NEAR EAST UNIVERSITY

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ECONOMICS PROGRAM

THE IMPACT OF FISCAL POLICY MEASURES ON THE REAL SECTORS IN NIGERIA 1981-2018

NELSON ALOZIE

MASTER'S THESIS

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DEDICATION

This thesis is dedicated to the Lord Jesus Christ for seeing me through in the course of my Master's program

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ABSTRACT

THE IMPACT OF FISCAL POLICY MEASURES ON THE REAL SECTORS IN NIGERIA

This study was designed to determine the impact of fiscal policy on the real sectors performance in Nigeria between 1981 and 2018. Nigeria economic growth has seen tremendous changes over the years where it has been stable for the recent period. The real sectors are classified as aggregate unit that constitute productive capacity in the economy. The main objective of the study is to investigate the effect of fiscal policy on the real sectors. The specific objective include to check the impact of capital expenditure and re-current expenditure on the real sectors (agricultural sectors and industrial sectors). Furthermore to ascertain the effect of taxation on the real sectors.

The quarterly data from 1981 Q1 to 2018 Q4 relevant to the study were collected from the Central Bank of Nigeria statistical bulletin. The data were analyzed with econometrics techniques. The Autoregressive Distribution Lag (Short-run and Long-run ARDL) econometric methodology was adopted in estimating the relationship between fiscal policy instrument of government expenditure (capital expenditure, recurrent expenditure), tax revenue and the real sectors of agriculture contribution to GDP and industrial contribution to GDP. I equally employed ARDL Bound test for co-integration in estimating our result and to ascertain the relationship between the variables, Breusch Pagan Godfrey test was conducted for heteroskedasticity, and CUSUM test to check the stability and the normality in the model.

The ADF results of the test revealed all the variables are non-stationary at level, which lead to the application of the first difference. Previous attempt to understand the effect of fiscal policy on the real sectors resulted in conflicting opinions. The existing findings suggest significant

influence from fiscal policy, especially the moderating effect of capital and re-current expenditure.

The study thus concludes that fiscal policy have positive effect on the real sectors in Nigeria and has helped to improve economic growth in Nigeria within the period covered by the study. The study found out that while government expenditure positively and significantly impacted on the performance of the agricultural contribution to GDP and industrial contribution to GDP; Tax revenue also had an impact on the performance of agricultural and industrial sector contribution to GDP. Furthermore. In the short run ARDL both AGDP and INGDP, capital expenditure (CEX) was statistically significant. Therefore an increase in capital expenditure will eventually lead to an increase in both Industrial contribution to GDP (INGDP) and Agricultural contribution to GDP (AGDP).

While in the long run ARDL for AGDP, CEX and TAX was significant, meaning an increase in capital expenditure (CEX) and TAX will lead to a potential increase in the Agricultural contribution to GDP (AGDP). In the long run ARDL for INGDP. Capital expenditure (CEX) and re-current expenditure (REX) was statistically significant, meaning an increase in capital expenditure (CEX) and re-current expenditure (REX) will lead to a potential increase in the Industrial contribution to GDP (INGDP)

Finally, the study recommended that an expansionary fiscal policy (i.e increase in government spending should be implemented) in the real sectors and contrationary fiscal policy (i.e reduction in tax levies) should be implemented in the real sectors. Government spending should be channeled to capital project and social overhead capital that will encourage investment good infrastructure, good networking road etc. Taxation still plays a vital role in the real sectors, due to the fact, Taxation plays a good role in promoting investment.

Keywords*: Fiscal Policy, economic growth, Real sectors, Agricultural output, Industrial output, Capital expenditure, recurrent expenditure, Taxation, Nigeria*

ÖZ

THE IMPACT OF FISCAL POLICY MEASURES ON THE REAL SECTORS IN NIGERIA

Bu çalışma, 1981-2018 yılları arasında Nijerya'da maliye politikasının reel sektör performansı üzerindeki etkisini belirlemek için tasarlanmıştır. Nijerya'da ekonomik büyüme, son dönemde istikrarlı seyrettiği yıllarda muazzam değişiklikler göstermiştir. Reel sektörler, ekonomide üretken kapasiteyi oluşturan toplam birim olarak sınıflandırılır. Çalışmanın temel amacı maliye politikasının reel sektörler üzerindeki etkisini araştırmaktır. Spesifik amaç, sermaye harcamalarının ve cari harcamaların reel sektörler (tarım sektörleri ve sanayi sektörleri) üzerindeki etkisini kontrol etmeyi içerir. Ayrıca vergilendirmenin reel sektörler üzerindeki etkisini tespit etmek.

Çalışmayla ilgili 1981 Q1'den 2018 Q4'e kadar üç aylık veriler Nijerya Merkez Bankası istatistik bülteninden toplanmıştır. Veriler ekonometrik tekniklerle analiz edilmiştir. Otoregresif Dağılım Gecikmesi (Kısa ve Uzun Vadeli ARDL) ekonometrik metodolojisi, kamu harcamalarının maliye politikası aracı (sermaye harcaması, cari harcamalar), vergi geliri ile tarımın GSYİH ve sanayiye katkısının reel sektörleri arasındaki ilişkinin tahmin edilmesinde benimsenmiştir. GSYİH'ye katkı. Sonuçumuzu tahmin etmede ve değişkenler arasındaki ilişkiyi tespit etmede eşbütünleşme için ARDL Bound testini eşit olarak kullandım, heteroskedastisite için Breusch Pagan Godfrey testi ve modeldeki kararlılığı ve normalliği kontrol etmek için CUSUM testi yapıldı.

Testin ADF sonuçları, tüm değişkenlerin düzeyde durağan olmadığını ortaya koymuş ve bu da birinci farkın uygulanmasına yol açmıştır. Maliye politikasının reel sektörler üzerindeki etkisini anlamaya yönelik önceki girişimler, çelişkili görüşlerle sonuçlanmıştır. Mevcut bulgular, özellikle sermaye ve cari harcamaların düzenleyici etkisi olmak üzere maliye politikasından önemli bir etkiye sahip olduğunu göstermektedir.

Böylece çalışma, maliye politikasının Nijerya'daki reel sektörler üzerinde olumlu bir etkiye sahip olduğu ve çalışmanın kapsadığı dönemde Nijerya'da ekonomik büyümenin iyileşmesine yardımcı olduğu sonucuna varmaktadır. Çalışma, devlet harcamalarının GSYİH'ye tarımsal katkı ve GSYİH'ya endüstriyel katkı performansını olumlu ve önemli ölçüde etkilediğini; Vergi geliri, tarım ve sanayi sektörünün GSYİH'ye katkısının performansı üzerinde de etkili oldu. Üstelik. Kısa vadede ARDL'de hem AGDP hem de INGDP, sermaye harcaması (CEX) istatistiksel olarak anlamlıydı. Bu nedenle, sermaye harcamalarındaki bir artış, sonunda hem Sanayinin GSYİH'ye katkısında (INGDP) hem de GSYİH'ye Tarımsal katkıda (AGDP) bir artışa yol açacaktır.

AGDP için uzun vadede ARDL, CEX ve VERGİ önemliydi, yani sermaye harcamasında (CEX) ve VERGİ'de bir artış Tarımın GSYİH'ye katkısında (AGDP) potansiyel bir artışa yol açacaktır.

INGDP için uzun vadede ARDL. Sermaye harcaması (CEX) ve yeniden cari harcama (REX) istatistiksel olarak anlamlıydı, yani sermaye harcamasındaki (CEX) ve yeniden cari harcamadaki (REX) bir artış Sanayinin GSYİH'ye katkısında (INGDP) potansiyel bir artışa yol açacaktır

Son olarak çalışmada, reel sektörde genişletici bir maliye politikası (yani devlet harcamalarının artırılması), reel sektörde ise karşıt maliye politikasının (vergi vergilerinin azaltılması) uygulanması tavsiye edilmiştir. Devlet harcamaları, yatırımı teşvik edecek sermaye projesine ve sosyal genel sermayeye kanalize edilmelidir, iyi altyapı, iyi ağ oluşturma yolu vb. Vergilendirme, reel sektörlerde hala hayati bir rol oynamaktadır, çünkü Vergilendirme, yatırımı teşvik etmede iyi bir rol oynamaktadır.

Anahtar Kelimeler: maliye politikası, ekonomik büyüme, reel sektörler, Tarımsal çıktı, endüstriyel çıktı, sermaye artırımı, cari harcama, vergilendirme, Nijerya

TABLE OF CONTENT

ACCEPTANCE/ APPROVAL

DECLARATION

DEDICATION

ACKNOWLEDGEMENT..……..iii

ABSTRACT……..iv-v

OZ.……...vi-vii

LIST OF TABLES……...xi

LIST OF FIGURES……xii

ABBERVIATIONS.....xiii

CHAPTER ONE: INTRODUCTION

1.1 Background of the Research……1-3
1.2 Statement of the Problem…….4-5
1.3 Research Objectives…….....5
1.4 Research Question……..5
1.5 Research Hypothesis…….....6
1.6 Scope of the Study….……6
1.7 Significance of the Research…….....6
1.8 Research Rationale…….7
1.9 Structure of the Study…….7

CHAPTER TWO: LITERATURE REVIEW

2.1 Theoretical Review…….....8

2.1.1 The modified Solow Model……..8-9

2.2 Economic Growth Theory…….10

2.2.1 Classical Theory…….....10-12

2.2.2 Marxist and Neo-Classical Theory……12-13

2.2.3 The New Classical School…….13-14

2.2.4 Schumpeter Theory…….14

2.2.5 Keynesian Theory……...15

2.3 Conceptual Framework……....15-16

2.3.1 Current Trend on Capital Expenditure……..16

2.3.2 Current Trend on Re-current Expenditure…….17

2.3.3 Current Trend on the Real Sectors……17-21

2.4 Empirical Literature…….....22-24

2.5 The Concept of Economic Growth…….....24-25

2.6 Taxation and Economic Growth……..25-26

2.7 Fiscal Policy and Economic Growth……...26-28

2.8 Summary of the Literature……...28

CHAPTER THREE: DATA AND METHODOLOGY

3.1 Introduction to the Research Design…….29

3.2 Research Ideology…….....29

3.2.1 Research Design…….....30

3.3 Data Required…….....31

3.3.1 Method of Data Collection…….....31

3.3.2 Data…….....32

3.4 Model Specification…….....33

3.4.1 Model I……...33

3.4.2 Model II…….....34

3.5 Methodologies…….....…35

3.5.1 Autoregressive Distributed Lag Model (ARDL)…….....35-36

3.5.2 Augmented Dickey-Fuller Test …….....36-37

3.5.3 Unit Root Test……..…….37

3.5.4 ARDL Bound Co-Integration Test……..……37

3.5.5 Breusch-Pagan Godfrey Test……..……38

3.5.6 Breusch-Godfrey LM Test……..……39

3.5.7 CUSUM Test……...39

CHAPTER FOUR: EMPIRICAL RESULTS

4.1 Descriptive Trend……...40

4.2 Descriptive Table and Analysis …….……..41-42

4.2.1 Unit Root Test….……43

4.2.2 Short Run ARDL (AGDP)……..44

4.2.3 Long Run ARDL (AGDP) …….....45

4.2.4 Short Run ARDL (INGDP)…….…...46

4.3 Long Run ARDL (INGDP)…….....47

4.4 ARDL Bound Test for Co-integration (AGDP)……....48

4.4.1 ARDL Bound Test for Co-integration (INGDP)…….…….....49

4.4.2 Breusch-Pagan Test (AGDP)…….50

4.4.3 Breusch-Pagan Test (INGDP)…….…….....50

4.4.4 Breusch-Godfrey LM Test (AGDP)…….…..…...51

4.4.5 Breusch-Godfrey LM Test (INGDP)……..…51

4.5.4 Normality Test (AGDP & INGDP)…….……...52

4.5.5 CUSUM Test (AGDP & INGDP)……..…….....53

CHAPTER FIVE: SUMMARY, FINDINGS, POLICY IMPLICATION, CONCLUSION AND RECOMMENDATION

5.1 Summary of the Study……...54

5.2 Findings……....54-55

5.3 Policy Implication…….…....56

5.4 Conclusion ……..….56-57

5.5 Recommendation……...57

REFERENCES……..…..58-63

DATA……..……64

APPENDIX…….....65-76

PLAGIARISM REPORT……...77

ETHICS COMMITTEE APPROVAL…….....78

LIST OF TABLES

Table 4-2: Descriptive Analysis…….....41

Table 4-3: Unit Root Test ……..…….….43

Table 4-4: Short Run ARDL (AGDP)…….44

Table 4-5: Long Run ARDL (AGDP)……...…..45

Table 4-6: Short Run ARDL (INGDP)…….....46

Table 4-7: Long Run ARDL (INGDP)…….....47

Table 4-8: ARDL Bound Test for Co-integration (AGDP)…….....48

Table 4-9: ARDL Bound Test Co-integration (INGDP)…….....49

Table 4-10 & 4-11: Breusch-Pagan Test (AGDP & INGDP)……..……..50

Table 4-12 & 4-13: Breusch-Godfrey LM Test (AGDP & INGDP)….....51

LIST OF FIGUES

Figure 1: Distortionary Effect of Taxes…….……..10

Figure 1.2: Agricultural Sector Contribution to GDP…….…….……19

Figure 1.2.2: Industrial Sector Contribution to GDP……..…….19

Figure 1.3: Budgetary Deficiencies Surpluses full employment budget…..21

Figure 2&3: Normality Test…….……52

Figure 4 &5: CUSUM Test…….....53

ABBERVIATIONS

AGDP: Agricultural Contribution to GDP

ARDL: Autoregressive Distribution Lag

CEX: Capital Expenditure

CBN: Central Bank of Nigeria

CIT: Corporate Income Tax

Govt: Government

GDP: Gross Domestic Product

INGDP: Industrial Contribution to GDP

NDP: Net Value Added

NX: Net Exports

REX: Re-current Expenditure

RGDP: Real Gross Domestic Product

TAX: Tax Revenue

UNESCO: United Nation Educational, Scientific and Cultural Organization

VAT: ValueAddedTax

CHAPTER ONE

INTRODUCTION

1.1 Background of the Research

Government Fiscal policy measures includes the way and the method tax revenue and expenditure strategy variables are controlled among different organs of government at all level, to reveal its national objectives. It demands an organized and well-designed principle within the structure of a broad macroeconomic aim and goals. Real sectors in Nigeria are those economic transactions in the economy, eg, commerce, agriculture, industrial, building and construction, manufacturing, mining, services etc. The sum of production output from these sectors represents the Nigeria economy growth rate and can be used as a measurement to indicate economic growth.

