The Effect of Oil Dependency on Nigeria's Economic Growth

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Tracy Igberaese

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Howard Nicholas (Supervisor)

John Cameron (Second Reader)

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Inquiries:

Acknowledgements

Contents

List of Tables

List of Figures

List of Acronyms

FAO	Food and Agriculture Organization
ISS	Institute of Social Studies
UNDP	United Nations Development Program
WB	World Bank
GDP	Gross Domestic Product
IMF	International Monetary Fund
NNPC	Nigerian National Petroleum Corporation
OPEC	Organization of Petroleum Exporting Countries
NEEDS	National Economic Empowerment and Development Strategy
EDA	Exploratory Data Analysis
FSDH	First Securities Discount House
NPC	National Planning Commission
CBN	Central Bank of Nigeria
IFPRI	International Food Policy Research Institute
OFN	Operation Feed the Nation
NAFPP	National Accelerated Food Production Program
UNIDO	United Nations International Development Organization
EPZ	Export Processing Zones
TI	Transparency International
UAE	United Arab Emirates
FTZ	Free Trade Zone
HO	Heckscher Ohlin

Abstract

Nigeria is the largest oil exporting country in Africa and has a rapidly growing economy. The country follows a resource based growth strategy driven by the production and exporting of oil. With the volatility of global oil prices and often volatile growth of Nigeria's economy, this research is designed to examine the effect of Nigeria's oil dependency on economic growth. This research attempts to answer the question of if the volatility of global oil prices is directly linked with the volatility of economic growth in Nigeria and uses GDP as the key variable for economic growth. An exploratory data analysis is employed using secondary data to examine the relationship between oil and GDP and the effect it has had on Nigeria's growth since 1961.

The research found that there is a significant and positive relationship between oil dependency and economic growth in Nigeria. In the short-run, Nigeria was able to have increasing, yet volatile growth because of the high global oil prices, but in the long-run, the inconsistency of oil prices and lack of diversification of the productive base has had a negative effect on Nigeria's economic growth. Thus, the research suggests that global oil prices are the cause of Nigeria's volatile growth rate. A combination of strict fiscal policy focused on the actual implementation of development and diversification and industrialization might be effective to protect the country's economic from further global shocks and lead to increased and consistent economic growth.

Relevance to Development Studies

The macroeconomic studies on resource based growth strategies intend to address the discussion on whether or not natural resources can lead to economic growth. The analysis will provide an understanding of the extent to which oil dependency and ultimately oil prices can influence economic growth. Similar to previous research about Nigeria's dependency on oil, this study has found the existence of a significant and positive relationship between the two variables. In doing so, this research provides consideration for the Nigerian government for increase production in non-oil sector and diversify and industrialize its economy.

Similar studies in the past have discussed oil dependency and its effect on Nigeria's economic growth, which have provided evidence that there is indeed a relationship between the two. However, those studies did not clearly emphasize the importance of diversification and industrialization; hence there is a gap to be filled by this research. The author believes that the discussion about oil dependency and economic growth is most useful when discussed with diversification and industrialization.

This study has explored the study on resource based growth emphasizing the need for diversification and industrialization. This analysis has assessed how international oil prices and the volatility of oil prices affect Nigeria's economic growth. Therefore, this research adds more literature to understand the influence of global commodity prices and economic growth in country's with resource based growth strategies. This provides a consideration for policy studies to promote economic diversification and industrialization.

Keywords

Chapter 1: Introduction

1.0 Background

Nigeria is a natural resource rich country inhabited by an estimated 167 million people and a land area of around 924 thousand square kilometres. It is situated in West Africa surrounded by Cameroon to the east, Benin to the west, Niger to the north and Gulf of Guinea to the South. It is considered the second largest economy in Africa[1] and largest oil producer in Africa (OPEC 2012).

The country's primary productive base includes the production of agriculture, crude oil and other hydrocarbons and is said to account for more than 90 per cent of foreign exchange and 75 per cent of employment (NPC 2). In the last five years, Nigeria's economy grew by an average of 7 per cent[2] and is primarily driven by the oil sector which accounts for more than 30 per cent of gross domestic product and 70 per cent of all exports. According to OECD, in 2011, mining and quarrying (including oil) accounted for 33.5 per cent of total GDP. Despite the oil sector's dominance, agriculture is also an important contributor to the economy accounting for 35.2 per cent of GDP in 2011(OECD 2).

Figure 1: Nigeria GDP Growth and Oil Price Shocks (1961-2011)
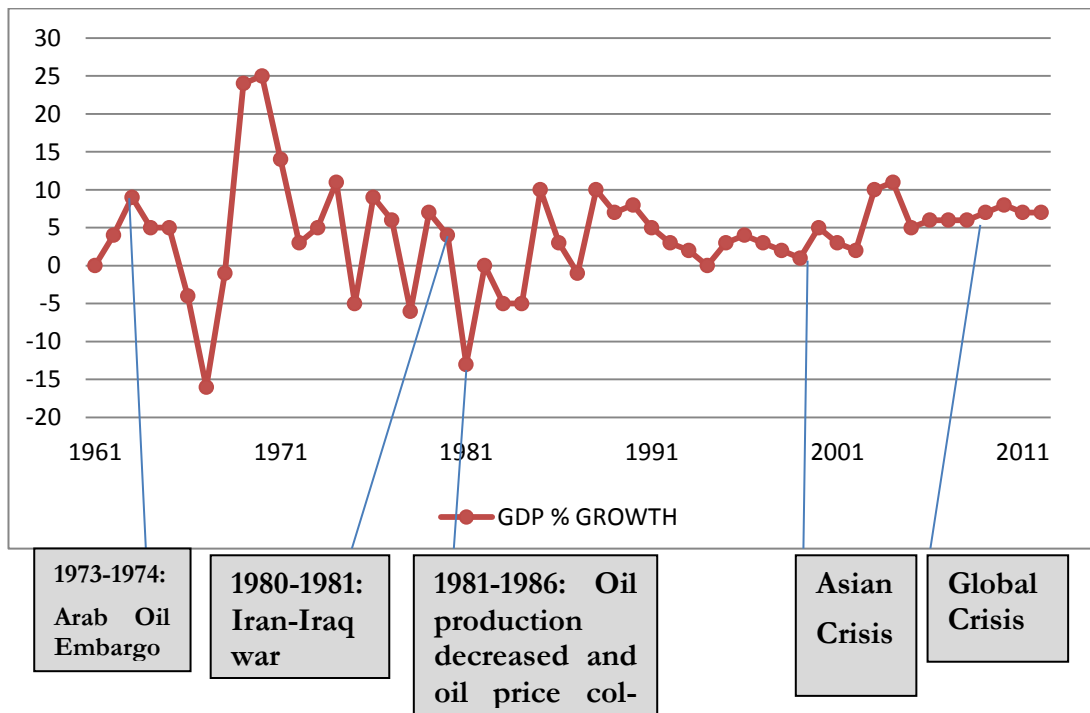
Source: World Bank

In the last five years, GDP has shown very impressive growth with a growth rate of 7.43 per cent in December 2011 and 6 per cent in 2012 (FSDH

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[1] Second to the South African economy

[2] See Figure 1

2). This growth rate makes Nigeria one of the fastest growing economies in the world despite the lack of infrastructure and economic development. While oil and agriculture are the primary contributors to the increased growth, the non-oil sector including telecommunications has showed explosive growth (FSDH 2). Nevertheless, oil continues to account for more than 85 per cent of all exports each year. In 2011, fuel exports were 89 per cent of all merchandise exports. And as Figure 2 illustrates, fuel rents have remained noticeably high and volatile. As an oil dependent country, the volatility of the oil sector greatly affects Nigeria's government revenue which coincidently determines the extent of the fiscal policy.

