of the impact of exchange rate fluctuations on economic growth of Nigeria reveals a positive and long – run impact on Nigeria's economic growth. This is in line with the findings of Edward and Yeyati (2005) which found that countries with more flexible exchange rate grow faster than those without it. In another study conducted in east and south europe by Dubas and Lee (2005) found a positive relationship between exchange rate stability and economic growth. Using vector error correction model (VECM) technique in Nigeria Rano (2009) found a positive impact of exchange rate fluctuatuation on economic growth of Nigeria. Asher (Unpublished, 2012) in a study in Nigeria cited in Isola et al (2016) found a strong impact of exchange rate on economic growth of Nigeria. The finding of Udoakobang and Enobong (2015) in Nigeria reveals a positive effect of exchange rate fluctuations on economic growth of Nigeria. Accordingly, Amassoma (2016) also comfirmes the long- run positive relationship of exchange rate with economic growth of Nigeria.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Summary

The study analyses the impact of exchange rate fluctuations on economic growth of Nigeria using error correction model (VECM) with annual time series data from 1980-2016.The study is organized into six chapters: chapter one introduces the study along with problem statement as well as objective and originality of the study. Accordingly, chapter two looks at the background of economic growth and foreign exchange market in Nigeria both from policy perspective regimes up to the most recent exchange rate policies by the monetary authorities. In addition, chapter three reviews the theoretical issues related to exchange rate fluctuations regimes as well as four theoretical exchange rate models that are readily replicable and applicable in Nigeria. However, this model serves as the basis of this study. These models include the purchasing power parity, interest rate parity, Mundell – Fleming and the monetary model that consists of flexible price and the sticky price monetary model. Accordingly, the chapter three reviews some empirical studies related to the study and the findings of these studies produce some mixed result of positive and negative impact of exchange rate fluctuations on economic growth of Nigeria. The lack of consensus in their finding could be as a result of differences in data series, unit of measurement of the variables, type of model, technique adopted and the prevailing economic condition during which the study is conducted. This study tries to bridge the gaps of these previous studies. Nevertheless, chapter four discusses the methodological part of the study where it describes the variables of interest

and the secondary sources of the data as well as specified the model applied in the study. In addition, the chapter presents the estimation techniques applied in the study which include Augmented Dickey- Fuller (ADF) unit root test of at first instance to check the stationarity of the variable at same order. Following is the optimal lag selection criterion, the test of cointegration, VECM test, Granger causality test and variance decomposition estimate. Accordingly, chapter five discusses the empirical results based on outcome of the study and compares them with the previous studies. All the variables of the ADF test were finally stationary at same order I(1) and the 1 lag was recommended by the entire criterion. Therefore, the test for cointegration reveals the existence of long – run relationship among the variables of interest in model. However, the coefficient of ECT_{t-1} is negative and statistically insignificant then the T-statistics is also considered to determine the significance of the ECT. Therefore, the Granger causality test finds that REER causes RGDP and OPR causes RIR. This implies that exchange rate fluctuation proxies have affects on economic growth of Nigeria. Nevertheless, the variance decomposition states that a change related to the explanatory variables have a corresponding effect on the assessment of the dependent variable of interest (RGDP) in Nigeria. Chapter six consists of summary, conclusion and recommendations for policy implications in Nigeria.

6.2   Conclusion from Major Findings

The Granger causality findings from this study reveal a short run unidirectional (one way) impact of exchange rate on economic growth of Nigeria. This is supported by Ajekwe, (2013) who finds out that exchange rate has positive impact on economic growth in Nigeria. In addition, oil price has a short run unidirectional impact on interest rate. This is in line with the findings of Mati, (2014) oil price has insignificant positive impact on exchange rate volatility in the short run but contradicts the long run findings. The implication for this is that REER causes RGDP while OPR causes RIR while inflation is driven by the combines of these variables to impact on economic growth in Nigeria. However, the overall finding reveals that exchange rate fluctuations have positive impact on economic growth of Nigeria. In addition, the finding from variance decomposition estimates reveals states a relationship about the comparative importance

of a change (i.e increase or decrease) in RGDP is the result of a corresponding increase or decrease (i.e change) in REER, OPR,RIR, and INF(cpi) within the observed periods in the study. Nevertheless, the findings from cointegration results show an evidence of long run relationship among the variables of interest. Accordingly, the finding from vector error correction model indicates that the ECT_{t-1} is a negative and statistically insignificant. This implies that it has a low effect on the system unless the equilibrium agents (government) can create effective policies to speed up the adjustment in order to be capable of converging to the long run equilibrium after some deviation and shocks in the system. Therefore, the coefficient of the speed of adjustment is relatively low (0.019) and this implies that no strong effect to restore equilibrium because about 2% of the equilibrium could be restored in the past year while the remaining in the subsequent years. However, the short run positive relationship is in line with the recent central bank of Nigeria exchange rate policy intervention in February, 2017 to restore stability in the foreign exchange market in order to achieve economic prosperity and growth. Until February, 2017 the Nigeria's foreign exchange market have not been adequately investigated overtime. Worthy of note is that, various exchange rate policies and regimes failed to achieve the goals and objectives of their establishment in Nigeria because of distortions and irregularities in the parallel, interbank/autonomous and official foreign exchange market in Nigeria.