Specifically and frequently, policies can be initiated efficiently to address the structural imbalance in the allocation of resources in the economy. This can be done through the efficient allocation of funds and other resources. (Alfred, 2009).

Basically it's the government's aim to increase the standard of living of the citizens via the reduction of the poverty rates, creation of basic social amenities and redistribution of income, in addition, wealth formation via the production of consumer product and services. (Freeborn, 1994).

Musgrave (1999) ''outline three basic cardinal objectives of government expenditure, which include, allocative, regulatory and stabilization''. Starting with the allocative function which exist in order to create a real balance in the provision of private and social goods mainly to highlight government intervention in the production activities.

The stabilization function talks about achieving full employment of labor and capital at stable prices, balance of payment equilibrium and growing at a satisfactory rate of productivity.

Regulatory function are generally intended to protect the public against negative effects of the free market. These listed traditional roles of public expenditure control the state and level of agricultural productivity and other general goods produced by the real sector. Recap that the real sector includes the agricultural sub-sector, manufacturing, construction, mining and quarrying. Precisely, a non-producing economy is basically a dependent economy on foreign goods and services. The disposition is for such countries to face balance of payments disequilibrium as they cannot equate import receipts with export earnings. Deliberate fundamental policy measures are taken by governments to assist production activities of the real sector through the use of instrumental variables like tax and expenditure to protect infant industries and already growing industries through tax holidays and soft loans, as demonstrated by the establishment of Nigerian Bank for commerce and industry and the Nigerian Agricultural and co-operate Bank (NACB) among other policy measures. ‘’Government policy aim here is to stimulate the production of food and other general goods and services in sufficient quantities and at affordable prices for the well-being of the citizenry’’ (Winny, 2009).

Nigeria’s agricultural sector accounts for over 23 percent of the country’s total GDP. When compared to other mineral rich countries on the continent (eg. South Africa and Ghana) agricultural continues to play a significant role in Nigeria. The current surge in agricultural GDP growth has been fueled mostly by increased production as a result of the extension of staple crop planting areas. This suggest that public agriculture efforts should be targeted at increasing productivity.

Developing a secure territory is a process of achieving the perfect amount and pattern of public spending. According to previous study, targeted public investment in agriculture can be extremely beneficial in improving agricultural productivity and reducing poverty. DFFRI’s research demonstrate the crucial role of government investment (including specific subsidies) in boosting agricultural growth and lowering poverty. It also demonstrate how the impact of various types of government spending on agricultural growth and poverty changes over time (Hazel, 2010).

With the depth and extent of poverty in the less developed countries (LDC’s) due to the relative inability of institutions to summon and direct savings, the government’s involvement in harnessing resources for development is critical. (Gbosi, 2008). ‘’Due to the fact the regulatory

body is weak and signals of the market are faulty, the nation must have significant role in distributing investment" because of the poverty that exist, fiscal policy is likely to play a key part in the anti-poverty scheme.

There is no doubt stating that governments in the developing countries are obstructed in their capacity to act the role of an activist. First, ''the country is a weak entity politically in developing economy than their counterpart in the advanced world. The result is because there isn't always a lot of agreement on issues concerning the tax and expenditure scheme'' (Paul, 2005). Secondly, the available resources at the disposal the government tends to be a merger since tax support are small and tax administration weak. Much tax revenue spring forth in efficient and increasingly outpaced revenue generated. With credit issues, bond markets and fiscal expenditure that are flexible in the negative supervision some of the financing results as spillover in the real sector.

According to Mike (2011) ''the immerse relationship between fiscal measure and the real sectors is an important topic of debate''. A basic cross-question is to ascertain if government fiscal policy measures plays a major role in the economy's growth pace. Dennis (1995) ''at the other end of the spectrum are of the view that expenditure on infrastructure and human-capital can aid economic growth, although financing of such expenditure can be hinder growth in short run''.

Emphasis deserves to be made on the fact that maintenance of stable aggregate macro economy remains the most important role of fiscal policy measures since it is accepted that macroeconomic instability is generally not conducive for growth. Within the set of fiscal policy measures that are consistent with the achievement of that primary target, choice should emphasize poverty reduction and growth of the economy (Fred, 2007).

1.2 Statement of the Problem

A significant concern about the Keynesian school of thought is that if government is a successful solution for remedy and had no incidental effects, for what reason do as such numerous individuals go against a strategy of budgetary extension? Initial, a huge public area reduces the business area both in work force and in wellsprings of speculation. It could be kept up with that in the midst of downturn, a large part of the work power isn't utilized in any way, and along these lines doesn't come to the detriment of the private sectors.

Moreover, in a vast developing economy, government expenditure can be reduced, the public authority area can return to a lower level of expenditure and work force can be diverted to the business area. Notwithstanding, while budgetary development is simple in a downturn, reductions during monetary downturn are extremely challenging. No pastor or head of public foundation at any point gives up control, authority and spending plan without any problem. The outcome is an expanded and wasteful public area even after the downturn is finished, and a lower rate of development in the private area than its latent capacity would indicate.

Vital is the efficiency of the private sectors, especially when compared with the government sector. A public association can proceed with its action regardless of whether the services it gives are no longer needed, it executives and the significant minister won't rush to give up power which is an element of the positions they control and the assets available to them. The outcome is pointless administrations, squandering work force and capital which would be diverted to creation that gives prosperity and advantage to individual in the economy.

Nigerian government expenditure on agriculture, in particular, is extremely low. Agriculture received 2% of overall federal investment from 2002 to 2006, considerably less than spending on other major sectors in Nigeria and its policy made emphasis on diversification away from oil, and far less than the 2004 maputo agreement. Even when the average between agriculture expenditure and national revenue is taken into consideration, Nigeria lags behind in agriculture by international standards.

The casual relationship between government fiscal policies and growth is particularly relevant for emerging nations (like Nigeria), as the majority of them have seen rising amounts of

government spending over time. Unlike in industrialized nations, there is little evidence that government fiscal policy initiatives are positively connected to economic growth.

Ideally this study recommends itself therefore as an experimental analysis of the investigation between the real sectors of the Nigerian economy and fiscal measures for the period under review.

1.3 Research Objective

This aim of this research is to evaluate the connection between fiscal policy strategies and the performance in the real sectors over the years. The specific objectives include:

(i) To determine the trend of government spending, taxation, industrial output, and agricultural production in Nigeria between 1981 and 2018;
(ii) Investigate the necessary impact of capital expenditure in Nigeria's real sectors.
(iii) Ascertain the effect of recurrent expenditure in the real sectors of the Nigeria economy.
(iv) To find out the extent taxation and government spending has impacted on the real sectors in Nigeria.

1.4 Research Questions

This study shall endeavour to answer the following research questions.

(i) What is the measures of government expenditure, taxation, in Nigeria's real sector between 1981 and 2018?
(ii) How efficiently did taxation and government spending positively impacted in the real sectors?
(iii) What extent did capital expenditure, recurrent expenditure and tax positively impacted on agricultural and industrial contributions towards the growth in Nigeria?

1.5 Research Hypothesis

(1) H_0: Government Expenditure and Taxation does not significantly impact on the real sectors in Nigeria.

(2) H_0: Government Capital and Recurrent Expenditure does not significantly impact on the real sectors in Nigeria.

(3) $H_{0:}$ Tax revenue does not significantly impact on the Agricultural and Industrial sectors in the Nigeria economy.

1.6 Scope of the Study

The pattern and effect of fiscal policy initiatives as well as its effect on the real sectors performance will be analyzed with data covering the set period from 1981 to 2018. The main focus will be via the comprehensive and productive government spending during the period under review.

1.7 Significance of the Study

Even while we acknowledge that this research isn't the first of its kind using Nigeria data, this study went a little ahead than previous research to accurately get the data of fiscal operations during the years of review to actually check the necessary impact on the real sectors performance.

In addition, this research will assist policy makers to advertise productivity without resorting to massive deficit finance.

1.8 Research Rationale

The goal of the research is to quantify and ascertain the influence of fiscal policy measures on the real sectors in Nigeria and how the agricultural, and the industrial sectors contributes to the GDP in Nigeria. Furthermore, the study will help to identify the fiscal policy measures that lead to the growth of the real sectors in the country such as government expenditure (capital expenditure, recurrent expenditure and Taxation). There has been an increase in real sectors contribution to the GDP in the country Nigeria, and this research it will further help to evaluate the impact of the agricultural and industrial sectors to the GDP of the country. This study will assist in developing policies in the country that would play a vital role in the reduction the Tax revenue rate in Nigeria. This research will create a room for further study through adequate and proper statistics that will be gotten from economic magazines and official websites. Equally, the study will cover the duration from 1981 to 2018. Also this research will provide guidelines to policymakers to efficiently make use of the revenue available to promote rapid economic growth in the real sectors in Nigeria

1.9 Structure to the Research

This study is divided into five chapters. The Chapter one talks about the research background, Research problem is stated, Objectives of the Research. Research questions, Hypothesis of the research, scope of the study and significance relating to the research, Research rationale and Structure of the research. Chapter two reviews on previous researchers and previous literatures. Chapter three delivers the Methodologies for carrying out the research, data collection, design of the research, method of the research, the research instruments used, and data analysis. Chapter four gives an explanation on the outcome of the research based on the collected data and according to the results the researcher concluded. Chapter five present the summary, recommendations and conclusion.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 The Modified Solow's Model by Skinner

Skinner (2000) indicated several ways fiscal policy strategies can influence rapid economic growth by means of the Solow model. It begins with the Solow generalized model which is economically expressed in an equation to relate growth expression.

$$\dot{y} = \alpha\dot{k} + \beta\dot{l} + \mu \qquad 2.1$$

Based on the expression indicated, α signifies marginal level productivity of capital, β indicate the marginal level productivity of labor and μ indicate growth in overall percentage level.

Firstly, taxes from the above equation can affect the capital stock level of growth, $\dot{k}$. Income taxes, high corporate taxes or capital gains taxes could all discourage investment and lower the level of capital stock growth rate. Also, low level allowances and tax can cause a shock to the level at which investment grows and cause a change in the equation via its variable.

Predominantly, taxes have an impact on output level via a productive labor force. High level of income taxes will also discourage people from working to their full potential, urging them to reduce their working duration in a day or early retirement. Also, when we consider l as the growth in the effective labor force, then tax rate will have an effect on people's choice to achieve educational achievement.

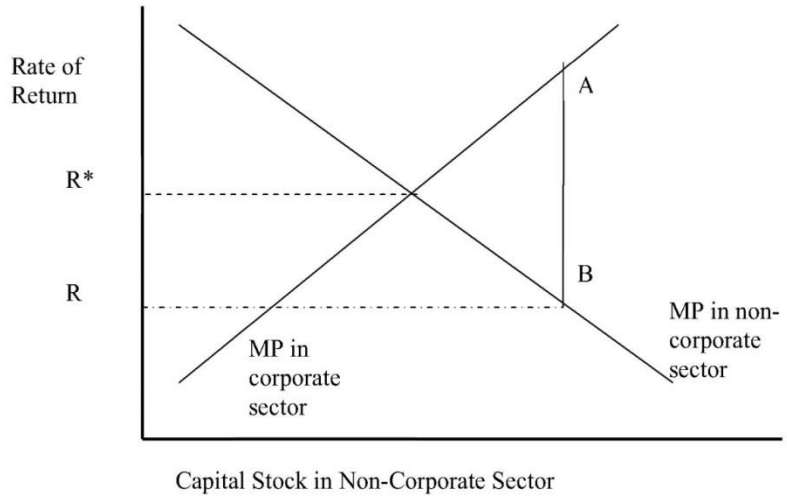
In addition, Skinner pointed out that tax revenue is likely to have a negative relationship on technological growth and productivity μ. Corporate tax will discourage research examination in highly-technological business environment which may have an influence on the economy in the technology of the nation. Speculated government expenditure in the area of public research in development might increase μ. Taxes disrupt the efficient allocation of inputs of production

across sectors in the last two ways that tax policy might impact output growth. Engen and Skinner utilize the hypothetical situation of a corporate and non-business sector as an illustration. Capital will be diffused between the two sectors in the absence of taxes with the aim their marginal return on capital are the same.

This correlate to a rate of return R* in figure 1 below. Alternatively, when the business sector is taxed to the specified amount AB, the corporate sector's after-tax marginal level of productivity to capital declines. When the rates of return on capital in the two sectors are equalized, the non-taxed sector receives a larger proportion of capital than in the case of tax-free areas.

We noticed that in this circumstance, the rate of return to capital is R, which is approximately less than R*. Returns have been skewed by the taxes, resulting in inefficient factor goods distribution. Within the labor market, distortionary effects arise in a similar way. Therefore policy on tax will have an impact on the coefficient of α and β in the basic Solow equation.

Figure 1: The Distortionary Effects of Taxes



Source: Central Bank of Nigeria Statistical Bulletin

2.2 Economic Growth Theories

2.2.1 Classical theory

In accordance to the research Dennis (2015), the classical theory the nation's growth level would slow as the population increases and resources become scarce. As a result, it implies that the country's economic development will begin to decrease as the population grows. Based on the assumption, the research conducted by Oscar (2016) explore the influence of fiscal component towards the economic growth in the real sectors. The research points out the classical theory illustrate the necessity that contributes to economic advancement. The dataset collected from 1981 till 2018 contains the variables used. The regression evaluation has been performed where the results stated that the variables were significant with the economic growth rate in Nigeria.