Figure 2: Oil Rents as Percentage of GDP

Source: World Bank
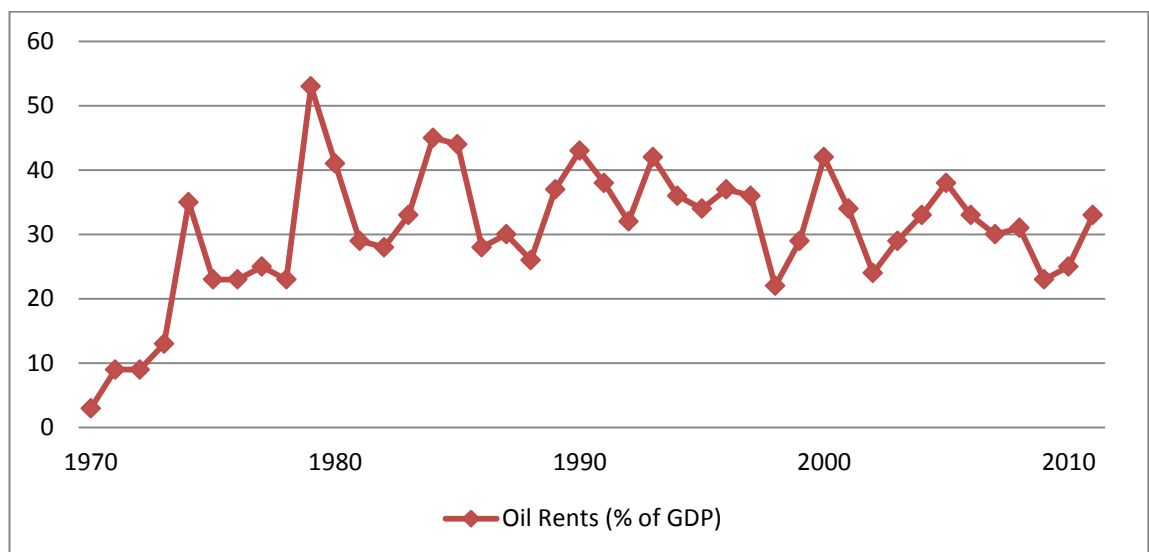
With Nigeria's rapid growth currently becoming stagnant at around 7 per cent and oil prices which continue to be volatile, there is much discussion on the topic of what can be done to ensure continuous growth regardless of the global market. This volatility has come from international shocks caused by financial crises, strikes, wars and decreased oil production. It is because of this volatility in oil prices and Nigeria's dependence on oil that many economists raise concern about the future of the economy. As alternative fuels become more popular and oil importing countries continue to discover oil deposits, there is a need for the Nigerian economy to look to other, more manageable sources of foreign exchange and government revenue to spur economic growth.

1.1 Problem Statement and Justification

It is estimated that Nigeria has 37.2 billion barrels of oil reserves (as of 2011) and produces an average of 2.13 million barrels per day (EIA 2013). The hydrocarbon sector also accounts for more than 75 per cent of the federal government's revenue. This suggests that Nigeria is heavily dependent on the oil sector for the majority of government spending, infrastructure and most economic development activities. With the increasing volatility of oil prices, the discovery of oil in other parts of the world and the instability of the global

economy, oil imports from Nigeria to major economies such as the United States has steadily decreased. The U.S once imported 9-11% of its crude oil from Nigeria but in the first half of 2012, the share of imported oil from Nigeria to the U.S has dropped to 5% (EIA 2013).

The resource based growth strategy followed by Nigeria and many developing countries with an abundance of natural resources appear to not be working. Most Latin American and African countries still struggle to develop, while developed countries follow industrialization strategies which have led to economic growth. The issue of Nigeria's oil dependence is closely related to the issue globalization and commodity prices. While globalization is inevitable, Nigeria and other such countries must find ways to protect its economy from the global shocks including commodity pricing shocks not controllable by the domestic market.

1.2 Research Question and Objective

The following main research question will guide the research process:

What is the effect of oil dependency on Nigeria's economic growth?

Sub-research questions include:

- What has been the basis for Nigeria's recent high growth rate?

- What has been the basis for Nigeria's volatile growth rates?

- Does a resource based growth strategy lead to sustained economic growth?

- How has global oil prices impacted economic growth in Nigeria?

The objective of this study is to examine the role Nigeria's dependency on oil and economic growth.

1.3 Hypothesis

Nigeria's oil dependency will continue to cause volatile growth in Nigeria's economy. Oil dependency will not lead to sustained economic growth, therefore Nigeria must industrialize.

This research intends to argue that:

- Oil dependency is the main cause of Nigeria's volatile economic growth rates

- Nigeria's volatile and rapid growth can be attributed to the volatility of global oil prices set by the market

- Nigeria's economy is dependent on oil rents and revenue

- Oil dependency as a growth strategy is not sustainable

- Diversification and industrialization are necessary for sustained growth of Nigeria's economy

1.4 Methodology and Limitations in carrying out the research

The research will utilize qualitative and quantitative data but will be rooted in a quantitative approach focusing on macroeconomic data from 1960 to 2012 which relate to the topic of discussion. No econometric methods are used for the research.

The author will use an exploratory data analysis (EDA) approach. EDA is appropriate for both quantitative and qualitative data because it allows the author to summarize the important characteristics of country's economy. This approach also allows the author and readers to gain insight into data in a clear and concise manner and extracts the most important factors from the data. The author believes EDA, not econometrics is the best tool for the research topic.

Quantitative secondary data will be collected from international and national data sources including:

- World Bank
- Transparency International
- Nigeria National Bureau of Statistics
- Central Bank of Nigeria
- United Nations
- National Planning Commission
- Nigerian National Petroleum Corporation
- Organization of Petroleum Export Countries

Many limitations surfaced during the research of this topic. Macroeconomic data was not always available for certain years. This may be due to the lack of data collection and lack of an institutional body to record the statistics prior to 1970. However, in some cases, data was available from 1961 onwards. Because of this limitation, the author was unable to analyze the research question prior to 1960. Also, the author used data from Transparency International but finds their methodology in calculating corruption to be very flawed. However, it is important to note that the author still used the data in the research but cannot confirm the validity of Transparency International's practices.

1.5 Organization

The paper is organized as follows:

- Chapter two reviews the literature from mainstream and structural economists on topics of natural resource dependency, economic growth and industrialization which is directly related to the topic of the paper. The result of the literature review is synthesized into a brief summary.

- Chapter three gives an overview of the Nigerian economy and an overview of the natural resource and industrialization based policies which were meant to promoted economic growth and development.

- Chapter four analyzes the macroeconomic data available for Nigeria regarding GDP, oil prices and manufacturing. The chapter also includes a country comparison of Nigeria with Indonesia and United Arab Emirates.

- Chapter five presents the conclusion and recommendations.

Chapter 2: Literature Review

2.0 Overview

In this chapter, I will discuss two views on resource dependency and economic growth. Mainstream economists believe that in order for a country to experience economic growth, they must continue to produce and trade goods in which they have a comparative advantage. Within mainstream economics, there are new institutional economists who also believe in comparative advantage but associate low growth rates to institutional failures. The final view discussed in this section is presented by structural economists who believe that diversification and industrialization, not resource dependency will lead to rapid growth.

2.1 Literature Review

The phenomenon of slow growth in underdeveloped countries remains a topic researched by many economists over the years. It is this phenomenon that has caused economists to take sides on understanding as well as solving the problem of poor growth. While Adam Smith, David Ricardo and mainstream economists argue the doctrine of comparative advantage, structural economists argue against comparative advantage and in favor of diversification and industrialization. This literature review will cover previous studies by mainstream economists that reference comparative advantage according to the Heckscher-Ohlin model of factor endowment. This literature will also examine new institutional economists who believe in comparative advantage but focus on the role of weak institutions, rent-seeking and corruption. The literature on structural economists will focus on the effects of commodity price volatility, volatility of terms of trade and specialization on growth.