Nevertheless, the study finds that the choice of exchange rate regime has possible effect on the exchange rate fluctuations in formulating growth policies in Nigeria. Accordingly, the Granger causality test finds a unidirectional impact of exchange rate fluctuation proxy on real GDP within the framework of study period in Nigeria.

6.3   Recommendations

The study has the following recommendations in order to improve the competiveness of Nigerian currency against major international currencies and especially dollar exchange rate to achieve economic growth and development of the Nigerian economy. The recommendations include the following;

- Based on the available data and conclusion of this study, the adoption of flexible exchange rate regime that is left to be determined by the market forces in the foreign exchange market since 2016 has failed to provide solution to the depreciating value of naira until the recent intervention by the CBN in February-May, 2017. Therefore, the study recommends that there should be some form of intervention to manage the flexible exchange rate system in the foreign exchange market in Nigeria.

- Accordingly, the study recommends that the monetary authorities should strengthen the three foreign exchange markets' (official, interbank/autonomous and parallel markets) operations because of their influence on exchange rate fluctuations in Nigeria. In addition to the foreign exchange market reform, there is need for effective and efficient legal framework that would specifically act on the functioning of the existing supervisory and regulatory financial institutions such as the central bank of Nigeria (CBN), ministry of finance, economic and social development, and national deposit insurance corporation.

- In addition, based on the available data and recent growth performance of the Nigerian economy, there is the need for the Nigerian government to diversify the export base of other economic sectors against the oil sector that serves as the major source of our foreign exchange earnings to key areas like agriculture, manufacturing and mining among others. This will indubitably increase the foreign exchange earnings of Nigeria and consequently makes the foreign exchange market becomes competitive and a positive contributor to real GDP thereby accelerating economic growth and development in Nigeria.

- Worthy of note is that, the central bank of Nigeria (CBN) should take a robust decision when using its foreign exchange reserves to defend the exchange rate. The implication for this is that, there is a trade off to either imposes strict capital control or accepts a weaker exchange rate with the possibility of losing control of the increase in inflation.

- In all, Nigeria has great opportunities for economic growth when we break against the negative past for a positive economic future of Nigeria as a country.

6.4   Areas for Further Researches

This study encourages and recommends future studies to narrow the study of this nature into sector specific. For instance, the impact of managed floating on the manufacturing sector in Nigeria, the impact of flexible exchange rate in attracting foreign direct investment in Nigeria. In addition, a comparative analysis of the impact of free floating and managed floating on the level of domestic prices in Nigeria is highly recommended.

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APPENDIX

Appendix I: Data

YEAR	RGDP	REER	OPR	RIR	CPI
1980	2.16083E+13	292.8344	37.375	-3.54742	0.40873
1981	1.87716E+13	325.4149	36.667	-8.05542	0.493799
1982	1.85739E+13	333.7525	33.636	4.491262	0.53181
1983	1.76358E+13	395.0772	30.395	-3.33206	0.655256
1984	1.72793E+13	546.0456	29.276	-2.67134	0.772026
1985	1.87175E+13	489.6102	27.973	3.686666	0.829428
1986	1.70789E+13	267.468	15.04	-1.49676	0.876848
1987	1.52426E+13	85.21023	19.162	-31.9218	0.975847
1988	1.63923E+13	85.62721	15.96	-5.12928	1.507793
1989	1.74524E+13	76.24926	19.591	-16.96	2.268726
1990	1.96804E+13	70.74783	24.493	14.64821	2.435804
1991	1.95588E+13	59.96909	21.481	2.072104	2.752629
1992	1.96436E+13	49.74446	20.561	-25.767	3.979994
1993	2.00543E+13	54.50262	18.458	4.374451	6.255168
1994	2.02367E+13	100.7952	17.186	-8.03441	9.822597
1995	2.01745E+13	160.1283	18.428	-43.5727	16.97694

1996	2.11819E+13	207.6351	22.154	-9.71197	21.94579
1997	2.17755E+13	235.9241	20.599	16.61355	23.81774
1998	2.23669E+13	272.3435	14.388	25.28227	26.19865
1999	2.24729E+13	70.14648	19.252	2.767927	27.93258
2000	2.36681E+13	69.86898	30.298	-10.3198	29.86923
2001	2.47121E+13	77.83398	25.924	23.83785	35.50664
2002	2.56473E+13	78.0773	26.098	-10.8121	40.07868
2003	2.83029E+13	73.19962	31.14	8.613594	45.70243
2004	3.78511E+13	74.90703	41.438	19.36914	52.5569
2005	3.9155E+13	85.54584	56.466	-3.34037	61.9454
2006	4.237E+13	91.50221	66.103	-0.3731	67.04941
2007	4.52632E+13	89.64672	72.363	11.61433	70.65815
2008	4.81013E+13	99.12479	99.568	4.190484	78.83894
2009	5.14368E+13	92.13576	61.693	23.7065	87.93512
2010	5.54694E+13	100	79.428	-42.3102	100
2011	5.81804E+13	100.3086	95.077	5.941526	110.8408
2012	6.06701E+13	111.3909	94.201	6.883106	124.3822
2013	6.39428E+13	118.8171	97.936	10.24735	134.9246
2014	6.79775E+13	127.1006	93.258	11.35621	145.796
2015	6.97807E+13	126.0723	48.688	13.59583	158.9435
2016	7.10302E+13	113.6085	43.144	14.99583	183.8926