We distinguish linking four economists who shared their thought about economic growth through this school.

- Adam Smith (1937): Stated that the economic balance in any economy occurred automatically, the notion of government non-intervention in the economy. The assumptions on which the classic is founded, as its involvement has a negative impact on the economy and instead relies on market forces (supply and demand) and the so-called invisible hand. The entire income is made up of either riches, quarters, or interest, all of which are produced utilizing the most fundamental factors of production, which include capital, labor and land.

- Ricardo (1821) divided the society into three classes: Capitalists are the primary drivers of investment through upgrading manufacturing processes and pouring funds into new projects with the goal of boosting investment development. Workers; their purpose is to meet production and labor needs in order to effectively manage projects on investment. Feudalists: basically landowners, who are the foremost engine in agricultural investments, and just as society is divided into three classes, it divides incomes into three classes

  Profit, which is seen as one of the most significant sources of revenue for capitalists and is re-injected into the manufacturing process in order to generate more profits, is decreasing. The more the reform of non-fertile areas with the goal of utilizing them, the higher its worth

  The wage or salary. The natural wage rate, which reflects the actual income in the long-run, is divided into two parts by Ricardo: the natural wage and the market wage, is decided by the market-forces (supply and demand).

  Rent, Ricardo considered that it came as a result of monopoly, in the case of real world competition, it doesn't appear that the individuals who controlled the most fertile lands got a quarter greater than those who controlled less fertile lands.

- Robert Malthus (1872): In his famous analysis he advocated on the theory of population, which goes further to explain the rise in the level of population growth in accordance to a geometric real sequence, while the rise in food is in accordance to an arithmetic real order, and it makes population growth greater, which in turn negatively affect the income that is at a subsistence level. Given that the growth rate of population has a reversed connection with economic growth level, and it addresses effective demand in determining the level of production, but Malthus's point of view was relatively negative and did not prove correctly a standard point in the developed nations because of high level of geometric real sequence in comparison to growth ratio.

- Karl Marx (1981): His principle was based on an theoretical prevailing analysis of social system, which was classified as the capitalist economic system, he considered the society divided into two classes, capitalists and workers, so that the former owns the means of production and capital while workers own the labor, and the aim of capitalists is to maximize its profit and reduce to the barest minimum its costs by depending on different mechanization in the process of production. Equally it took into account the return of technological development had a relatively negative impact on unemployment rate, as the number of unemployed sporadically increased in the economy.

2.2.2 Marxist and Neo-classical Theory

There is little difference between Marxist philosophy and the classic subsistence wage theory, in which the rate of wages are set by the quantity of effort required to create the means of sustenance, allowing the worker to get just his requirements. In Marxist theory, labor is split into two categories: required work and extra work, and as a result, labor is divided into two categories: required labor considered as wages and extra work, which is free of charge. Since the little difference between them is the value added the capitalist receives in exchange for ownership of the means of production.

Walras and Marshal were the founders of neoclassical theory, and their views in developing the theory was similar to those of classical theory since they relied on J.B.Say's rule, which asserts that supply produces demand and that excess production is impossible. Since a result of its theories on microeconomics, especially market analysis, the theory offered a foundation for complete balance in the labor market, and both demand and supply for labor are set within the limitations of pay rates, as they believed the economy is always in a state of equilibrium. This means that if unemployment is discovered, it is optional because workers are not exposed to the monetary deception phenomenon, because the nominal heat rate has no effect on the attitude of job provider, if the overall level of prices changes at the same rate and in the same direction, and because the purchasing power of the new income remains constant.

The production function states $Y = f(L, k)$, where L: labor component, K: capital and since the period is short-term the capital component of K is constant

2.2.3 The new classical school

The Neo-classical theory is one of the main key principles concerning the ideas on economic growth. The supply and demand, which are the driving factors behind production, consumption, and price, are emphasized in Neo-classical ideas. The Neoclassical economist believes that the primary interest of the customer is to maximize personal satisfaction. Furthermore, the theory states that the product's worth is determined by the cost of materials, which includes labor costs. In general, the economists point out that the consumer's assessment of the product's worth has an impact on the demand and the price level. (Enapat, 2009).

The research done by Sutradhar (2020). The Neo-classical economic theory was further examined by focusing the research by assessing the impact or value in terms of growth in India, Pakistan, Bangladesh and Sri Lanka. The Neo-classical theory says the transfers of labor from lower-wage nations to higher-pay countries mostly owing to wage disparities, which is the basis

for relating theory to the issue. The study used the Pooled OLS method to collect secondary data from 1977 to 2016 from the selected nations. Remittances records a large and negative relationship on economic growth, according to the regression.

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- **Marshall and J. Clark considered** the market mechanism, they believed the growth percentage could not pass through stagnation, contrary to what Smith stated, which stated that economic growth is dependent according to the resources that is available in a nation in terms of labor, land, capital, organization, and technology. Supply and demand, in which producers seek to maximize profits and consumers seek maximum happiness within the constraints of the market's capabilities, as determined by the economic and social frameworks that define its applicability in developing nations.

2.2.4 Schumpeter theory

Joseph Schumpeter (1982): **He** was inspired by capitalists and Maltz's population theory, believing in his prescribed publication "The Theory of Economic Development" that economic growth should be driven by competition and full employment in the economy if there is no net investment or population expansion, rather than static analysis. He also attempted to familiarize with the following elements of theory: statistics, economics, history, and sociology, and as a result, he became a critic of both the classic and Keynesians. Regulatory and technological issues had a significant influence in the development process, according to Schumpeter. According to Schumpeter's thesis, the entire growth process is built on systematic innovation and bank credit

2.2.5 Keynesian Theory

The Keynesian theory came after the Great Depression (1929), Keynes developed the Keynesian theory to explain the truth that developed nations emerged due to the crisis, from his perspective, developed the theory of employment, which explains that the level of income is dependent on employment, which leads to an increase in economic growth rates. Keynes thought that planned investment does not equal saving, that variable income balances them, and that unemployment is a concern, but that in the long term, economic cycles are caused by variations in capital's marginal efficiency. And, in a closed economy, he assumes that investment and saving are equal. In the model, economic growth is directly connected to saving and indirectly to the output-to-capital ratio, provided that the factors of production are not substituted. He further believed that the government should interfere in the economy for the goal of achieving a desired result, since it increases employment rates, in contrast to the traditional view that full employment exist.

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Keynes ideas confused on:

- Creating effective remedy that doesn't fit into the classical school of thought of fresh investment and new ideas that will greatly help to boost effective aggregate demand.
- Keynes' opinion on the need for the state to intervene and to raise the level of total demand effectively well to ensure full-employment and efficient production.

2.3 Conceptual Framework

Freeborn (2014) fiscal policy is defined as the use of government spending and revenue collected via tax revenue, to influence the economy. Fiscal policy can be seen as the method through which the government controls the expenditures in order to keep track of and influence the economy (Everest, 2016). It can be used in conjunction with monetary policy, which is employed via means of the apex bank to control the money supply flow in the state. Specifically, fiscal

policy is a significant economic stabilization tool that entails measures to regulate and manage the amount, cost, and availability of money in an economy, in addition to the direction of money in the Nigerian economy, in order to accomplish a certain macroeconomic policy goal. (Freeborn 2014)

Government tax revenue and spending are the two main instruments of fiscal policy. And government expenditure can be grouped into Capital expenditure and Re-current expenditure. It therefore explains fiscal component involves the use of government's budget to affect economic activities**.**

2.3.1 Current Trend on Capital Expenditure

Capital expenditure talks about the cost of acquiring productive (fixed) assets together with the cost of upgrading and improving existing fixed assets such as lands, buildings, roads, machinery and equipment, and so on, including intangible assets. Expenditure on research is also included in this category of government spending. Because there may be some delays between when capital expenditure is made and when it has an impact on the economy, capital expenditure is primarily viewed as an investment that generates future rewards. (Saint, 2017). The creation of jobs is one way capital spending affects economic growth. The economy's multi-hydra issue of unemployment is reduced to the bare minimum. The re-allocation of resources to all sectors of the economy is another way it promotes economic growth**.**

2.3.2 Current Trend on Recurrent Expenditure

Recurrent expenditure means the purchase of products, services, operation, wages and salaries, as well as subsidies and grants, (classified usually as transfer payments). Government final consumption spending, excluding transfer payments, is often known as recurrent expenditure. Recurrent expenditures include administration, internal security expenditures, pay and compensation of public personnel are among the expenses incurred on a daily, weekly, monthly, or even yearly basis. (Kennedy 2014)

Recurrent expenditures related to operations and maintenance costs associated with public investment project are required in order to keep the project running at a level commensurate with its intended usage and to maintain the investment's capacity over its projected lifetime. For example, in the case of a new school servicing a larger student population, recurring expenses would include teacher wages as well as extra textbooks and instructional materials needed to run the new facility. They would also cover the costs of power, heating, and other operating expenses, as well as the expenditures of routine and periodic maintenance. Importantly, recurring expenses should represent the facility's full capacity utilization, that is, the recurring expenses predicted when the investment is utilized as intended (Akpan, & Abang, 2013).

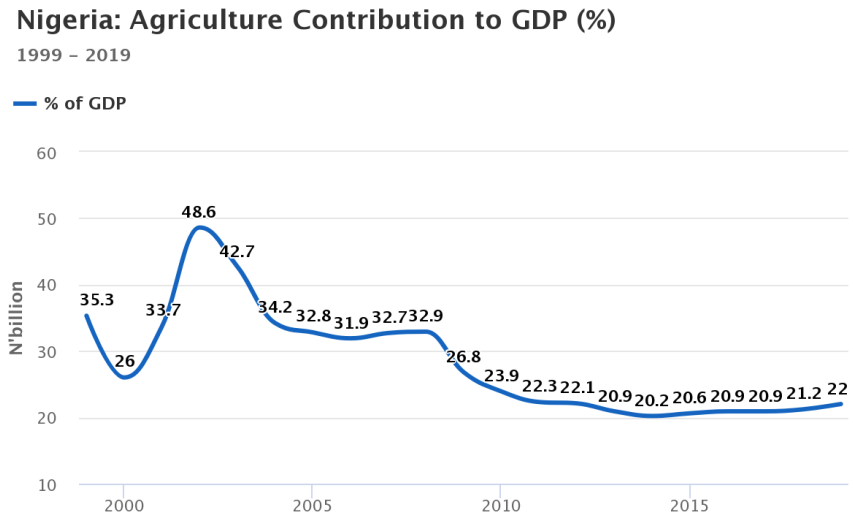
2.3.3 Current Trend on the Real Sectors

The real sectors is the integral component of the economy because scheme in the real sectors contribute to economic productivity. The real sectors are crucial towards economic development owing to its productive capacity to fulfill the economy's aggregate demand. The Central Bank of Nigeria categorize the Nigerian real sector into agriculture, industrial, building and construction, wholesale and retail commerce, and services. The total output of these sectors indicates the proportion of growth in the Nigerian economy and may be used to assess economic growth

Individuals and corporate organizations engaged in activities aimed at creating products and services to meet public demand make up the real sector, which is a component of the economy. According to Ruth (2010), the real sector is where products and services are produced using a combination of raw materials and means of production, and it is the economy's driving power. The degree of productivity in the economy is determined by the production of the real sector. The economy grows as the real sector's output capacity expands. To guarantee that the real sector may achieve its full potential, a well-functioning financial sector is required (Sanusi, 2012). The real sector's performance is used to compare countries' progress.

Furthermore, on the real sectors attention will be channeled on the role of the agricultural and industrial sector growth pertaining the growth of the nation. In Nigeria, in the year 1982 to 1991 the agricultural contribution to GDP increased to 32.3%, while in 1992 to 2000 its contribution was 34.2% and 40.3% as at 2001 to 2009. Actually in the year 2008, economic related activities in Nigeria was influenced by the agricultural sector, which give record for 42.1% of GDP, followed by industry (22%), wholesale and retail trade (17.3%), services (16.8%), Building and construction (1.8%). The share of Agriculture in Nigeria to GDP increased by 11.6% during the last twenty five years, that is, from 30.5% in 1984 to 42.1% in 2008. Within the same interval, the share of industrial contribution to GDP rate declined from 42.4% rate to 22% rate given a loss of 20.4%.

Figure 1.2 Agricultural sector contribution to GDP (%)



Source: Central Bank of Nigeria Statistical Bulletin

Figure 1.2.1 Industrial Sector contribution to GDP

Source: Central Bank of Nigeria Statistical Bulletin

According to Fred (2007), ‘modern day fiscal policy explains basic directions which employs the nation's financial resources, ways of appropriate funding, and major sources of treasury updates' Such policy (politics) has its own quality depending on the physical - historical situation in various nations. In industrialized countries, too, common measurements are used. It encompasses both direct and indirect financial techniques of economic control. .

Taxation plays another vital role. The country wants to achieve a fixed pace of economic development and avoid sudden spikes and falls in manufacturing by changing the rates of taxes on different levels of earnings, granting tax advantages, decreasing the free minimum of incomes, and so on. The policy (politics) of accelerated amortization is one of the most significant indirect techniques for aiding capital accumulation. In essence, the government exempts businesses from paying taxes on a portion of their profits, which is then artificially redistributed into an advanced reserve. (Salim, 2016).

Fiscal policy equally can “successfully have an effect on the steady rate of growth in the nation through promoting the absolute expansion of human capital stock, investing in infrastructure projects (health, educational sector), and strengthening the legal operational framework of the economy Government expenditure is seen as beneficial. ” (Solomon, 2015).

The stimulus or restraint fiscal policy is used depending on the goal. During periods of low output, it is required to raise government spending, lower taxes, or do both in order to fund stimulating policies. It prepares a way for the short run business cycle. It help to smooth out the business cycle in the short run. Reduced taxes in the long run ushers in economic growth. So it was in the 1980s in industrialized countries, where tax changes resulted in reduced corporate profit tax rates, which boosted the growth rate in the economy.