2.1.1 Mainstream economists view on resource-based growth

Mainstream economics argues that countries should produce and export according to their comparative advantage. The theory of comparative advantage suggests a country gains the greatest economic benefit relative to other countries by producing at lower overall cost commodities which a country has in abundance or can be easily produced. Other trading countries will therefore benefit if they accept the cost advantage of the trading country and focus on producing a commodity in which they have an advantage. It is this theory which guides mainstream economists belief in free trade, specialization and the international division of labor. This is their reasoning behind why some countries produce agricultural and mineral commodities while others produce industrial goods (O'Toole 2007:620).

The doctrine of comparative advantage according to the Heckscher-Ohlin (HO) theory states that countries produce and export the commodities which requires the use of its abundant productive factors intensely (Feenstra 2003: 32). This model is based on two countries, two goods and

two factors and assumes that both countries have identical technologies, identical tastes, free trade in goods and different factor endowments (Feenstra 2003: 31). As long as two countries have different factor endowments, they will benefit from trade. It is the difference in factor endowments that leads to specialization and exporting goods in which a country has a comparative advantage. Mainstream economists believe that this process allows for efficient use of resources which lead to more gains from trade (WTO 2010). Heckscher and Ohlin proposed that countries with an abundance of capital would export capital intensive goods and import labor intensive goods, while countries with an abundance of labor would export labor intensive goods and import capital intensive goods (Clarke et al. 2009: 114).

Many economists including Leontief (1953), Trefler (1995) and Davis and Weinstein (2001) have attempted to explain the HO theory of comparative, however, most tests have performed poorly. Nevertheless, economists continue to test the theory adjusting for different variables which improves the results of comparative advantage.

Leontief (1953) studies the U.S economy in order to prove the doctrine of comparative advantage. He utilized U.S. economy data on input-output accounts and U.S trade data from 1947 to evaluate the Heckscher-Ohlin-Samuelson (HOS) model (Feenstra 2003: 35). He first measures the labor and capital used directly and indirectly in each exporting industry in order to determine the amount of labor and capital required in the production of one million dollars of U.S exports and imports (Feenstra 2003: 36). Leontief finds that each person employed works with $13,700 worth of capital in producing the exports and each person employed works with $18,200 worth of capital in producing the imports. Although the U.S was capital abundant in 1947, Leontief's findings appear to contradict the HO theory and his study would come to be known as the Leontief Paradox (Feenstra 2003: 36). However, Stern and Maskus (1981) reconstructed Leontief's model accounting for natural resources. The labor intensive commodities Leontief included in his test were actually natural resource intensive commodities; therefore the Leontief Paradox was solved (Clarke et al. 2009: 117).

A further study of the HO model in the context of natural resources was devised by Kemp and Long (1984). They ran a three scenario test and in the first scenario, the good is produced by only exhaustible resources, the second scenario, the good is produced by one exhaustible and one non-exhaustible resource and in the third scenario, the good is produced by two non-exhaustible resources and an exhaustible resource. They found that countries which are well endowed in exhaustible resources will specialize in that resource sector and produce goods related to the resource. This finding infers that trade is still driven by comparative advantage and the differences in factor endowments (World Trade Report 2010).

Clarke and Klkarni (2009) used data from Asia to test the validity of the HO model. Singapore which is a capital abundant country is compared with Malaysia a relatively labor abundance country with little capital. Clarke

et al.'s aim was to find out if the exports of both countries are what one would expect based on the HO theory (Clarke et al. 2009: 123). They hypothesize that the capital abundant country will export more capital goods and the labor intensive country will export more labor intensive goods (Clarke et al. 2009: 114). Data is collected from United Nations Comtrade regarding traded commodities between the two countries in 2007 (Clarke et al. 2009: 123). When comparing the data between the two countries, they find that Singapore's exports are relatively capital intensive in comparison to Malaysia's exports which are relatively labor intensive. However, when looking at the ratios, they find that capital intensive exports were 32 per cent of all Singapore's exports which is relatively low by HO theory standards. However, Clarke et al. still concludes that the Singapore-Malaysia trade in 1997 behaved according to the theory of comparative advantage and therefore they will both experience growth (Clarke et al. 2009: 127).

Wood and Berge (1997) argue that the deciding factor between whether a country exports manufactured or primary goods depends on the amount of skilled labor relative to natural resource endowment (Berge et al. 1997: 35). They raise the question of why East Asia has grown so rapidly with manufacturing but Africa has performed poorly producing primary goods and concludes that the difference does not stem from the composition of exports but the availability of human capital and natural resources. They test their hypothesis using the HO model but replace the variables capital and labor with skill and land (Berge et al. 1997: 36). The model is estimated using trade data from the UNCTAD Handbook of Trade and Development Statistics. Skill is measured by years of schooling and natural resources are measured by land area divided by adult population (Berge et al. 1997: 42). According to Berge et al., a country with an abundance of natural resources and unskilled labor will produce labor intensive goods. Because the skills needed for manufacturing is greater than for primary goods, in a country with a low skill/land endowment ratio, the comparative advantage lies in agriculture and resource extraction (Berge et al. 1997: 38). Berge et al.'s findings suggest that there is a cross-country correlation between development and export composition. However, they also find that manufacturing exporters grow faster than primary good exporters. But they attribute this correlation on the importance of skill as a determinant of comparative advantage (Berge et al. 1997: 54).

Literature on comparative advantage and the HO model attempts to show evidence that growth is dependent on a country's comparative advantage. For mainstream economists, as long as developing countries continue to produce and export the commodities in which they possess and can produce intensely, a country will inevitably grow. However, many questions are raised by economists on the literature of comparative advantage because markets and information are not perfect as most of the previous studies assume. In addition, many of the studies on comparative advantage perform poorly unless altered to include other variables.

The next section discusses the literature by new institutional economists who account for the role of institutions as the key to economic growth and acknowledge that markets and information vary.

2.1.2 New Institutional Economics

New institutional economics (NIE) is a sub group of mainstream economics which suggests that mainstream economists assumptions of perfect information, no transaction costs, perfect competition and unbounded rationality are not always valid. NIE instead studies the written and unwritten rules and laws which govern society and government and are meant to control society and reduce uncertainty. They assume individuals do not have perfect information and due to their limited mental capacity create formal and informal institutions to reduce the risk of uncertainty and transaction costs. Individuals develop systems of organization to motivate agents. Therefore, the performance of the economy is dependent on the formal and informal institutions (Menard et al. 2008 : 1). While mainstream economics focus on prices and outcome, NIE considers the effect of institutions. According to NIE, transaction costs are dependent on the institutional setting; therefore, the political institutions are influential in rules, laws and contracts (Menard et al. 2008: 4). However, both NIE and mainstream accept the assumptions of competition and scarcity (Menard et al. 2008: 2).

NIE attempts to answer the question surrounding the inability of countries to foster sustainable growth and looks to the role of institutions for the answer. According to NIE, countries with high transaction costs have less trade, specialization, investment and productivity (Shirley 2008: 613). In the following section, I look at NIE literature which aims to explain the underdevelopment of resource abundant countries which according to mainstream economists are ideally supposed to grow faster than resource poor countries. However, this has not been the case. As Sachs and Warner (1999) points out, per capita income of resource poor countries grew three times faster between 1960 and 1990 than resource abundant countries. NIE ultimately believes that the quality of institutions will fundamentally determine the countries which experience good economic growth and the countries which do and not (Frankel 2010: 15).