Appendix II: Variance Decomposition

Variance Decomposition of RGDP:

Period	S.E.	RGDP	REER	OPR	RIR	INF_CPI_
1	1.97E+12	100.0000	0.000000	0.000000	0.000000	0.000000
2	3.47E+12	98.83755	0.430522	0.177804	0.553946	0.000183
3	4.73E+12	98.27660	0.358292	0.104023	1.230095	0.030986
4	5.81E+12	98.14967	0.243417	0.090006	1.484471	0.032436
5	6.75E+12	98.16033	0.181915	0.078711	1.552516	0.026529
6	7.58E+12	98.14648	0.147044	0.065785	1.616002	0.024690
7	8.34E+12	98.11933	0.122813	0.059682	1.673434	0.024739
8	9.04E+12	98.10727	0.105080	0.057118	1.706566	0.023964
9	9.69E+12	98.10203	0.092081	0.054215	1.728510	0.023167

Variance Decomposition of REER:

Period	S.E.	RGDP	REER	OPR	RIR	INF_CPI_
1	70.29370	2.485898	97.51410	0.000000	0.000000	0.000000
2	119.9205	2.464652	96.78930	0.261573	0.484104	0.000370
3	155.9427	2.556957	96.19929	0.178863	1.045000	0.019891
4	183.5806	2.671835	95.92350	0.134381	1.251483	0.018799
5	207.6554	2.758264	95.81916	0.105365	1.302382	0.014831
6	229.6069	2.812797	95.73126	0.087154	1.355562	0.013223
7	249.5191	2.853062	95.65275	0.073825	1.407450	0.012909
8	267.8436	2.885501	95.60069	0.064115	1.437625	0.012069
9	285.0486	2.910278	95.56393	0.056620	1.457864	0.011313

Variance Decomposition of OPR:

Period	S.E.	RGDP	REER	OPR	RIR	INF_CPI_
1	13.95854	2.921327	0.283606	96.79507	0.000000	0.000000
2	18.83977	5.171907	0.160637	93.93744	0.531806	0.198206
3	22.30437	6.901331	0.445854	91.67998	0.718191	0.254646
4	25.36372	8.130638	0.635380	90.32453	0.687968	0.221483
5	28.26217	8.920846	0.660970	89.51455	0.692632	0.211006
6	30.85396	9.503114	0.697147	88.85058	0.731190	0.217965
7	33.20183	9.959821	0.749701	88.32597	0.747758	0.216746
8	35.41557	10.30354	0.780827	87.94989	0.752891	0.212859
9	37.51025	10.56917	0.799434	87.65777	0.761650	0.211984

Variance Decomposition of RIR:

Period	S.E.	RGDP	REER	OPR	RIR	INF_CPI_
1	14.51829	2.161801	0.007541	18.05218	79.77848	0.000000
2	20.07621	1.988282	13.19619	16.62097	48.44990	19.74466
3	22.86992	1.922017	11.07859	16.27272	41.78020	28.94647
4	25.28732	1.946811	9.622670	15.65309	44.19010	28.58733
5	27.47581	2.029378	10.59240	13.31822	44.65105	29.40895
6	29.44460	2.067192	11.07623	11.83154	43.41648	31.60856
7	31.25294	2.086742	10.85179	11.14307	43.14778	32.77062
8	32.97142	2.111951	10.82720	10.38569	43.33758	33.33758
9	34.61112	2.134164	10.96459	9.666374	43.21203	34.02283

Variance Decomposition of INF_CPI_:

Period	S.E.	RGDP	REER	OPR	RIR	INF_CPI_
1	15.71224	1.064891	1.518098	2.280649	37.92650	57.20986
2	22.62903	1.500464	3.691883	4.478504	40.00470	50.32445
3	28.36649	1.863396	8.488783	6.165188	39.47255	44.01008
4	33.37729	2.052471	11.83414	7.509792	36.62210	41.98150
5	37.42148	2.184585	13.19486	7.614462	35.32946	41.67663
6	41.02170	2.284064	13.96040	7.626645	35.00701	41.12188
7	44.42594	2.352838	14.64986	7.801988	34.62019	40.57512
8	47.58505	2.403275	15.17297	7.921510	34.20837	40.29388
9	50.51509	2.444064	15.53317	7.966318	33.95594	40.10051

Cholesky Ordering: RGDP REER OPR RIR INF_CPI_