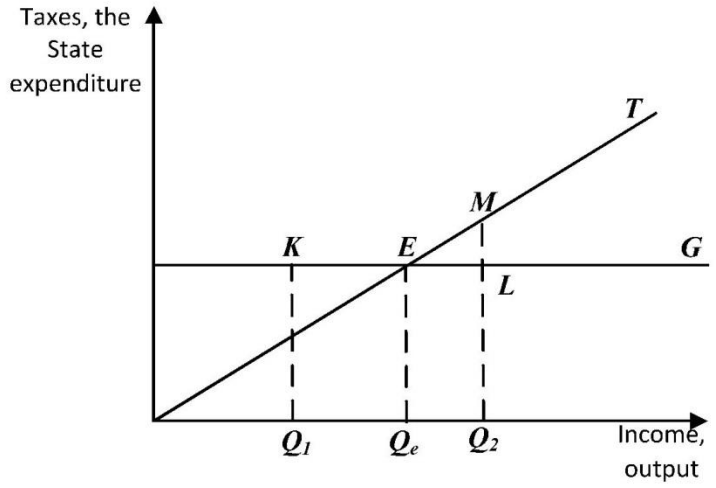
It is vital to estimate the results of the government's fiscal policy in order to determine if it is proper. Most commonly, a situation of the state budget is used in these objectives as fulfillment of the fiscal component is followed via budgetary expansion or contraction. By, judging the success of a spent discretionary policy on these metrics is challenging enough.

Considering budgetary deficiencies and surpluses, Figure 1.3 below will be used for explanation. Let’s consider the budget been balanced at area E at volume of release Qe. Definite volume of output at Q1, and the potential is at full employment Q2. The budgetary deficiency KL exists at

the actual level of output Q1 which gives a record that stimulate fiscal component and is accompanied by the growth of budgetary deficiency.

Moreover, no exciting steps are implemented in reality. It demonstrates at the given full employment, both the real State spending and tax lines are the same at G and T. The full employment budget has surplus at M. Therefore, the purpose of the deficiency was due to the fall in production. The fiscal instrument, on the contrary, quantity of output in the nation is below potential. There is important for the acceptance of suitable fiscal measures, i.e. for prompt cumulative demand.

Figure 1.3: Budgetary deficiencies, surpluses the full employment budget



Source: Central Bank of Nigeria Statistical Bulletin

2.4 Empirical Literature

Government spending are those costs incurred by the government for the sake of the society and the economy at large. Government spending reflects government's policy choices. Government expenditure represents the cost of implementing policies once governments have agreed on the type of services to deliver or amount of goods. The existence of an externality or market failure is the underlying argument underpinning the necessity for government spending. There isn’t any actual motive to believe that further public sector investments will be more productive than private sector investments in the absence of externalities or market failures.

Government expenditure on essential amenities has a significant impact on the living standards and life chances. The goal of public service spending is to offer individuals the chance to realize their full potential (through education, training and job), also a competitive economy and a more inclusive and fair society As a result, the government's public expenditure objectives include both efficiency and equity.

It's been said that efficiency improvements shouldn't come at the expense of equity. On the other side, inefficiency in the delivery of public services implies that opportunities for greater equity are squandered owing to resource waste. This effect might be magnified if public service supply and financing force the private sector out, resulting in weaker economic growth. As a result of reduced economic development, there are less resources available to fund social projects. Furthermore, it must be recognized that providing and funding public services is not just concerned with income redistribution in favor of society's most socioeconomically disadvantaged groups. Social justice includes issues such as equality of opportunity, personal responsibility for self-improvement, and acknowledgement of success and effort, in addition to distribution. Instead of being socially enlightened, governments are rent-seeking, self-serving distributional coalitions favoring those with the most effective political power, according to the leviathan state model of governance. In this scenario, regulatory progress and equity do not have to be mutually exclusive (Berte 2009).

Indeed, the exact definition of what constitutes public spending is up for debate, and it has changed numerous times. Such changes are generally justified on technical grounds, and they have frequently attempted to separate elements of government spending over which the government has little or no control from those over which it does or might reasonably be

expected to manage. However, such modifications may be politically opportune in order for the central government to claim triumph in reducing (managing) government spending. Privatization revenues, for example, were regarded as a source of public money rather than a source of negative public expenditure in the 1980s in the United Kingdom, when the central government was committed to reducing government spending. (Fred 2007).

Exhaustive expenditures and transfer spending are two major types of public activities that might be applied to government expenditures. The government's acquisition of both current and capital goods and services is referred to as public expenditures. As a result of the outcome, these expenditures indicate government purchases of inputs, which are calculated by multiplying the volume of inputs by the input costs. Overspending by the government is seen as a demand on the economy's resources. The use of these resources by the government precludes their use by other sectors. The potential cost of these government expenditures is the productivity lost by other sectors because the public sector consumes resources. Many of the techniques used to analyze public sector efficiency are based on these sorts of opportunity cost arguments, which support the arguments of those who oppose a larger public sector.

These principles are at the heart of the crowding-out discussion. A rise in government expenditure does not always indicate an increase in public production, nor does it always imply a reduction in efficiency, making it difficult to calculate efficiency using national income figures. (Black 1998). In reality, transfers are a redistribution of resources among people in society, with the resources passing via the government sector as a middleman.

On the other hand, the economic sub-divisions of exhaustive and transfer expenditures are not explicitly included in public expenditure statistics series because, while valuable for research, they are of minimal utility for accounting or planning. The reported public spending figures are the sum of many accounting components. This necessitates government spending for empirical broad analysis.

The accounting components of government spending include both current and capital expenditures. Wages and salaries are all covered, as are products and services, rent, and other current costs. These are frequently seen as consumable goods, whose advantages are used up or exhausted at the end of each fiscal year. Furthermore, capital expenditures involves expenses on assets that are fixed which include buildings, land, plant and machinery, the advantages of which are more long-term, lasting many years to decades. Exhaustive and transfer expenses are included in both components. For instance, payments made on social security are grouped as current expenditure, while the payments of debt on interest are used to fund expenditures on capital (Oscar 2005). Different policymakers and economists think that a large share of development investment in overall government spending indicates a growth-friendly economic approach However, because there is no widely acknowledged standard for classifying spending as current or capital, what one country considers current may be labeled as emerging in another. Basically, due to the fact that developmental spending, international grants and concessional loans are more accessible compared to current expenditure, nations are enticed to make developmental expenditure appear greater than it is in fact by reclassifying certain current expenditure as developmental.

2.5 The concept of Economic Growth

Economic growth is generally referred to as increased production or real income in a nation within a given period of time and it reflects economic growth quantitative changes in production capacity and to the level to which energy is maximized. The higher the percentage rate of available production capacity utilization in all the economic sectors, the higher the national level of income growth rates, and vice versa.

Economist Kuznets Simon defined it as a quantitative fact and consequently economic growth can be explained as the continuous increase of the population rate, as well as the individual product. According to the previous explanation, the growth rate in the gross domestic product (GDP) can be described as the increase in the per capita division during a certain period of time.

Economic Growth is therefore calculated based on the three methods below:

1. Income method:

National Income = ***Rent*** + ***Interest*** + ***Profit*** + ***Wages*** + ***Mixed-Income***

2. Expenditure method:

National Income = ***C*** + ***I*** + ***G*** + ***NX***

Where,

C: Consumption

G: Government expenditure

I: Investments

NX: Net Exports (Exports - Imports)

3. Value-added method:

National Income = ***(NDP$_{FC}$)*** + ***Net factor income from abroad***

Where NDP$_{FC}$*:* net value added at factor cost

2.6 Taxation and Economic Growth

According to Freeborn (2011) Personal income tax is found to be adversely linked with growth, whereas corporate income tax is found to be unrelated to growth. It was assumed that the structure of tax remained identical in the sample duration and that all nations in the research had the same tax revenue pattern. These assumptions are critical since it used the average income tax rate to calculate personal income tax. Equally, Oscar (2005) said the overall fiscal spending, tax average rates leads to numerous biases, which therefore brings to the conclusion that taxes has no

influence on the level of growth. Lee and Gift (2008) challenged these claims, claiming that projected tax rates are skewed due to the problem of tax evasion that many nations confront. As a result, they used the highest income tax rate which is statutory calculated. They argued that the top corporate income tax (CIT) and statutory tax rates had the most impact on economic development. Employing a sample-size of 50 developed and developing states from 1980- 1990 Lee and Gift (2008) also highlighted bordering countries' tax rate compared to the inverse distance among the countries as an instrumental variable for the home country's tax rate, in order to account for the endogeneity problem associated with the tax rates. According to their theory, the tax rate of surrounding nations was not impacted by the home country's growth rate, although it was significantly associated with the home country's tax rate; controlling for the tax rate of nearby countries was a suitable tool. By controlling the endogeneity of tax measures, they discovered the CIT (Corporate Income Tax) rate had a substantial negative influence on economic growth in all of their regressions.

2.7 Fiscal Policy and Economic Growth

Ruth (2015) suggest that economic growth can be classified as the increase economically in a country, measured in Gross domestic product (GDP) percentage increase. Nevertheless, Ruth indicate between two types of growth: an extensively growth which is generally attained by the use additional resources; for example physical, human, or natural capital; and intensive growth that is usually obtained by an effective and productive use of the available resources. When economic development happens as a consequence of widespread labor use, for example, per capita income does not rise. However, when the resources, including labor, are utilized intensely and productively, economic expansion will typically in return lead to an increased income per capita and an improvement in people's standard of life.

As a result, fiscal policy may be viewed as the main economic strategies that can impact the efficient allocation of resources in an economy in order to attain the targeted level of economic

growth. Component of Fiscal measures may also be used to impact economic growth in general, according to several theoretical and empirical research. Taxation can help to decrease wasteful spending while also encouraging investment and productivity. Economic development can also be boosted by prudent governmental spending on infrastructure, investment, and capital accumulation.

According to (Pat 2017), it was an accepted fact that the government has to take full authority for speeding up economic growth. He further said, “Economic growth theory and development are linked with master plans to promote them.

These tactics "have consequences for public stability of finance in existing fiscal policies, as well as the appropriateness of available fiscal instruments," according to previous study. (Pat 2017) generally said, deployment of allocation efficiently can raise the level of output and effective capacity of the economy is necessary to put in use fiscal policy to accelerate the pace of growth. This may be accomplished by achieving full employment, with real production allocated to consumption dropping and investment increasing. The examination of fiscal component factors on growth, on the other hand, is a controversial topic. For instance, Monetarists claim "Inflation and unemployment have a short-run trade-off that appears to vanish in the long run; inflation and balance-of-payment deficits are essentially monetary phenomena," while Keynesians claim both monetary and fiscal policies have a long-term and considerable influence on employment and production; in order to develop a restricting fiscal policy, the pace of monetary expansion must be decreased; otherwise, the rate of inflation cannot be reduced. .

(Datty 2017) stated that many research was made to evaluate the influence of fiscal policy on output growth using endogenous growth models, according to the statement. Other nations have discovered a favorable link between infrastructure spending and economic development.

Also, the interaction between government spending and economic development, has long been a point of contention. While the Keynesian theory indicates that the relationship flows via government spending to economic growth, (Wagner's law 1890) offered an alternative approach path.

According to Wagnerians, when a country develops economically, government spending tends to grow in proportion to national revenue. We have three points to defend such fact:

• Economic growth occur in increasing the spending and social services.

• Public activity is replaced by private function.

• Government intervention may likely be needed to control and adequately finance natural monopolies.

Specifically, according to the level of taxation, some empirical development indicate that tax revenue may have a great impact on the growth level.

2.8 Summary of Literature

This chapter pointed out the different concept, theories, concept, fiscal policy measures regarding the real sectors contributions and empirical evidence from previous scholars.

Furthermore, the literature reviewed shows that most previous research are of the sole opinion that government expenditure is financed majorly by taxes. Though it is widely accepted that government spending has the potential of spurring growth, the means of financing government may not be favorable mostly when corporate income tax (CIT) is always on the rise. It was also discovered that most of the research reviewed focused on the macro economy with little attention paid on mainly the sectorial performance. Hence this research shall bridge the gap by examining how the real sectors of agriculture and industry have responded to the fiscal policies implemented by the government of Nigeria over the years.

CHAPTER THREE

METHOD OF STUDY

3.1 Introduction to the Research Design

This study employs the use of historical and quasi-experimental research design. While the former was used to determine the effect of agricultural growth, industrial growth and the government fiscal policy in respect to taxation and expenditure (capital and recurrent); the latter was used to investigate the government fiscal policy component of taxation and expenditure in the real sectors (industrial contribution and agricultural contribution) in Nigeria

3.2 Research Ideology

The ideology of this research refers to the researcher's point of view on how data are gathered, interpreted, and analyzed. The research involves various forms of ideology, including interpretivism, positivism, realism, and pragmatism. (Ryan, 2017). Due to the situation of this research, the ideology of this research that is appropriate is positivism. From existing research from McKenna and Corry, porter (2019), the positivism ideology involves the truthful information which generally means the measurement of the data that restricts the researcher’s involvement in the form of collecting dataset and the general interpretation. Furthermore, the positivism ideology is solely dependent on the analysis statistically on opinion omitted and human insight. Therefore, the measures are performed in the research to ascertain if there is a connection between fiscal policy component and contribution of the real sectors to the GDP in Nigeria.

3.2.1 Research Design

Certainly, we have mainly three methods or strategies related to research design which are quantitative, qualitative and mixed research design. Decision of the applicable research design is based on the topic of the research.
Qualitative research design, talks about the subjective perspective of the research and involves the progress of the answers to the reasons concerning the importance of the question. The findings based on the qualitative research are basically with a written format instead of numerical format. The common tool used in the quantitative analysis is directly by case research study, focus group, interviews, keeping of records and observations.

Quantitative research, is generalized on the objective area of the study where the viewpoint is mostly suitable with the positivism research ideology. The system used for data gathering in the quantitative research is via the primary and secondary method. Furthermore the primary method is done via questionnaire and survey, then the secondary method requires data gathering through annual reports, statistical bulletin.