Sachs and Warner (1997) provide empirical evidence to explain the slow growth in Sub Saharan Africa from 1965-1990. They hypothesize that factors such as geography, economic policy, demography and initial conditions all explain the growth in Africa in recent decades (Sachs et al. 1997: 2). Therefore they run regressions using a variety of variables as determinants of growth and estimate a variety of factors which were shown to influence growth in Africa. Natural resource endowments were found to correlate with slower growth as the work from Sachs and Warner (1995) also showed. The regression showed that as natural resource exports increased GDP by .1, growth was projected to decrease by .33 percentage points annually (Sachs et al. 1997: 14). Government savings was also estimated in the regression and found to have a positive correlation with growth. And lastly, the authors find that the institutional quality index is significant to growth in each regression (Sachs et al. 1997: 15). The index is comprised of

five sub-indexes which include the rule of law index, bureaucratic quality index, corruption in government index, government repudiation of contract index and risk of expropriation index (Sachs et al. 1997: 7). The regression shows that as the institutional quality index increases by one unit, the annual growth rate will increase also by .28 per cent (Sachs et al. 1997: 15). Their findings suggest that the poor quality of the institutions and policies in Africa explain much of the slow growth. However, Sachs and Warner believe this is a problem which can be solved (Sachs et al. 1997: 2).

Mehlum et al. (2006) agrees with Sachs and Warner and argues that the natural resource curse only applies to countries with weak institutions. They use data from 87 resource abundant countries with more than 10% of their GDP from resource exports and their average yearly growth from 1965 to 1990 (Mehlum et al 2006: 1). They hypothesize that natural resource abundance is only harmful for economic development in countries with institutions which are 'grabber friendly'. Grabber friendly institutions have competing production and rent-seeking activities while producer friendly institutions have complementary production and rent-seeking activities. They test their hypothesis using the same data and methodology as Sachs and Warner. The dependent variable is GDP growth and explanatory variables include initial income level, openness, resource abundance, investments, and institutional quality (index which ranges from zero onwards) (Mehlum et al 2006: 12). They run a series of regressions including the interaction term:

resource abundance x institutional quality

The regression shows that the interaction term is significant and strong meaning that the resource curse weakens as the institutional quality increases (Mehlum et al., 2006:13). They conclude that the divergence in growth losers and growth winners results from the quality of institution.

Another study by Robinson et al. (2006) argues that the impact of resource booms is largely dependent on the political incentives generated from the resource endowments. To prove their hypothesis, they set up a two-period probabilistic voting model with two parties. The first period included elections at the end of the period (Robinson et al. 2006: 451). The idea is that the incumbent politician seeking re-election must decide if to extract resources and how to redistribute rents to secure re-election votes through patronage (Robinson et al. 2006: 452). Results from the study show that in the presence of a permanent resource boom it becomes more valuable for the politician to remain in power in the future therefore leading to increased efficiency of the extraction path (Robinson et al. 2006: 458). They conclude that the choice chosen is determined by the quality of institution which governs the resources.

Bhattacharyya et al. (2010) investigate the relationship between natural resources and corruption and the effect of the quality of democratic institutions on the relationship. They present a game-theoretic model with one economy with an incumbent president and challenger. In equilibrium, a bad challenger is able to mimic a good incumbent only in the presence of

good democratic institutions. The larger the difference in probability, the better the democratic institution (Bhattacharyya et al. 2010:608). They test their claim using panel data from 1980-2004 for 124 countries. Corruption, natural resource, income and democracy are variables included in the model (Bhattacharyya et al. 2010:612). They first find that resource rents have a statistically significant negative effect on natural resources and income. This suggests that natural resources relate to high levels of corruption (Bhattacharyya et al. 2010:613). They then add an interaction term including lagged democracy measure and resource rents to estimate if corruption is effected by the quality of democratic institution. They find that resource rents lead to corruption unless the democracy score is above .93 and a POLITY2 score of 8.6. They confirm their findings by showing that in 2004, Bolivia and Mexico had a POLITY2 score of 8 while Botswana had a POLITY2 score of 9 (Bhattacharyya and Hodler, 2010:614).

Lane and Tornell (1998) study economic growth, legal and political institutions and multiple powerful groups in their growth model. They argue that the combination of weak institutions and fractionalization leads to rent-seeking behavior and poor growth performance (Lane and Tornell 1998, 22). They consider a two-sector growth model with a formal sector which is efficient and an inefficient shadow sector. This represents what likely happens in most economies. The formal sector is taxable while the shadow sector is not taxed (Lane and Tornell, 1998:25).

Another study by Hodler (2006) argues that fighting activities (including rent-seeking) between multiple rival groups leads to unproductive activities and therefore slow growth. He sets up a model to analyze natural resources and fractionalization and its effects on property rights and incomes (Hodler 2006:1370). Natural resources are measured by World Bank proxies and "the share of natural capital in the sum of physical, human and natural capital as a proxy for per capita natural resources" (Hodler, 2006:1375). Fractionalization is measured by the index of ethnic fractionalization as a proxy for the number of rival groups. Property rights are measured by the Heritage Foundation and the Fraser Institute indices of economic freedom (Hodler 2006:1376). Hodler's findings show that as ethnic fractionalization increases, the income effect on natural resources decreases (Hodler 2006:1382).

Auty (2007) developed the staple trap model and the theory of rent cycling. Auty argues that natural resource rich economies experience economic growth when resource rents are recycled back into efficient, productive activities and not concentrated within a group of political agents (Auty 2007: 9-10). He further argues that resource poor countries have low rents, which forces the government to focus on wealth building activities, whereas governments in resource rich countries are focused on rent seeking. The redistribution of rents between political agents causes resource rich countries to depend longer on primary good exports than resource poor countries. This effect delays a resource rich country's ability to diversify and industrialize (Auty 2007: 9-10).

The literature by new institutional economists varies in the way in which evidence is presented; however they all agree that the role of institutions is imperative. They attribute the lack of economic growth in developing countries to the weak institutions governing the countries. For new institutional economists, countries with strong institutions should have a positive growth rate. However, countries such as Nigeria, Indonesia and much of Latin America have experienced rapid growth in recent years but are considered to have very corrupt governments. The next section discusses the literature of structural economists who argue against both mainstream and new institution and focus on industrialization.

2.1.3 Structural Economists view

Structural economists promote the idea of industrialization and less reliance on the production of primary products (O'Toole 2007: 422). They refute many of the claims of mainstream economists. In comparison to mainstream economists, structural economists believe that the economy is influenced by power and politics and markets were controlled by the elite who did little to create growth. Similarly while mainstream economists argued for free trade, structural economists argue that free trade leads to high development in the center (developed countries) while harming less developed countries. As a solution to free trade, structural economists encourage developing countries to trade among themselves in order to reduce reliance on industrialized economies. The underlying theme of structural economics is the notion that developing countries are all characterized by free market failures therefore there is a role for the state to play to ensure development (O'Toole 2007: 426).

Prebisch and Singer (1950) focused on diversification into manufacturing as the key to growth. They argue that mineral and agricultural good prices follow a downward pricing trend in the long-run compared to manufactured goods. The idea behind this hypothesis is that the demand for primary goods is inelastic but relative with household income. As household income increases, the demand for manufactured goods becomes more elastic and rises more rapidly than primary goods demand and primary goods as a share of GDP will diminish (Frankel 2010: 5). Therefore countries relying on primary goods grow slower than countries which rely on manufactured goods. Prebisch and Singer therefore recommend closing ones economy to fully develop the manufacturing industry (Polterovich et al. 2010: 3).

For Prebisch and Singer and all structural economists, diversification is key to growth but diversification into manufactured goods will lead to long run sustainable growth. While the rapid growth in East Asian countries has been associated with the regions transformation from a primary commodity exporter to industrial sector exports, countries in Latin America and Sub Saharan Africa have not moved towards manufacturing and are primarily still resource based economies (Gelb 2010: 1). Gelb (2010) looks at the arguments surrounding why resource abundant countries especially rich in minerals should diversify when they have a comparative advantage in a commodity. He looks at a study by Hesse (2008) who provides empirical

evidence that diversified economies perform better in the long run. He argues that export diversification can solve the problems of commodity dependent countries who often suffer from export instability as a result of inelastic and unstable global demand (Hesse 2008: 1). Hesse sets out to test the relationship between export diversification and GDP per capita growth. He estimates an augmented Solow growth model with a data set of average export concentration and cumulative GDP per capita growth (5 year intervals) from 1961-2000. In a scatter plot, he finds that many of the East Asian countries appear in the lower right corner and therefore have relatively low levels of export concentration while poor growth performers appear in the upper left corner and have high levels of export concentration (Hesse 2008: 10). When he excludes OECD countries and includes an openness variable to capture total trade relative to GDP, export concentration has a robust negative effect on GDP per capita growth and countries which have diversified in the past decade experienced higher per capital income growth (Hesse 2008: 11). After testing for non-linearity between the two variables, Hesse finds that the effect of export concentration is more nonlinear for poorer countries than richer countries (Hesse 2008: 12).

Economists have also sought to study the negative relationship between resource dependence and economic growth. In the example of Lederman and Maloney (2007) who studied the relationship between natural resource exporters and GDP per capita between 1980 and 2005 to measure the relationship between resource dependence and economic growth. They find that GDP per capita grew slower in natural resource exporters than in natural resource importing countries (Gelb 2010: 7). One interpretation of this could be that countries which specialize in mineral resources such as oil find it difficult to diversify into other products due to the capabilities required for oil production which requires different capabilities than most other products (Gelb 2010: 8).

Other structural economists argue that commodity price volatility is a cause for the volatile growth and once again argue that diversifying outside of natural resources will help growth problems. Blattman et al. (2007) argued that it is commodity price volatility not commodity price trends that causes low growth in commodity dependent economies. Price trends and volatility of primary commodities explain the divergence of global income. The instability of income causes internal instability, reduced investment and diminished economic growth (Blattman et al. 2007: 160). Another argument comes from Eichengreen (1996) who argues that negative trends and volatility of terms of trade creates cycles of current and capital account shocks leading to poor growth and financial crisis. (Blattman et al). Price shocks cause capital inflows to decrease leading to reduced interest of foreign investments (Blattman at al 2007: 158).

Structural economists argue against many of the assumptions of mainstream and new institutional economist but do not disagree with the importance of institutions. However, this literature focuses on their argument for industrialization and manufacturing as the solution to poor growth. For structural economists, resource based growth strategies will lead to poor grow. It is necessary for countries to industrialize and diversify its economy

into manufacturing sector in order to ensure sustained economic growth. They emphasize the importance of sustained growth and admit that only in the short run can growth be achieved through resource dependency. However, similar to other doctrines, there are economists which question the importance of manufacturing but agree in the necessity of industrialization. Yet, most of the developed countries which have rapidly grew because of their commitment to industrialization and manufacturing.

Chapter 3: Overview of Nigeria's Economy

3.0 Introduction

This chapter gives an overview of Nigeria's economy from independence until the present. The first section will discuss the structure of the economy and development changes within the country and includes a discussion on some of the challenges faced by Nigeria's economy. Section two discusses the development policies established by Nigeria in past years. Within section two, topics of discussion include Nigeria's national development plans established by the government to increase development and the policies established by the government to promote primary commodities and industrialization.

3.1 Structure of Nigerian Economy

Nigeria's economy can be described as a rapidly growing economy with an average growth rate of 7% in the last decade (World Bank 2013). According to Nigeria's National Bureau of Statistics, the GDP growth rate was 7.43% in December 2011 (FSDH 2013). This makes Nigeria the second largest economy in Africa and one of the fastest growing economies in the world. Primary production is oriented around agriculture, mining and quarrying (which include oil and gas) and accounts for more than 65 per cent of real gross outputs and more than 80 per cent of foreign exchange revenues in the year 2011 (National Planning Commission 2011). Within the non-oil sector, manufacturing and building and construction account for 4.14 per cent of foreign exchange and government revenue in 2011 (National Planning Commission 2011). Recently, the Nigerian economy which was once concentrated on primary commodities, saw growth in the non-oil sectors including services, real estate, housing and construction (World Bank 2013).

The service sector has grown rapidly in the last decade with the total share of GDP increasing from 25% in 2000 to 37% in 2011 (BNP 2012). While the performance of the service sector has been sizable, according to the National Planning Commission, the sector cannot be regarded as a significant influencer of the economy. However within the service sector, the major driver of growth has been the telecommunications sector which experienced the fasted growth in shares of GDP jumping from 1 per cent in 2005 to 3 per cent in 2010 (National Planning Commission 2011). The wholesale and retail trade sector also experienced explosive growth contributing 18.81 per cent to the service sector in September 2012 (FSDH 2). The manufacturing sector contributed 3.96 per cent to Nigeria's GDP in 2009 and rose to 4.14 per cent (National Planning Commission 2011). In addition, real estate and housing/construction experienced rapid growth in recent years, but its share of GDP remain small (World Bank 2013).

Despite the growth of the service sector, the production of primary commodities has continued to dominate economic activities in Nigeria. The agriculture sector which includes crop production, forestry, livestock and fishery has accounted for most of GDP growth in the recent years (World Bank 2013). In September 2011, agriculture remained Nigeria's largest sector accounting for 42.62 per cent of GDP (FSDH 2013); however production levels remain low while growth has been triggered by expanding land. The sector remains primarily informal and production involves the use of simple technologies (NPC 2011).Oil, however, accounts for 95% of Nigeria's exports and 75% of budgetary revenues (World Bank 2013). In the recent years, the oil and gas sector has experienced a decrease in growth. From 2003 to 2011, the growth rate decreased from 23.9 per cent to -0.6 per cent (NBS 2012). The share of GDP also decreased from 25 per cent in 2005 to 16 per cent in 2010 according to the National Planning Commission (NPC 2011).

The manufacturing sector, which includes cement, iron, steel and oil refining, has been targeted by the Federal Government as a priority for many years. Secondary activities including manufacturing and building and construction, have contributed a mere 4.14 per cent to foreign exchange and government revenue (National Planning Commission 2011). According to the National Bureau of Statistics, the subsector accounts for about 10 per cent of total GDP annually and 12 per cent of the labor force in the formal sector (NBS 2010).

With more than 65 per cent of Nigeria's Federal-collected revenue coming from oil in the last decade, Nigeria's fiscal policy remains heavily influenced by the oil industry and its volatile movement. According to the IMF, beginning in 1970, Nigeria's revenue and expenditures followed a similar pattern to oil prices. In periods of high oil prices such as 1979-82, 1991-92, 2000-02 and 2005-09, revenue and expenditures also experienced sharp increases (IMF 2003). Consequently, when oil prices subsided after the booms, Nigeria's revenue decreased as well. Figure 3 illustrates the trend of Nigeria's fiscal policy from 2003 to 2011. From 2005 to 2008, oil prices increased rapidly which led to increased revenue and expenditures for Nigeria's government. The global financial crisis in 2009 led to a fall in global oil prices which caused Nigeria's government revenue to fall accordingly.