The mixed research technique combines quantitative and qualitative research methods. Based on the information provided above for both techniques, the study's research is classified as quantitative research design, which is used to quantify the problem by providing numerical data that can be converted into useful statistics.

The primary goal of using a quantitative research methodology is to appraise the influence of fiscal policy measures in Nigeria's real sectors. There are several studies that similarly to my research topic but are emphasized on different countries.

3.3 Data Required

The data used for this study will be quarterly data on industrial contribution to GDP, agricultural contribution to GDP, TAX (Company income tax, customs and excise taxes, and value added tax are all sources of revenue), capital expenditure and recurrent expenditure for the period 1981Q1 to 2018 Q4.

3.3.1 Method of Data Collection

The quarterly data 1981 Q1 to 2018 Q4 was gathered and used in this study (qualitative data). It was sourced basically from the publication of the CBN (Central bank of Nigeria) publications namely statistical bulletin, annual reports, researchers' computations etc.

Table 1: Data

Year	CEX(Billion)	REX(Billion)	TAX(Billion)	AGDP(Billion)	INGDP(Billion)
1981	6.57	4.85	4.7	17.05	54.13
1982	6.42	5.51	3.6	20.13	51.38
1983	4.89	4.75	3.3	23.80	52.45
1984	4.10	5.83	3	30.37	48.59
1985	5.46	7.58	4.1	34.24	60.90
1986	8.53	7.70	4.5	35.70	62.63
1987	6.37	15.65	6.4	50.29	78.35
1988	8.34	19.41	7.8	73.76	100.83
1989	15.03	25.99	14.7	88.26	144.69
1990	24.05	36.22	26.2	106.63	172.72
1991	28.34	38.24	18.3	123.24	215.11
1992	39.76	53.03	26.4	184.12	336.94
1993	54.50	136.73	30.7	295.32	409.59
1994	70.92	89.97	41.7	445.27	541.45
1995	121.14	127.63	135.4	790.14	931.10
1996	212.93	124.63	114.8	1,070.51	1,232.15
1997	269.65	158.56	166	1,211.46	1,261.36
1998	309.02	178.10	139.3	1,341.04	1,168.07
1999	498.03	449.66	224.8	1,426.97	1,440.31
2000	239.45	461.60	314.5	1,508.41	2,239.63
2001	438.70	579.30	903.5	2,015.42	2,182.62
2002	321.38	696.80	501	4,251.52	2,432.60
2003	241.69	984.30	500.8	4,585.93	3,211.19
2004	351.25	1,110.64	565.7	4,935.26	4,391.70
2005	519.47	1,321.23	785.1	6,032.33	5,591.36
2006	552.39	1,390.10	677.5	7,513.30	6,843.07
2007	759.28	1,589.27	1,200.80	8,551.98	7,679.74
2008	960.89	2,117.36	1,336.00	10,100.33	9,216.17
2009	1,152.80	2,127.97	1,652.70	11,625.44	9,008.26
2010	883.87	3,109.40	1,907.60	13,048.89	13,826.42
2011	918.55	3,314	2,237.90	14,037.83	17,853.11
2012	874.70	3,325	2,628.80	15,816.00	19,587.72
2013	1,108.39	3,214.90	2,950.60	16,816.55	20,853.85
2014	783.12	3,426.94	3,275.03	18,018.61	22,213.01
2015	818.35	3,831.95	3,082.41	19,636.97	19,188.58
2016	653.61	4,160.11	2,922.50	21,523.51	18,641.17
2017	1,242.30	4,779.99	3,335.20	23,952.55	25,639.90
2018	1,682.10	5,675.20	4,006.00	27,371.30	32,218.33

Source: *The central bank of Nigeria statistical bulletin 2018*

3.4 Model Specification

3.4.1 Model 1: Agricultural output model

The functional relationship for the agricultural model is specified as follows.

$$AGDP = F(CEX, REX, TAX) \quad 3.1$$

Mathematically, the functional relationship is stated below

$$AGDP = \alpha_0 + \alpha_1 CEX + \alpha_2 REX + \alpha_3 TAX + u_t \quad 3.2$$

Where

AGDP= Agricultural sector contribution to AGDP/GDP

CEX= Capital Expenditure

REX= Recurrent Expenditure

TAX= Tax Revenue

α_0_ Constant or intercept

α_1 and α_2_ parameters

u_t_ disturbance term

A priori expectation: $\alpha_1 < 0$ and $\alpha_2 > 0$

3.4.2 Model 11: Industrial output model

The functional relationship for industrial output model is specified as follows.

INGDP= F(CEX, REX, TAX) 3.3

Mathematically, the function relationship is stated below.

$INGDP=\beta_0 + \beta_1 CEX + \beta_2 REX + \beta_3 TAX + u_t$ 3.4

Where

INGDP= Industrial Sector contribution to INGDP/GDP

CEX= Capital Expenditure

REX= Recurrent Expenditure

TAX= Tax Revenue

β_0 = constant or intercept

β_1 and β_2 = parameters

u_t = disturbance term

A priori expectation: $\beta_1 < 0$ and $\beta_2 > 0$

3.5 Methodologies

This study employed the application of Autoregressive Distributed Lag (ARDL) and ARDL bound for co-integration. Breusch-Pagan Godfrey test was used in the trend of analysis, the Breusch-Godfrey LM was equally used for autocorrelation test for errors and CUSUM test which is used to test for stability in the parameter. The estimate shall be tested for significance. Only significant estimate shall be accepted and explained.

3.5.1 Autoregressive Distributed Lag Model (ARDL)

The ARDL method is an autoregressive distributed lag model and it is also considered as an Ordinary Least Square (OLS) model that is used in both stationary time series and non-stationary series with mixed order of integration, it was developed by (Pesaran and Pesaran 1997, Pesaran and Shin 1999, Pesaran et al. 2001). According to Busu (2020) this model takes into consideration sufficient number of lags and it further uses those lags to capture the data generating process in converts it into one specific modelling framework. The model of ARDL plays an important role when the data are analyzed through economic variables and it help to identify changes in the variables.

According to Osman et al. (2019) one the main advantage of ARDL is that it is more robust and it performs better in small sized data. The time-series of the data in this study is 29 years and it would provide results that are accurate. According to Qamruzzaman and Wei (2018) collinearity occurs in every model; however, this model has been designed to counter the lacks of models and causes the data to be more accurate. Moreover, this model solves the issue of choosing an optimal lag length and further imposes a structure on the length of the lag by making the model more linear. Furthermore, this model solves the issue of collinearity by following the lag of the dependent variable and there are four dependent variables identified in the study, therefore, it will create structure based on lags of each variable context to the independent variable. There are assumptions of the ARDL model that includes there is absence of correlation in the first requirement of ARDL and it states that there are no errors related to the autocorrelation (Kripfganz and Schneider, 2018). The variance and the mean are constant throughout the model and there is no heteroscedasticity in the model and the data of the model should follow normal

distribution. The data of the model should be stationary and the variables associated with the model should be stationary to the model to show accurate results and ARDL is used to address the lag problem in a more efficient manner. This model will further help to identify the lag problems of the variables of Jordan and according to the sample size it is considered as a more preferable approach.

$\Delta yt = \beta 0 + C0t + \sum \lambda i \Delta yt{-}i \; q \; i{=}1 + \sum \varphi j \Delta xt{-}j \; p \; j{=}0 + \delta 1 yt{-}1 + \delta 2 xt{-}1 + \varepsilon t$

Where, $\beta 0$ is a constant, $C0$ is the time trend, εt is the white noise error. The coefficients λj & φi for all j represents the short-run relationship while $\delta 1$ and $\delta 2$ corresponds to the long-run relationship

3.5.2 Augmented Dickey-Fuller Test

Augmented Dickey-Fuller Test (ADF) is one the most common statistical used to determine if the time series is stationary or not. The ADF test belongs to the category of unit root test and it is considered as a proper method for testing the time series. According to Paparoditis and Politis (2018) the ADF test is used to test stationarity or presence of the unit root and it is conducted by the augmenting the equation in which the difference form of lag of the dependent variable is added to the independent variable. In the case of the presence of unit root, a first-order differenced series is tested for stationarity in order to implement the required test. The following are the three variants of the ADF test.

No Constant and no trend

$$\Delta Yt = \gamma 1 Yt - 1 + \sum i = 1 m \alpha i \Delta Yt - i + \mu t \ldots\ldots \qquad \textbf{3.5}$$

Constant and no Trend

$$\Delta Yt = \gamma 0 + \gamma 1 Yt - 1 + \sum i = 1 m \alpha i \Delta Yt - i + \mu t \ldots\ldots \qquad \textbf{3.5.1}$$

Constant and Trend

$$\Delta Yt = \gamma 0 + \gamma 1Yt - 1 + \gamma 2t + \sum i = 1m\alpha i\Delta Yt - i + \mu t \ldots\ldots \qquad \textbf{3.5.2}$$

μt is a pure white noise error term and ΔYt is the first difference of the dependent variable. The pattern of the first dependent variable needs to be verified by observing the diagrammatic representation. According to Islam, et al. (2018) if the data series exhibits neither drift no a trend the equation 1 can be applied and if the series exhibits drift but not trend then equation 2 can be applied and the series exhibits both trend and drift then equation 3 canbe applied. This test will help to evaluate the dependent variables with the independent variables of the study and further helps to develop a null hypothesis and has helped to evaluate the relationship between the variables.

3.5.3 Unit root Test

The unit root test is commonly used to assess if a time series of data is stationary or not. The variance and mean of a stationary time series are both constant. In most empirical time-series investigations, the test for unit root is now the starting point. Dickey and Fuller (1979) is the oldest and most commonly used test.

3.5.4 ARDL bound Co-integration Test

The ARDL bound Co-integration can be explained as the process of integrating a time series data to for equilibrium relationship. Nobel laureates Robert-Engle and Clive-Granger at first proposed the concept in 1987, then British economist Paul Newbold and Granger published the generalized regression concept. The ARDL bound test for co-integration is used to check whether correlation exist among several time series. Time series data set record observations of variables at a given interval. Co-Integration test identify situations in which two, three or more non-stationary time series are integrated in such a manner they won't shift from the given equilibrium in the long term. The test are solely used to recognize the level of sensitivity among two or more variables over a given specific period of time.

3.5.5 Breusch-pagan Godfrey Test

The Breusch-pagan Godfrey test is a test of null hypothesis. It's mainly to test errors of heteroskedasticity in regression. Heteroskedasticity simply means differently scattered. The test for Breusch-pagan estimate how errors could increase along the explanatory variable Y. The test assumes that the error variances are due to a linear function of one or more explanatory variables in the model-set. That simply means heteroskedasticity is still be present in the regression model, but those errors (if present) are not correlated with the Y-values.

Breusch-pagan Godfrey test equation is as follows

$$N * R^2$$

Which indicates:

- n _ sample size
- R^2 _ R^2 (co-efficient of determination) in the regression of squared residuals from the original regression.

H_0; The error variances are equal.

H_1: The error variances are not equal.

According to Shenkin. (2018) the test evaluates the increase of errors in the variables through explanatory variables and the test also considers the errors in the variances caused by the linear function of more than a single variable. It implies that heteroskedasticity is still present in the model and it is not correlated. The purpose of the test signifies that, it is performed under mere assumptions that the errors are independent and distributed identically.

3.5.6 Breusch-Godfrey LM Test

The Breusch-Godfrey LM test is widely known for autocorrelation test for errors. It's commonly used procedure for estimating the residuals of a regression model. It assumes that the residuals are not related to the order of p (Raïsi, 2018). The Breusch-Godfrey L-M test is a linear regression procedure that is carried-out with the residuals having the original variables and the unassigned ones. The test is not suitable for systems with residual auto-correlation or lagged independent variables.

H0; there isn't any serial correlation of any order up to p

H; there is serial correlation of any order up to pT

The Lagrange Multiplier test is a type of test that tests the correctness of a hypothesis or a model. It is commonly used to evaluate the validity of various modelling assumptions. The structure in which the L-M test takes place is also known as the economic models and regression models. The equation below shows the test for L-M which is:

$$LM = (n - p)R^2$$

We have, *n* which stands for the original sample size, p stands for df and R^2 signifies r-squared where *k* = the number of independent variables

3.5.7 CUSUM Test

In 1975, Brown, Durbin, and Evans introduced the CUSUM test. With the presence of null hypothesis, the CUSUM test is certainly based on recursive residuals that are independently distributed. The stability parameter is checked using the Cumulative sum (CUSUM) of recursive residuals. The sum test of cumulative review or identifies changes in regression co-efficients that are systematic.

CHAPTER FOUR

EMPIRICAL RESULTS AND DISCUSSION

The analysis of the data obtained for this investigation will be the subject of this chapter. Furthermore the results and interpretation of the level of analysis will be presented in this chapter. Mean, median, maximum, and minimum shall be utilized for trend analysis while descriptive statistics of graphs shall be employed.

Descriptive Analysis

Descriptive analysis can be described as a mathematical description that quantitatively explains the data set or measure the central tendency. The findings of the descriptive analysis below shows the effect of the variables used in the model.

The variables of the descriptive statistics employed in the estimations in this study are presented in tables and figures below.

We accept the null hypothesis if the t-statistics is larger than the crucial values. There is a unit root, and the data is non-stationary. Assume that t-statistics are smaller than critical levels. The data is stationary, and the unit root does not exit. Furthermore the null-hypothesis must be rejected when the P-value is less than significant level, often at 0.01 (1%), 0.05 (5%) and 0.1 (10%). Accepting the null-hypothesis is when the t-statistics is greater than all the critical values and it shows there is a unit root.

When t^* > ADF critical-values _ we don't reject null hypothesis, because, unit root exists.