Figure 3: Fiscal Trends: Nigeria 2003-2011
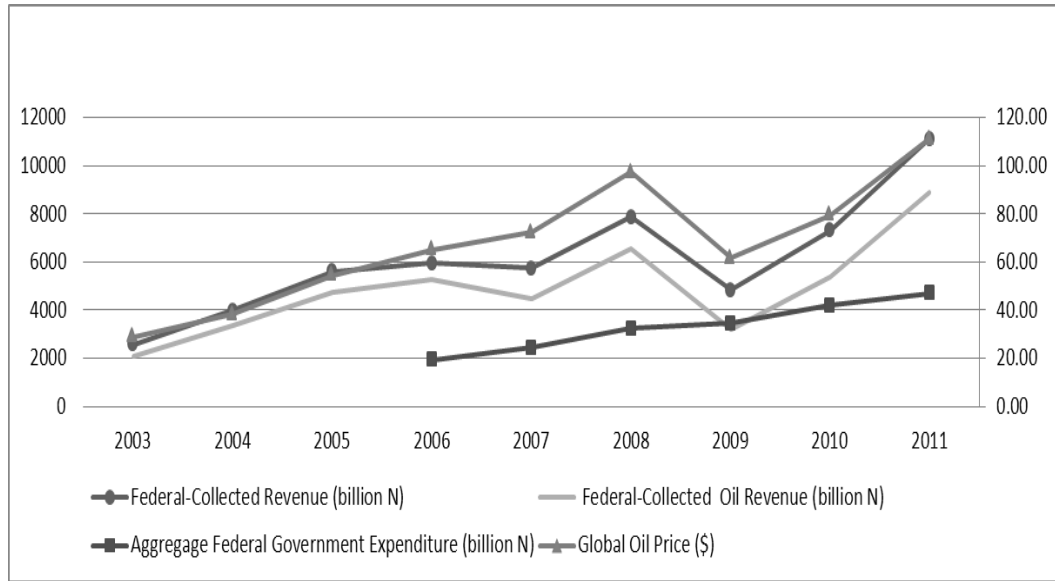
Source: CBN Annual Reports 2007-2011

The composition of Federal-collected revenue showed that oil revenues accounted for the majority of Federal revenue between 2003 and 2011. Figure 4 shows the volatility in Federal-collected revenue from 2003 to 2011. In the same time period, Federal-collected revenue increased more than 400 per cent to N11,116.8 billion by 2011. However, the majority of revenue derived from oil revenue which includes revenue from crude oil and gas exports, petroleum profit tax and royalties and domestic crude oil sales. On average, from 2003 to 2011, oil revenue accounted for 80 per cent of all Federal-collected revenue annually. Non-oil revenue which includes customs & excise duties, Corporate Tax, NITDF, education tax, FG industrial Revenue and VAT, although small relative to oil revenue increased from year to year but not considerably.

Figure 4: Federal-Collect Revenue from 2003 to 2011
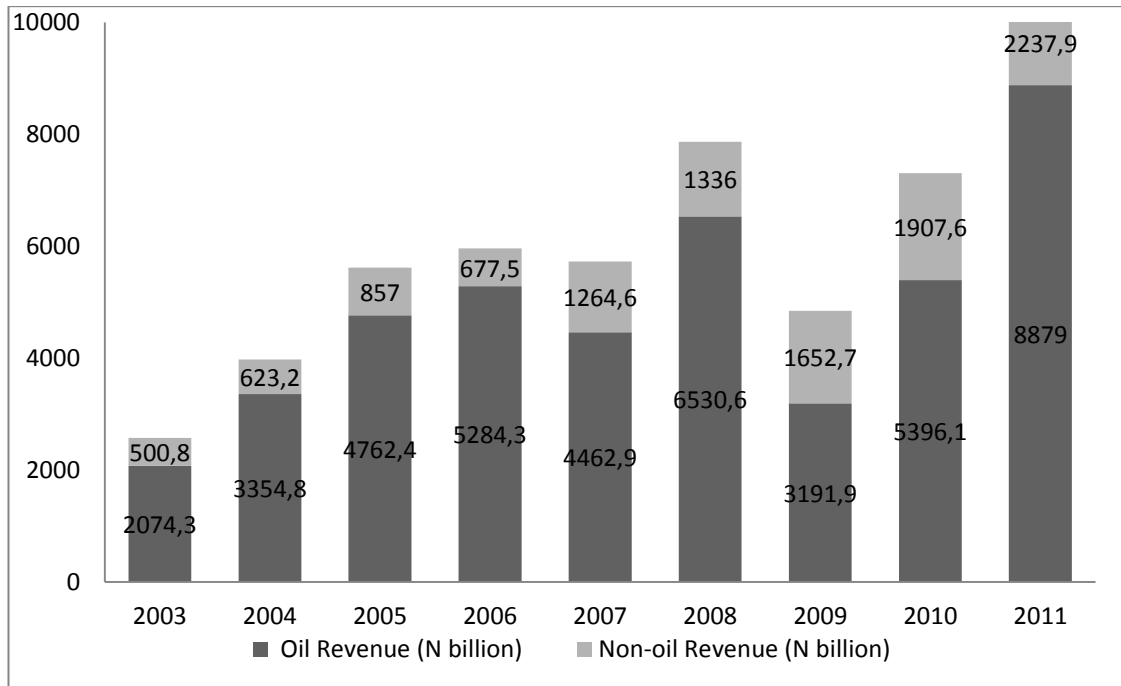
Source: CBN Annual Report 2006, 2007 & 2011

The push for Nigeria's fiscal policy in the past decades has varied. However in the late 2000s, the National Economic Empowerment and Development Strategy (NEEDS) guided the fiscal strategies of the period. NEEDS was intended to address the country's infrastructure deficiencies, job and wealth creation and the Millennium Development Goals (MDGs), therefore much of the government budget each year was disbursed between health, roads, power, education, national security and water (CBN 2006). From 2006 to 2011, Figure 5 shows that much of the Federal Government revenue which is received primarily from oil is spent on the purchase of goods and services. This focus on goods and services can also explain the increase in services as a share of GDP in the past few years.

Figure 5:Allocation of Federal Government Expenditures (2006-2011)
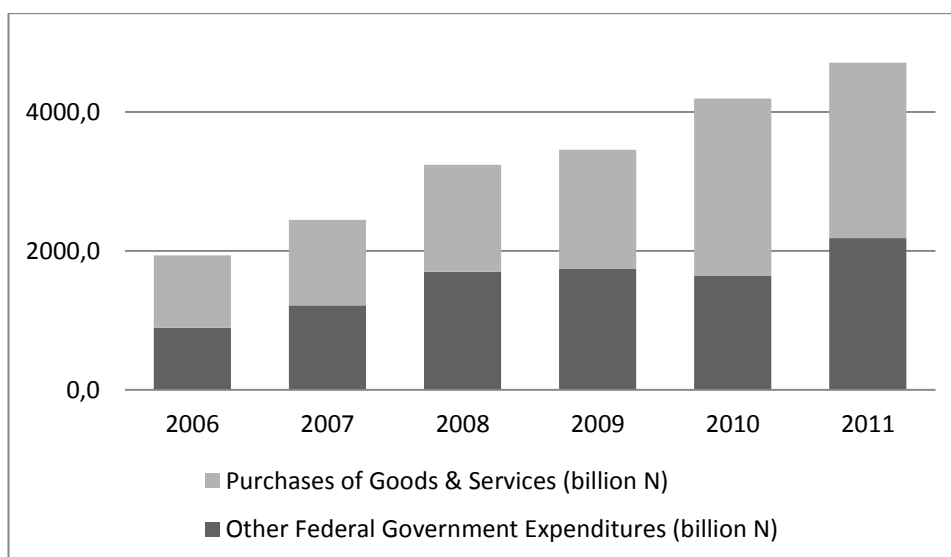
Source: CBN Annual Reports 2006-2011

3.2.1 National Development Plans

Development planning involves the participation of the government to develop objectives which sets forth the path for economic development within a country. It is a long term plan which aims to prompt structural change of an economy and the government intervenes to achieve set objectives (Ejumudo 2013: 70). Nigeria developed a series of four development plans between 1962 and 1985 which were intended to set clear objectives for accomplishing structural change within the economy including industrial development.

The social and political turmoil during the time of the First National Development Plan (1962-1968) led to an unsteady, yet positive expansion of the economy. The plan's aim was to create the conditions necessary to achieve an increase in the standard of living for all Nigerians (Ekundare, 1971: 149). And in doing so, the plan involved increasing development beyond the colonial plans, avoiding balance of payment problems, and on the economic side, the plan emphasized development in the agricultural, industrial, transportation and manpower sectors. The macro objectives included savings of about 15 percent of GDP by 1975, annual investment of 15 percent of GDP, minimum growth rate of 4% (GDP) and investment expenditure of N2.132 million. The objectives of this plan required the coordination of the public and private sector and federal and regional governments. (Ekhosuehi et al. 2013: 300).

Many accomplishments were made during this plan including the establishment of the Nigerian Industrial Development Bank, the Kainju Dam, the country's first oil refinery, sugar and paper mills and the Niger Bridge. However, the major industrial projects of the first development plan were not implemented and only 8.9 percent of the N1,307.8 budget was spent on industry. The sector was labeled in the plan as high priority, however the allocation of funds for the sector were relatively small compared to health and education. Also, the newly established industrial development bank which was meant to finance industries would not finance small unincorporated businesses (Eju-

19

mudo 2013:70-71). Conclusively, industrial development was not achieved during this period.

The Second National Development Plan (1970-1974) was formulated after the end of the civil war and coincided with the period Nigeria received the highest earnings from crude oil sales. With effects of the civil war very present in 1970, the aim of the second development plan was to reconstruct facilities damaged during the war, rehabilitate Nigerians displaced by the war, establish administrative services and economic infrastructure, increase growth rate per capita, create jobs, produce high level human capital, develop the rural and urban areas and increase social services for the people (Ekhosuehi et al., 2013:301). The second plan de-emphasized the industrial development emphasized in the first development plan.

The second development plan gave priority to the transportation sector. This sector was allocated 23.7 per cent of the public sector budget and 30.1 per cent of the Federal Government's budget. Industry and commerce received 6.5 percent of the plan budget. Although the Peugot Motor Car assembly plant and the Volkswago Plant were established during this plan, much of the production required the importation of materials as part of the import substitution strategy of the period. This resulted in the industry being dependent on the foreign market to sustain the industry (Ejumudo 2013:72).

By the end of the plan, many of the abandoned farms and plantations affected by the war had been rehabilitated and government-owned companies had been established in the area of business but industrial development had not been realized once again (Ejumudo 2013: 73).

The Third National Development Plan (1975-1980) also coincided with the oil boom and focused on agriculture, industrial development, infrastructure and social development. The objectives included research on agriculture and agricultural development schemes, livestock, electrification in rural areas, universal free primary education and construction of living units throughout the country (Ekhosuehi et al., 2013:302). Diversification of the economy was also included as a high priority. The plan was intended to be the framework for industrial development in Nigeria. The third development plan was roughly ten times the size of the previous plan and financial capacity was available to achieve the plan, however according to Ejumudo, sharing the oil money was of more importance to Nigerians than the actual promotion of development (Ejumudo 2013:73).

The third development plan was able to achieve free education and further indigenization of the economy. Industrial projects implemented included the Warn and Kaduna refineries and Ajaokuta Steel Plant and the sector was allotted 1.2 percent of the budget. However, the government spent over N900 million on importing consumer goods showing a lack of priority on the intended objectives (Ejumudo 2013: 74). Economic growth was achieved with an average annual GDP growth of 5 percent and the manufacturing sector averaged an annual growth rate of 18.1 percent (Ekhosuehi et al., 2013:303).

The Fourth National Development Plan (1981-1985) intended to further the framework of the economic and social development projects of the previous development plan and had a strong commitment to petroleum resources. The objectives of this plan included reducing unemployment, improving efficiency of government owned enterprises, development of small and medium industries, generating power supply, refinancing trade debts, increasing food, livestock and fish production and produce surplus to export and develop technologies (Ekhosuehi et al., 2013:303).

The fourth development plan allocated the greatest priority to industry, agriculture, manpower development and economic infrastructure. Industry was allocated 13.6 percent of the plan budget (Ejumudo 2013:74). However, with the fall of the oil prices, funds to implement the plan were not available. Thus, many of the projects included in the plan were either not completed or abandoned. Projects started during that time include the start of a new refinery in Port Harcourt, petroleum complexes and a liquefied natural gas plant (Ejumudo 2013:75). The fourth development plan indeed did not achieve much industrial development. It however, continued to emphasize the oil sector which had become the mainstay of the economy showing a lack of commitment to sustained development.

Overall, the development plans from 1962 to 1985 did not achieve many of the planned objectives. Apart from the second development plan which did not include industrial development as a priority, the development plans had strong objectives to improve and grow industries. Industrial strategies included in each plan lacked an implementation strategy. This suggests that the Nigerian government indeed knew the importance of industrialization but failed to take the necessary steps to achieve the goal. Nevertheless, oil revenue was shown to be the main financial driver of the plans which also affected the intensity of each plan. By the end of the last national development plan, industrial development and diversification of the economy had not been achieved. This may be due to the abundance revenue from oil which essentially blinded the government from seeing the advantage of industrialization. By the end of the development planning process, the country still depended heavily on agricultural and oil production.

3.2.2 Agriculture policies

Agriculture was the mainstay of the Nigerian economy pre-independence and pre-oil boom and has continued to be a significant export earner and employer in rural areas. Because the sector is still a significant contributor to the economy, the Nigerian government has established many strategies aimed at improving and increasing the production and supply of agriculture. Because they believed agriculture would lead to economic growth, Nigeria and international organizations pushed to increase agriculture for development.

Following its independence, Nigeria's first wave of agricultural strategies revolved around import substitution based growth (IFPRI 2010). In doing so, production was decentralized and states became essential in agricultural development. Agricultural development during this time involved marketing boards which extracted the surplus while cooperatives assisted in increasing food pro-

21

duction (IFPRI 2010). The main agriculture policy during this time was the National Accelerated Food Production Program (NAFPP). NAFPP was intended to make Nigeria self-sufficient in food production and called on land reforms and literacy policies for farmers to assist the goal of self-sufficiency (Olaoye 2010: 83). This was to be achieved with better marketing systems and more efficient use of farm inputs. The program was not successful (Avidor 1981:10). Agriculture as a share of GDP declined from 66 percent in 1959 to 50 percent in 1970 (IFPRI 2010).

The next wave of agricultural policies began during the oil boom (IFPRI 2010). The main policy of this time was Operation Feed the Nation 1976-1980 (OFN). OFN was intended to increase food production and increase the awareness of the people's knowledge of the food problems and need to be self-sufficient. The idea behind OFN was that national growth would increase with the availability of cheap food and increased nutritional levels (Olaoye 2010: 83). Implementation of OFN involved media outlets and youth projects to teach farmers. The policy was successful in increasing the public's awareness of the country's food problems (Avidor 1981:10). But with the volatility of oil prices and imbalance of revenue, imports increased and food imports grew rapidly. By 1979, food imports had increased from 73.67 percent in 1970 to 80.26 percent. A drought was experienced from 1972-1974 and a massive number of crops and livestock were lost (IFPRI 2010). An attempt was made by the government in 1978 to increase incentives for farmers to increase productivity and change land occupancy practices with the establishment of the Land Use Decree. The policy was not successful. Subsidies were also put on meat and food crops grown on government run farmers. The subsidy was only beneficial to middle-income consumers who could afford it (Avidor 1981:11).

Oil prices collapsed and the financial crisis began in the 1980s. The fall in oil price led to decreased government revenue which affected the growth of the agricultural sector. Structural Adjustment Policy (SAP) was implemented and was meant to stabilize the economy including the agricultural sector (IFPRI 2010). SAP did not prove successful in the agricultural sector.