When t^* < ADF critical-values_ we reject null hypothesis, because, unit root does not exist

Table 2. Descriptive Analysis

	AGDP	INGDP	CEX	REX	TAX
Mean	6281.853	6610.031	426.2195	1281.739	941.0353
Median	1467.690	1811.465	289.3350	455.6300	269.6500
Maximum	27371.30	32218.33	1682.100	5675.200	4006.000
Minimum	17.05000	48.59000	4.100000	4.750000	3.000000
Std. Dev.	7936.118	8808.877	437.4743	1604.470	1212.049
Skewness	1.132594	1.294144	0.901395	1.122569	1.122290
Kurtosis	3.039364	3.474077	2.989472	3.047242	2.819105

*Source: Author Computation

The descriptive analysis a mathematical description that quantitatively outlines or explains the characteristics of the data set which helps to obtain or measure the central tendency(mean, median and mode), the dispersion(standard deviation) and to also understand whether the sample of our data is normally distributed (kurtosis and skewness). The findings of the descriptive analysis in table 2, shows the effects of the variables used in the model, and the findings report the key trend parameters, i.e. the mean , median, minimum, maximum, standard deviation, skewness and Kurtosis. The mean is the sum of all the values in the data set and then divides it by the reported number within the data set. Therefore, the mean results reports the mean value of Agricultural contribution to GDP (AGDP) as 6281.853, Industrial contribution to GDP (INGDP) as 6610.031, capital expenditure as 426.2195, re-current expenditure as 1281.739 and Tax as 941.0353. The median represents the middle value after sorting observations from the highest to the lowest values or vice versa and the median result reports the Agricultural contribution to GDP (AGDP) is 1467.690, Industrial contribution to GDP (INGDP) as 1811.465, capital expenditure as 289.3350, re-current expenditure as 455.6300 and Tax as 269.6500. The skewness helps to measure the degree of asymmetry of the series and a positive skewness implies that, the distribution will have a higher long right tail, meaning there are higher values than the sample mean whiles negative skewness implies that, the distribution will have a higher long left tail, meaning there are lower values than the sample mean. Therefore, the statistical skewness reports that, all the variables are positively skewed. The skewness values for AGDP is 1.132594, INGDP is 1.294144, CEX is 0.901395, REX is 1.122569 and Tax is 1.122290.

The Kurtosis statistics measures the peakness or flatness of the distribution of the series and a mesokurtic contains a normal distribution with a kurtosis value of 3 and if it is leptokurtic, it

means it has a positive kurtosis (peaked curve or steeper curve) whiles being platykurtic implies that it has a negative kurtosis (flatted curve) with more lower values than the sample mean. The kurtosis results shows that capital expenditure (CEX) and Taxation are platykurtic, less than 3 and have a flatted curve. Whereas AGDP, INGDP and re-current expenditure (REX) are leptokurtic, they are more than 3 and have a positive kurtosis means that they have a peaked or steeper curve.

Unit Root Test

The unit root test is usually done to determine whether a time series data is stationary or non-stationary. A stationary time series has a constant mean ($\bar{x}$), variance (σ^2) and auto covariance overtime.

However, if a time series is non stationary, we often apply difference in making it stationary. Gujarati (2004) highlights that regressing a time series that is non stationary on one or more non stationary time series can create a spurious regression. And, it is also vital to verify the stationarity of time series data when working with time series data to prevent a spurious regression. However, another explanation for conducting stationary tests is the outcomes collected from a time series which is non stationary, can be seen for the specific span of time and cannot be extended to the future.

The results show that the variables are in 1(1) order of integration. Equally the ADF test provided in table suggest all the variables are non-stationary in level, which lead to the application of first difference. The unit root presence of all variables mentioned was eliminated in the first-difference. The unit root test result is represented in the table 3

Table 3. Unit Root Tests

	Augmented Dickey-Fuller test			Phillips-Perron test		
	Level	First Difference	Description	Level	First Difference	Description
AGDP	1.0000	0.0462	I(1)	1.0000	0.0000	I(1)
CEX	0.5119	0.0000	I(1)	0.4754	0.0000	I(1)
INGDP	0.9920	0.0400	I(1)	0.9957	0.0000	I(1)
REX	0.9997	0.0468	I(1)	0.9994	0.0000	I(1)
TAX	0.9648	0.0000	I(1)	0.9804	0.0000	I(1)

*Note: All statistics show PV. Source: Author Computation

Table 4. Short Run ARDL (Dependent Variable: AGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AGDP(-1))	-0.076481	0.047364	-1.614746	0.1086
D(CEX)	1.048746	0.307828	3.406922	0.0009
D(REX)	2.573574	0.192667	13.35762	0.0000
ECT(-1)	-0.120204	0.022308	-5.388399	0.0000

*Source: Author Computation

Short Run ARDL (Dependent Variable: AGDP)

The results of the ARDL for short run is shown in table 4, we went further to ascertain all the variables are statistically significant at 1%, 5%, and 10% confidence level which means there is a short run relationship among the variables mentioned. The lad of AGDP is -0.076481 with p value of 0.1086 which is significant at all level. Also we pictured REX is negatively significant related due to the fact its p-value is 0.0000. this shows, past values and future trend of the variable. The error correction term ECT-1 is -0.120204 negative and statistically with probability of 0.0000 showing 0.12% variation in the variables are corrected by correction error model which ascertain the disequilbrium can be amended with the long run.

Table 5. Long Run ARDL (Dependent Variable: AGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.15392	36.95708	0.572392	0.5680
AGDP(-1)*	-0.120204	0.037990	-3.164142	0.0019
CEX(-1)	0.000310	0.152389	0.002032	0.9984
REX(-1)	0.389751	0.180736	2.156466	0.0327
TAX**	0.333278	0.128190	2.599883	0.0103
D(AGDP(-1))	-0.076481	0.054201	-1.411063	0.1604
D(CEX)	1.048746	0.320735	3.269824	0.0014
D(REX)	2.573574	0.212803	12.09370	0.0000

*Source: Author Computation

Long Run ARDL (Dependent Variable: AGDP)

The result of the long run ARDL is shown in table 5. We found out most of the variables are statistically highly signficant at 1%, 5%, 10% confidence interval as the p-value for REX, TAX are less than 5% which signifies the trend predicts the future trend of the variables. İf re-current expenditure increases by 1% point, it will eventually lead to increase in the Agricultural contribution to GDP (AGDP).

Table 6. Short Run ARDL (Dependent Variable: INGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CEX)	0.859191	0.627672	1.368853	0.1732
D(REX)	3.639596	0.372549	9.769448	0.0000
D(TAX)	3.096822	0.493869	6.270533	0.0000
ECT(-1)	-0.089993	0.026875	-3.348528	0.0010

*Source: Author Computation

Short Run ARDL (Dependent Variable: INGDP)

The results of the ARDL for short run is shown in table 6, we ascertain all the variables are statistically significant at 1%, 5%, and 10% confidence level which means there is a short run relationship among the variables mentioned. REX and TAX are negatively significant related due to the fact its p-value is 0.0000. this shows, past values and future trend of the variable. The error correction term ECT-1 is -0.089993 which is negative and statistically with probability of 0.0010 showing the variation in the variables are corrected by correction error model which ascertain the disequilbrium can be amended with the long run.

Table 7. Long Run ARDL (Dependent Variable: INGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	47.96632	66.79073	0.718158	0.4738
INGDP(-1)*	-0.089993	0.043030	-2.091423	0.0383
CEX(-1)	-0.202750	0.274303	-0.739143	0.4610
REX(-1)	0.644712	0.203167	3.173313	0.0018
TAX(-1)	-0.120083	0.289221	-0.415193	0.6786
D(CEX)	0.859191	0.655786	1.310171	0.1922
D(REX)	3.639596	0.407468	8.932222	0.0000
D(TAX)	3.096822	0.527385	5.872034	0.0000

*Source: Author Computation

Long Run ARDL (Dependent Variable: INGDP)

The result of the long run ARDL is shown in table 7. We found out most of the variables are statistically highly signficant at 1%, 5%, 10% confidence interval as the p-value for REX, TAX are less than 5% which signifies the trend predicts the future trend of the variables. İf re-current expenditure increases by 1% point, it will eventually lead to increase in the Industrial contribution to GDP (INGDP)

Table 8. ARDL Bound Test for Cointegration (Dependent Variable: AGDP)

F-Bounds Test			Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	5.647873	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample:	
Actual Sample Size	150		n=80	
		10%	2.474	3.312
		5%	2.92	3.838
		1%	3.908	5.044

*Source: Author Computation

Upon deciding the variables are stable, then the next method is to conduct cointegration tests to assess if there is a long-term connection among variables. Table 8, the ARDL Bound Test for Co-integration is used to analyze the relationship between the variables and this will also help to draw vital economic conclusions depending on the results acquired. The regression below shows the ARDL Bounds test for co-integration in analyzing the relationship with AGDP (Agricultural contribution to GDP) as the dependent variable. However, ARDL Bound test for co-integration, we consider the value of the F statistic and then compare it to the critical values. Following the criteria, suppose the f value is less than the critical values, then we will not reject the null hypothesis that reports a no cointegration among variables and in the same vein, if the f value is greater than the critical values, then we reject the null which shows or reports cointegration among variables.

From the result below, the reported f statistic 5.647873 is above the critical value at 1% significance level, which supports a long run cointegration bound among the variables i.e. there exists an equilibrium in the variables.

Table 9. ARDL Bound Test for Cointegration (Dependent Variable: INGDP)

F-Bounds Test (INGDP)			Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	2.781506	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample:	
Actual Sample Size	151		n=80	
		10%	2.474	3.312
		5%	2.92	3.838
		1%	3.908	5.044

*Source: Author Computation

Upon deciding the variables are stable, then the next method is to conduct cointegration tests to assess if there is a long-term connection among variables. Table 9. The ARDL Bound Test for Co-integration is used to analyze the relationship between the variables and this will also help to draw vital economic conclusions depending on the results acquired. The regression below shows the ARDL Bounds test for co-integration in analyzing the relationship with INGDP (Industrial contribution to GDP) as the dependent variable. However, ARDL Bound test for co-integration, we consider the value of the F statistic and then compare it to the critical values. Following the criteria, the f value is less than the critical values at 5%, then we will not reject the null hypothesis that reports a no cointegration among variables and in the same vein, if the f value is greater than the critical values, then we reject the null which shows or reports cointegration among variables.

From the result below, the reported f statistic 2.7815063 is higher than the critical value at 10% significance level, which shows there is cointegration in the variables and supports a long run cointegration bound among the variables.

Table 10. Heteroskedasticity Test: Breusch-Pagan-Godfrey Test (Dependent Variable: AGDP)

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	3.754353	Prob. F(7,142)	0.1009
Obs*R-squared	23.42560	Prob. Chi-Square(7)	0.1014
Scaled explained SS	165.9182	Prob. Chi-Square(7)	0.1000

*Source: Author Computation

Heteroskedasticity Test: Breusch-Pagan-Godfrey Test (Dependent Variable: AGDP)

The result of the test for Breusch-pagan-Godfrey is shown in Table 10. The chi-square given value signifies 0.1014. The probability-value is more than 0.05 (5%) which results to the acceptance of the null hypothesis of homoscedasticity. The Breusch-Pagan-Godfrey test makes clear that the residual of the model are free from heteroscedasticty. Moreover with the evidence of the result the error variance are equal, therefore it suggest there is no issue of heteroskedasticity in the data-set.

Table 11. Heteroskedasticity Test: Breusch-Pagan-Godfrey Test (Dependent Variable: INGDP)

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	8.652700	Prob. F(7,143)	0.1000
Obs*R-squared	44.92781	Prob. Chi-Square(7)	0.1000
Scaled explained SS	368.2012	Prob. Chi-Square(7)	0.1000

*Source: Author Computation

Heteroskedasticity Test: Breusch-Pagan-Godfrey Test (Dependent Variable: INGDP)

The result for the test of Breusch-pagan-Godfrey is shown in Table 11. The chi-square is 0.1000. The probability-value is more than 0.05 (5%) which results to the acceptance of the null hypothesis of homoscedasticity. The Breusch-Pagan-Godfrey test makes clear that the residual of the model are free from heteroscedasticty. From the evidence of the result the error variance are equal, therefore it suggest there is no issue pertaining heteroskedasticity in the dataset.

Table 12. Breusch-Godfrey Serial Correlation LM Test Test (Dependent Variable: AGDP)

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.059777	Prob. F(2,140)	0.3493
Obs*R-squared	2.237082	Prob. Chi-Square(2)	0.3268

*Source: Author Computation

Breusch-Godfrey LM Test (Dependent Variable: AGDP)

The Breusch-Godfrey L-M test is explained to mean the test that accounts for auto-correlation in the errors of the regression model, also it applies the use of residuals that are generally observed in the regression analysis. The null-hypothesis in this test is that there is no seriel correlation of any sequence or order. İn table 12 both F-statistic and Chi-square of the test statistics provided the same conclusion that there isn't any indication for the presence of a serial correlation, since our p-value is below the 5% confidence level, therefore the null hypothesis is accpeted

Table 13. Breusch-Godfrey Serial Correlation LM Test Test (Dependent Variable: INGDP)

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.011566	Prob. F(2,141)	0.9885
Obs*R-squared	0.024769	Prob. Chi-Square(2)	0.9877

*Source: Author Computation

Breusch-Godfrey L-M Test (Dependent Variable: INGDP)

The Breusch-Godfrey L-M test is explained to mean the test that accounts for auto-correlation in the errors of the regression model, furthermore it applies the use of the residuals that are considered in the analysis of the regression. The null-hypothesis of this test states that there is no seriel correlation of any order. İn table 13 both F-statistic and Chi-square of the test statistics provided the same conclusion that there isn't any indication for the presence of a serial correlation, since the p-value is less than 5% confidence level, therefore the null-hypothesis is accpeted

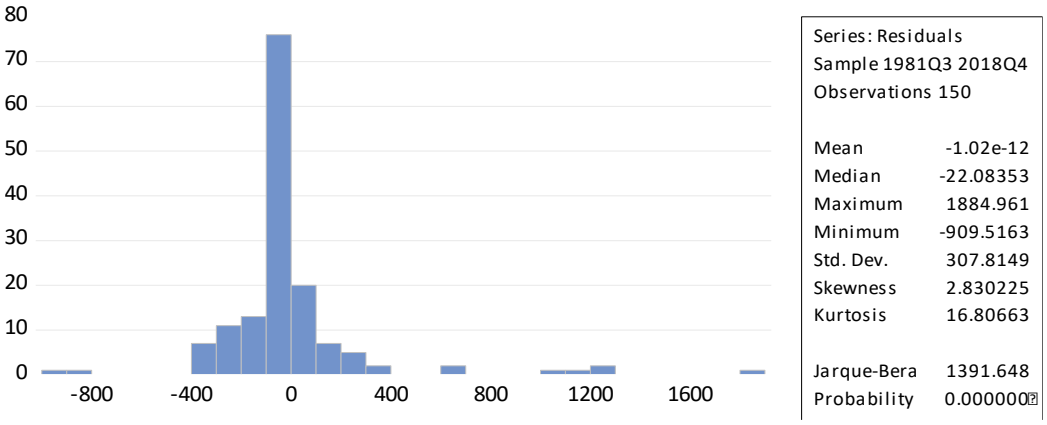


Figure 2. Normality test (Dependent Variable: AGDP)

*Source: Author Computation

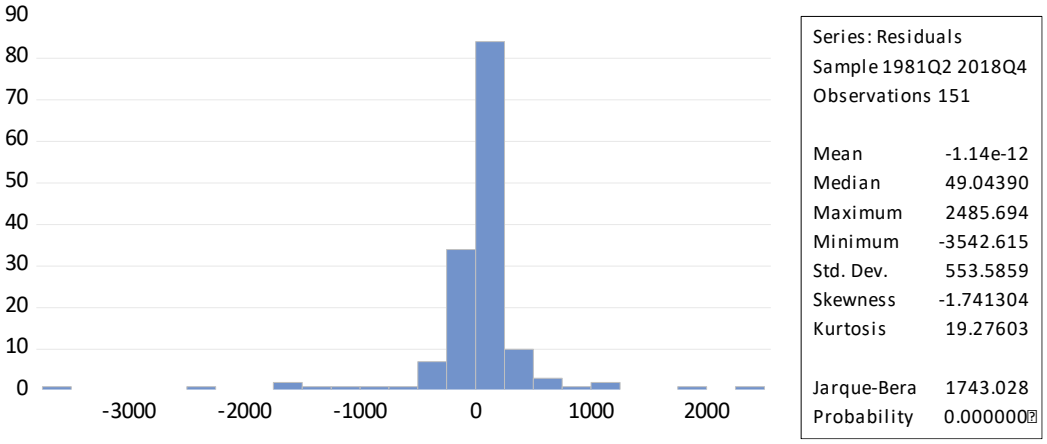


Figure 3. Normality test (Dependent Variable: INGDP)

*Source: Author Computation

Normality Test (Dependent variable: INGDP & AGDP)

Figures 2 &3 indicates normality test for the INGDP (Industrial contribution to GDP) and AGDP (Agricultural contribution to GDP) since the p-value is 0.0000 in both. Therefore p=0.0000 implies high significance. It is normally distributed

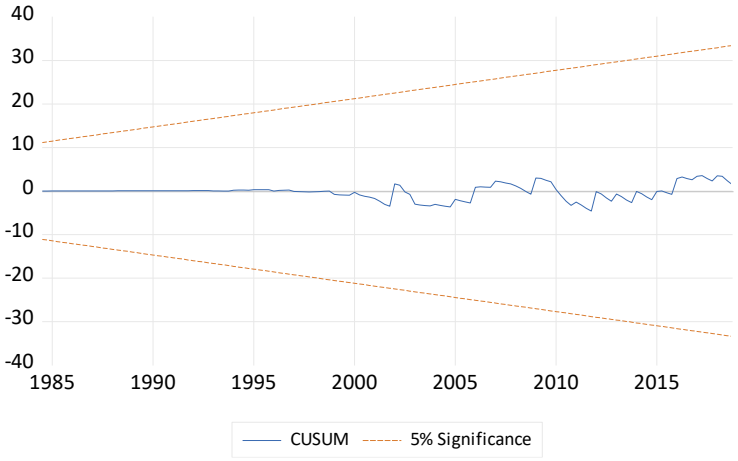


Figure 4. CUSUM Test (Dependent Variable: AGDP)

*Source: Author Computation

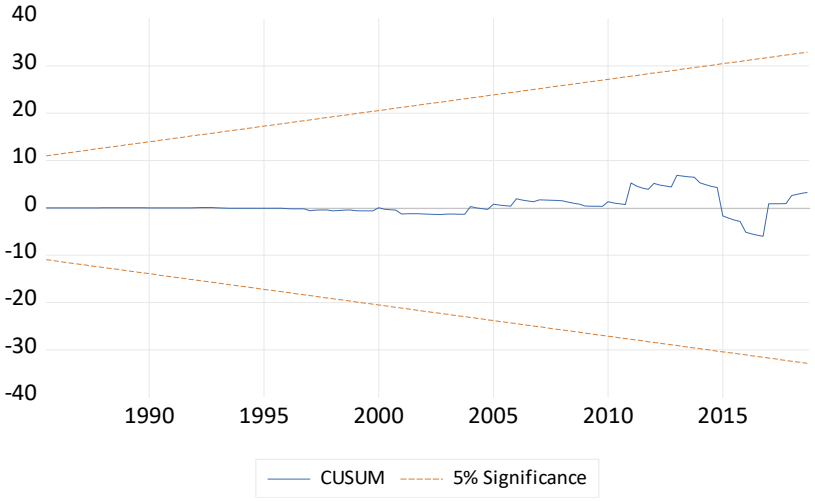


Figure 5. CUSUM Test (Dependent Variable: INGDP)

*Source: Author Computation

CUSUM Test (Dependent Variable: INGDP & AGDP)

Figures 4 & 5 represent the CUSUM test. The CUSUM test is mainly to test for short-run together with the long-run graphical result which represent the stabilty in the model since they all lie within the 5% significance level boundary and which shows that, the structural break in the model has been conveniently taken care of and hence signifies stabilty of the model at 5% significance level

CHAPTER 5

SUMMARY, FINDINGS, POLICY IMPLICATION, CONCLUSION, AND RECOMMENDATION

5.1 SUMMARY OF STUDY

The research aimed at investigating the measures of fiscal component on the real sectors in the Nigeria economy through the application of Autoregressive Distributed Lag (ARDL) and equally ARDL bound test for co-integration by using the time series data from 1981 to 2018. Variables such as CEX, REX, TAX, were employed to make up the independent variables while AGDP and INGDP make up the dependent variable. Also, the literature review was sourced from previous scholars to deliberate on the analysis of the fiscal measures and its impact on the real sectors in Nigeria.

5.2 FINDINGS

The analysis of data sourced indicates that some findings were actually obtained. The findings made can be summarized as follows:

(i) Tax revenue conform to a priori expectation and was significant and had an impact in the real sectors in Nigeria;

(ii) Tax revenue conform to a priori expectation and was significant in determining industrial output and Agricultural output.

(iii) Government capital expenditure and recurrent expenditure conforms to a priori expectation and was significant and had an impact in the real sectors in Nigeria.

Furthermore, the actual purpose of the study was to establish a real relationship between fiscal policy measures and its impact on the real sectors (Agricultural sector contribution to GDP) and (Industrial sectors contribution to GDP). The studies was conducted on the fiscal policy measures which constitutes capital expenditure, re-current expenditure and taxation. The study showed that the fiscal policy measures tremendously impacted on the real sector development. The study has found out that the agricultural sector contribution to GDP increased, AGDP increased rapidly at year 1995 from 790.14 billion naira to 1,070.51 billion naira in year 1996 and in the year 2007 it increased from 8,551.98 billion naira to 10,100.33 billion naira in year 2008. Equally the industrial sector contribution to GDP increased rapidly, at year 2009 from 9,008.26 billion naira to 13,826.42 in year 2010.

The relationship between fiscal policy measures and the real sectors should be positively correlated. Thus if the fiscal policy measures are effectively executed, it will result in a rapid development in the real sectors contributions to GDP (agricultural contribution to GDP and industrial contribution to GDP) in Nigeria.

5.3 POLICY IMPLICATION

The findings of this research, however have significant impact on the real sectors, especially in the Agricultural production and the Industrial output in Nigeria. However this is not the first effort to empirically look into the casual relationship between the variables employed in this study by analyzing them using a variety of assessment methods.

5.4 CONCLUSION

Our findings shows that fiscal policy in Nigeria has performed well in determining the performance of the real sectors (most importantly in the agricultural sectors and industrial sectors) between 1981 and 2018. The research indicate that capital expenditure, recurrent expenditure was significant and had a positive impact on the real sectors. In addition, though tax revenue was significant, and had an impact in the real sectors (i.e agricultural and industrial) between 1981 and 2018.

The ARDL bound test for co-integration was used to access the relationship between fiscal policy and the real sectors contribution to the growth in the Nigeria economy. The ARDL econometric methodology was adopted in estimating the relationship between fiscal policy instrument and the real sectors contribution to GDP. This research adopted a linear growth approach system that measures the level of growth economically as a result of the fiscal policy tools. Taxation was significant due to investment purposes, and had an impact in the real sectors. It was suggested that the government should monitor or better still cut the rate of tax to regulate and stimulate the rate of growth in the agricultural sector contribution to GDP and Industrial-sector contribution to Gross domestic product.

In the short run ARDL both AGDP and INGDP, capital expenditure (CEX) was statistically significant. Therefore an increase in capital expenditure will eventually lead to an increase in both Industrial contribution to GDP (INGDP) and Agricultural contribution to GDP (AGDP).

While in the long run ARDL for AGDP, CEX and TAX was significant, meaning an increase in capital expenditure (CEX) and TAX will lead to a potential increase in the Agricultural contribution to GDP (AGDP).

In the long run ARDL for INGDP. Capital expenditure (CEX) and re-current expenditure (REX) was statistically significant, meaning an increase in capital expenditure (CEX) and re-current expenditure (REX) will lead to a potential increase in the Industrial contribution to GDP (INGDP).

Fiscal policy measures played a vital roles in the development of the real sectors in Nigeria according to the data available, the development of the real sectors mentioned in the study attributed to economic growth to the agricultural contribution to GDP (AGDP) and Industrial contribution to GDP (INGDP).

5.5 RECOMMENDATIONS

The study made the following recommendations:

1. Government budgeted spending should be adequately channeled to capital projects and social overhead capital that will enhance the growth in the real sectors in Nigeria

2. Government should not only rely on taxation that have slight effects on investment in the real sector

3. Increase in Government Spending**: An Expansionary fiscal policy (**Increase in Government spending and a reduction in tax**)** should be implemented in the real sectors in Nigeria.

4. Increase in Taxes: **A Contrationary fiscal policy** (Increase in Tax revenue) should be implemented to spur economic activities especially for investment purposes in the real sectors in Nigeria.

This will mean that good management of resources should be given proper attention by the government. This include increase in government spending, improvement on infrastructure projects, tax reduction, transfer payment, infuse the economy with more money through government contracts etc.

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Table 1: Data

Year	CEX(Billion)	REX(Billion)	TAX(Billion)	AGDP(Billion)	INGDP(Billion)
1981	6.57	4.85	4.7	17.05	54.13
1982	6.42	5.51	3.6	20.13	51.38
1983	4.89	4.75	3.3	23.80	52.45
1984	4.10	5.83	3	30.37	48.59
1985	5.46	7.58	4.1	34.24	60.90
1986	8.53	7.70	4.5	35.70	62.63
1987	6.37	15.65	6.4	50.29	78.35
1988	8.34	19.41	7.8	73.76	100.83
1989	15.03	25.99	14.7	88.26	144.69
1990	24.05	36.22	26.2	106.63	172.72
1991	28.34	38.24	18.3	123.24	215.11
1992	39.76	53.03	26.4	184.12	336.94
1993	54.50	136.73	30.7	295.32	409.59
1994	70.92	89.97	41.7	445.27	541.45
1995	121.14	127.63	135.4	790.14	931.10
1996	212.93	124.63	114.8	1,070.51	1,232.15
1997	269.65	158.56	166	1,211.46	1,261.36
1998	309.02	178.10	139.3	1,341.04	1,168.07
1999	498.03	449.66	224.8	1,426.97	1,440.31
2000	239.45	461.60	314.5	1,508.41	2,239.63
2001	438.70	579.30	903.5	2,015.42	2,182.62
2002	321.38	696.80	501	4,251.52	2,432.60
2003	241.69	984.30	500.8	4,585.93	3,211.19
2004	351.25	1,110.64	565.7	4,935.26	4,391.70
2005	519.47	1,321.23	785.1	6,032.33	5,591.36
2006	552.39	1,390.10	677.5	7,513.30	6,843.07
2007	759.28	1,589.27	1,200.80	8,551.98	7,679.74
2008	960.89	2,117.36	1,336.00	10,100.33	9,216.17
2009	1,152.80	2,127.97	1,652.70	11,625.44	9,008.26
2010	883.87	3,109.40	1,907.60	13,048.89	13,826.42
2011	918.55	3,314	2,237.90	14,037.83	17,853.11
2012	874.70	3,325	2,628.80	15,816.00	19,587.72
2013	1,108.39	3,214.90	2,950.60	16,816.55	20,853.85
2014	783.12	3,426.94	3,275.03	18,018.61	22,213.01
2015	818.35	3,831.95	3,082.41	19,636.97	19,188.58
2016	653.61	4,160.11	2,922.50	21,523.51	18,641.17
2017	1,242.30	4,779.99	3,335.20	23,952.55	25,639.90
2018	1,682.10	5,675.20	4,006.00	27,371.30	32,218.33

Source: Central Bank of Nigeria Statistical Bulletin 2018

Appendixes

Descriptive Analysis

	AGDP	INGDP	CEX	REX	TAX
Mean	6281.853	6610.031	426.2195	1281.739	941.0353
Median	1467.690	1811.465	289.3350	455.6300	269.6500
Maximum	27371.30	32218.33	1682.100	5675.200	4006.000
Minimum	17.05000	48.59000	4.100000	4.750000	3.000000
Std. Dev.	7936.118	8808.877	437.4743	1604.470	1212.049
Skewness	1.132594	1.294144	0.901395	1.122569	1.122290
Kurtosis	3.039364	3.474077	2.989472	3.047242	2.819105

Null Hypothesis: AGDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 4 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.936285	1.0000
Test critical values:	1% level	-4.021691	
	5% level	-3.440681	
	10% level	-3.144830	

Null Hypothesis: D(AGDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.963371	0.0462
Test critical values:	1% level	-4.021691	
	5% level	-3.440681	
	10% level	-3.144830	

Null Hypothesis: CEX has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.152841	0.5119
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(CEX) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.48648	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

Null Hypothesis: INGDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 4 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.222338	0.9920
Test critical values:	1% level	-4.021691	
	5% level	-3.440681	
	10% level	-3.144830	

Null Hypothesis: D(INGDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.528355	0.0400
Test critical values:	1% level	-4.021691	
	5% level	-3.440681	
	10% level	-3.144830	

Null Hypothesis: REX has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 8 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.717690	0.9997
Test critical values:	1% level	-4.023506	
	5% level	-3.441552	
	10% level	-3.145341	

Null Hypothesis: D(REX) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 7 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.679378	0.0468
Test critical values:	1% level	-4.023506	
	5% level	-3.441552	
	10% level	-3.145341	

Null Hypothesis: TAX has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.774774	0.9648
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(TAX) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-13.38019	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

Null Hypothesis: AGDP has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 12 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		1.643075	1.0000
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(AGDP) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 11 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-18.97813	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

Null Hypothesis: CEX has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.218787	0.4754
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(CEX) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-12.50422	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

Null Hypothesis: INGDP has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 9 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.017131	0.9957
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(INGDP) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-13.38708	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

Null Hypothesis: REX has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		0.542253	0.9994
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(REX) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 7 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-14.83154	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

Null Hypothesis: TAX has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.544493	0.9804
Test critical values:	1% level	-4.019975	
	5% level	-3.439857	
	10% level	-3.144346	

Null Hypothesis: D(TAX) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-13.57364	0.0000
Test critical values:	1% level	-4.020396	
	5% level	-3.440059	
	10% level	-3.144465	

ARDL Error Correction Regression
Dependent Variable: D(AGDP)
Selected Model: ARDL(2, 1, 1, 0)
Case 2: Restricted Constant and No Trend
Date: 08/23/21 Time: 14:02
Sample: 1981Q1 2018Q4
Included observations: 150

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AGDP(-1))	-0.076481	0.047364	-1.614746	0.1086
D(CEX)	1.048746	0.307828	3.406922	0.0009
D(REX)	2.573574	0.192667	13.35762	0.0000
CointEq(-1)	-0.120204	0.022308	-5.388399	0.0000

R-squared	0.666787	Mean dependent var	182.3617
Adjusted R-squared	0.659940	S.D. dependent var	533.2472
S.E. of regression	310.9613	Akaike info criterion	14.34352
Sum squared resid	14117753	Schwarz criterion	14.42380
Log likelihood	-1071.764	Hannan-Quinn criter.	14.37614
Durbin-Watson stat	1.974387		

ARDL Long Run Form and Bounds Test
Dependent Variable: D(AGDP)
Selected Model: ARDL(2, 1, 1, 0)
Case 2: Restricted Constant and No Trend
Date: 08/23/21 Time: 14:00
Sample: 1981Q1 2018Q4
Included observations: 150

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.15392	36.95708	0.572392	0.5680
AGDP(-1)	-0.120204	0.037990	-3.164142	0.0019
CEX(-1)	0.000310	0.152389	0.002032	0.9984
REX(-1)	0.389751	0.180736	2.156466	0.0327
TAX	0.333278	0.128190	2.599883	0.0103
D(AGDP(-1))	-0.076481	0.054201	-1.411063	0.1604
D(CEX)	1.048746	0.320735	3.269824	0.0014
D(REX)	2.573574	0.212803	12.09370	0.0000

ARDL Error Correction Regression
Dependent Variable: D(INGDP)
Selected Model: ARDL(1, 1, 1, 1)
Case 2: Restricted Constant and No Trend
Date: 08/23/21 Time: 14:04
Sample: 1981Q1 2018Q4
Included observations: 151

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CEX)	0.859191	0.627672	1.368853	0.1732
D(REX)	3.639596	0.372549	9.769448	0.0000
D(TAX)	3.096822	0.493869	6.270533	0.0000
CointEq(-1)*	-0.089993	0.026875	-3.348528	0.0010

R-squared	0.693389	Mean dependent var	213.0079
Adjusted R-squared	0.687132	S.D. dependent var	999.7503
S.E. of regression	559.2062	Akaike info criterion	15.51705
Sum squared resid	45968609	Schwarz criterion	15.59697
Log likelihood	-1167.537	Hannan-Quinn criter.	15.54952
Durbin-Watson stat	1.978839		

ARDL Long Run Form and Bounds Test
Dependent Variable: D(INGDP)
Selected Model: ARDL(1, 1, 1, 1)
Case 2: Restricted Constant and No Trend
Date: 08/23/21 Time: 14:03
Sample: 1981Q1 2018Q4
Included observations: 151

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	47.96632	66.79073	0.718158	0.4738
INGDP(-1)*	-0.089993	0.043030	-2.091423	0.0383
CEX(-1)	-0.202750	0.274303	-0.739143	0.4610
REX(-1)	0.644712	0.203167	3.173313	0.0018
TAX(-1)	-0.120083	0.289221	-0.415193	0.6786
D(CEX)	0.859191	0.655786	1.310171	0.1922
D(REX)	3.639596	0.407468	8.932222	0.0000
D(TAX)	3.096822	0.527385	5.872034	0.0000

F-Bounds Test (AGDP) Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)

			Asymptotic: n=1000	
F-statistic	5.647873	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample:	
Actual Sample Size	150		n=80	
		10%	2.474	3.312
		5%	2.92	3.838
		1%	3.908	5.044

F-Bounds Test (INGDP) Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	2.781506	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample:	
Actual Sample Size	151		n=80	
		10%	2.474	3.312
		5%	2.92	3.838
		1%	3.908	5.044

Heteroskedasticity Test: Breusch-Pagan-Godfrey (AGDP)
Null hypothesis: Homoskedasticity

F-statistic	3.754353	Prob. F(7,142)	0.1009
Obs*R-squared	23.42560	Prob. Chi-Square(7)	0.1014
Scaled explained SS	165.9182	Prob. Chi-Square(7)	0.1000

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	8.652700	Prob. F(7,143)	0.1000
Obs*R-squared	44.92781	Prob. Chi-Square(7)	0.1000
Scaled explained SS	368.2012	Prob. Chi-Square(7)	0.1000

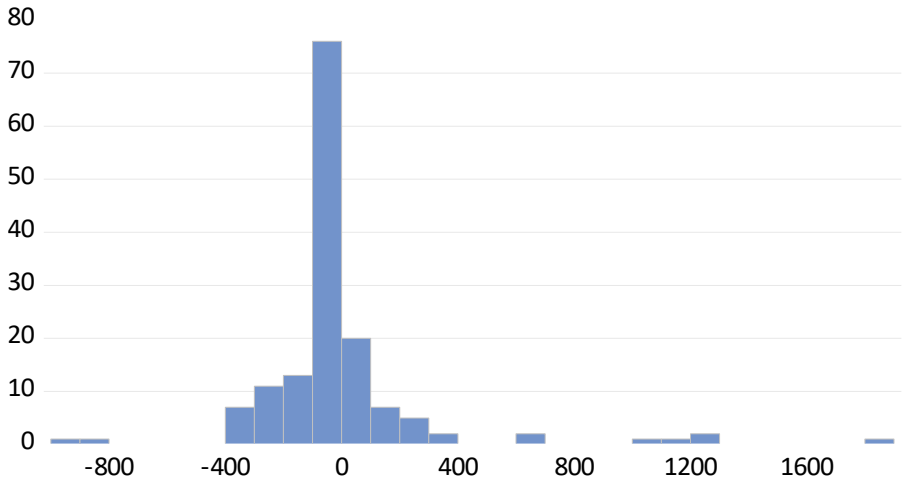
Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.059777	Prob. F(2,140)	0.3493
Obs*R-squared	2.237082	Prob. Chi-Square(2)	0.3268

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

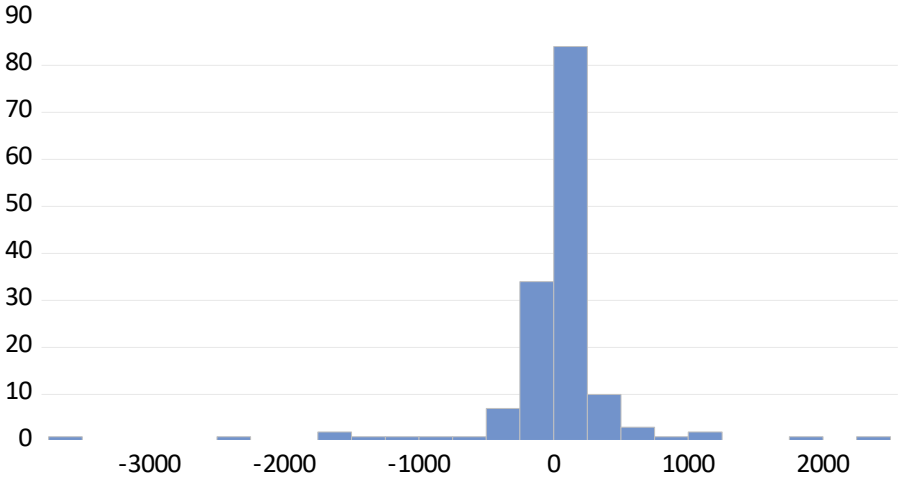
F-statistic	0.011566	Prob. F(2,141)	0.9885
Obs*R-squared	0.024769	Prob. Chi-Square(2)	0.9877

Normality test (Dependent Variable: AGDP)



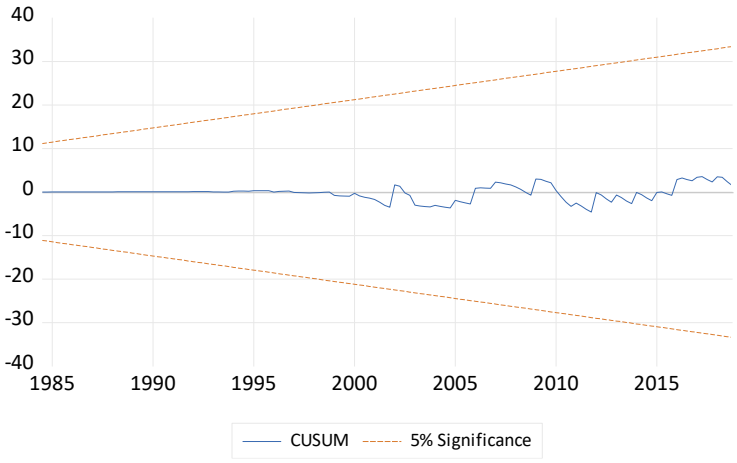
Series: Residuals	
Sample 1981Q3 2018Q4	
Observations 150	
Mean	-1.02e-12
Median	-22.08353
Maximum	1884.961
Minimum	-909.5163
Std. Dev.	307.8149
Skewness	2.830225
Kurtosis	16.80663
Jarque-Bera	1391.648
Probability	0.000000

Normality test (Dependent Variable: INGDP)

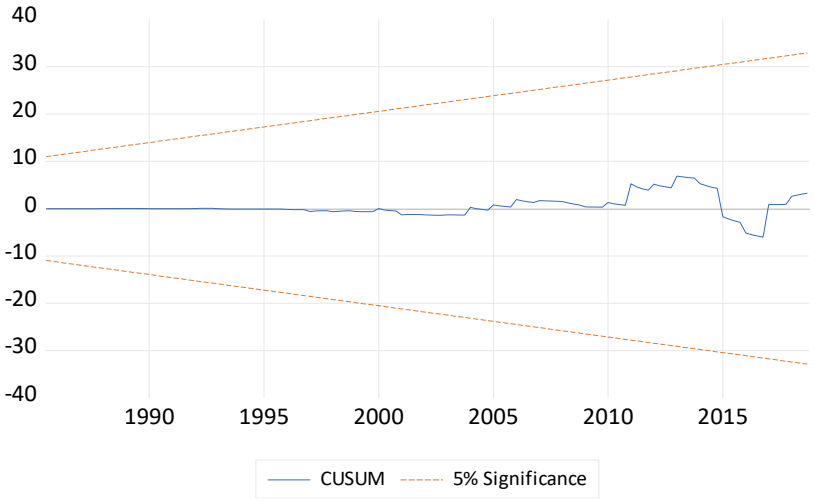


Series: Residuals	
Sample 1981Q2 2018Q4	
Observations 151	
Mean	-1.14e-12
Median	49.04390
Maximum	2485.694
Minimum	-3542.615
Std. Dev.	553.5859
Skewness	-1.741304
Kurtosis	19.27603
Jarque-Bera	1743.028
Probability	0.000000

CUSUM Test (Dependent Variable: AGDP)



CUSUM Test (Dependent Variable: INGDP)



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ETHICS COMMITTEE APPROVAL

Lisansüstü Eğitim Enstitüsü Müdürlüğü'ne;

Tezin yazılıp hazırlanmasında etik kurallarına aykırı hiçbir unsurun yer almadığını tez danışmanları olarak beyan ederiz.

Prof.Dr.Hüseyin ÖZDEŞER(Supervisor)

Yrd.Doç.Dr.Mehdi SERAJ (Co-supervisor)