Other agricultural policies included the Green Revolution Program (GRP) and Go Back to Land Program. GRP was drafted by Nigerians and the World Bank and intended to increase food production, decrease food importation and promote mechanized farming (Olaoye 2010: 83). GRP called for government spending on farming infrastructure, expanded cultivation area, increased water availability, farm inputs to be handled by the private sector and increase reliance on smallholders for food production (Avidor 1987:11). By 1983 another regime took power and the Go Back to Land Program was established to promote farming for all Nigerians (Olaoye 2010: 83). However, these agriculture programs did not boost development.

Today agribusiness appears to be the new frontier to improve economic growth within Nigeria's agriculture sector. After oil prices dropped in the 1980s, Nigeria established policies which were meant to increase local production of food imports through agricultural production and processing into raw materials. The government rationed out foreign exchange to industries with

import substitution value and made special tax terms for agro-processing investments (UNIDO 2012). Policies were also established to enable the inclusion of the private sector in agriculture, forming the environment for private sector agribusiness. This resulted in initiatives meant to link agriculture to trade including the Export Expansion Grant, Export Developing Fund and Export Processing Zones (UNIDO 2012). The agribusiness is also being promoted heavily by the IMF, World Bank and UN bodies for developing countries

Although the agriculture policies established over the years have not been successful, Nigeria's agriculture sector continues to heavily influence GDP and economic growth within the country. Noticeably, many of the policies did not emphasize the inclusion of production for trade until the rise of agribusiness. And agribusiness has become the country's new strategy towards growth and development. The country's comparative advantage in agriculture has remained the economic driver for policies on economic growth and has been further pushed by the recommendations of international bodies.

3.2.3 Policies towards Industrialization

Industrialization has remained a priority for the various administrations over the years. Consequently, the approaches taken towards industrialization have also varied leading to a range of results. In 1963, manufacturing contributed 5.6 percent to GDP and by 1967 GDP had risen to 8.4 percent although value added as a percentage of GDP had decreased. As expected industrialization increased during the oil boom but by 2000, value added as a percentage of GDP dropped to about 5 percent (Iwuagwu 2009:155).

Under the First National Development Plan, the Import Substitution Strategy (ISS) was established. This was a direct reaction to the introduction of mills for palm oil, cotton, groundnut, beer brewing and oil seeds during the end of the colonial rule. The strategy would require the importing of capital goods necessary for domestic production and manufacturing of consumer goods. The essence of this strategy was to lay a framework for the self-sufficiency of Nigeria's economy therefore about 13 percent of public investment was to be used for trade and industry. The investment would be used to establish an iron and steel complex, oil refinery, funds for participation in industries and the establishment of a development bank for industries (Iwuagwu 2009:157). This period had been deemed the golden age of industrialization in Nigeria because manufacturing grew from 5 to 6 percent of GDP and the amount of medium and large scale plants in the industrial sector grew from 150 in 1950 to 380 in 1965. However many of the objectives set in the policy were not achieved. Few industrial estates were built. Also, ISS had many implications for Nigeria including over-reliance on imports, over concentration on the second stage of production and protection for external competition leading to inefficiencies and a distorted market (Iwuagwu 2009:158). The oil refinery and iron and steel complexes required the use of natural resources for production. Therefore, the reliance on natural resources did not give way to industrialization.

The immense amount of oil revenue led to the shift from import substitution to government control of industries without private partnerships. The

government established heavy industries which required expensive maintenance. However, post-civil war, government policies focused on reconciling the people and reconstructing the infrastructure and economy. Industrial development post-civil war was focused on distributing industries evenly within the country, expanding and diversifying the industrial sector, job creation, promoting industries which had an international demand, increasing capital goods production and increasing indigenous involvement in the industrial sector in terms of manpower and ownership (Igwuagwu 2009:159). Investments were made in oil refineries, petrochemicals, natural gas, fertilizer, iron and steel, motor assembly and machine tools. Local manufacturing was discouraged as finished goods were imported and production required the use of natural resources (Iwuagwu 2009:160).

In 1972, the Nigerian Enterprises Promotion Decree was established to promote indigenization. Sections of the industrial sector were reserved for indigenous investment. This policy also led to the establishment of the Bank of Commerce and Industry whose role was to provide financing to indigenous entrepreneurs. Although this policy was meant to increase indigenous ownership within the industrial sector, the control of the companies rarely changed. The collapse of oil prices paralyzed the Nigerian economy leading to a shift in government priorities. Government reallocated resources and foreign exchange in a way which did not favor industries, therefore industries could not obtain import licenses to import the inputs necessary for production. Eventually, the over reliance of importation combined with the crash of oil prices led to debt problems (Iwuagwu 2009:161).

During the period of SAP starting in 1986, the focus was export oriented industries. This required the use of local materials rather than imported ones which contradicted the previous ISS strategy. In 1988, the government established an independent industrial policy strategy, "Industrial Policy of Nigeria: Policies, Incentives, Guidelines and Institutional Framework", which was included in SAP. This policy was intended to make industrial development a priority necessary for economic development (Iwuagwu 2009:162). This strategy involved privatization, the establishment of regulatory organizations and linking industrial policy at all levels of government. Initially, this industrial strategy led to a 12 percent increase in capacity utilization from 1986 to 1991. However, liberalization was a key component of industrial policies under SAP. This led to high interest rates causing inflation and decreased consumer purchasing. Industries were therefore forced to decrease capacity utilization and employees. Trade liberalization also led to unfair competition from Western and Asian countries and removed the protection local industries once received from the government (Iwuagwu 2009:163). To an extent, SAP led to the deterioration of Nigerian industries (Iwuagwu 2009:164).

In the 1990s, the government adopted the National Rolling Plans. Under the First Rolling Plan, the Industrial Master Plan was established. The strategy emphasized defining functions within the industrial system and creating an action plan with objectives and targets. Public enterprises were privatized and incentive packages were developed to encourage foreign investment (Iwuagwu 2009:164). During this time, many entrepreneurial and training programs were

developed including Entrepreneurial Development Plan and Working-for-Yourself Programs (.Iwuagwu 2009:165).

In 2003, the government enacted a new industrial policy which was meant to increase the value-added at each level of the value chain. The policy emphasized the increase of Total Factor Productivity (TFP) ensuring Nigerian resources would not be traded in its natural state. This was to be achieved by gaining the skills and knowledge from best practices. The government made steps to ensure goals were met by establishing partnerships with the private sector (165). The Bank of Industry (BOI) was developed as a financial institution for industries (Iwuagwu 2009:166).

By 2007, the cluster concept was established by the Federal Ministry of Commerce and Industry. The clustering concept was based on the idea that as long as Nigeria continues to have poor infrastructure, weak incentives, inadequate skills and poor capacity utilization, they would not be able to attract foreign direct investments. Therefore the idea was to cluster businesses in a community which would enhance the performance in the global market. Clustering was meant to focus resources for infrastructure and promote innovation, information transfers and inter-firm technology (Iwuagwu 2009:168).

The most recent industrialization strategies have come from the government's Vision 20: 2020 campaign which aims to make Nigeria one of the top 20 economies in the world by 2020. According to the National Planning Committee, the goal of the manufacturing sector is to establish "a technologically driven and globally competitive manufacturing sector, with a high level of local content and contributing more to National GDP' (NPC 2011).

Industrialization policies established by Nigeria post-independence have all been influenced by the economic and political situation of the country at that time and the global economy which is continuously evolving. However, many of Nigeria's industrialization policies did not have clear objectives for diversification and included resource based industries as a form of industrial development. Policies still followed a resource based growth strategy with little implementation of non-oil or non-agriculture industrialization.

Chapter 4: Analysis and Findings

4.0 Introduction

This chapter analyses the data on global oil prices, Nigeria's oil production, oil export revenue, GDP growth and manufacturing exports. The first section analyses to what extent does Nigeria's dependence on oil affect growth. The second section analyses the impact of institutions, more specifically the impact of corruption on economic growth. And the third section analyses the effect of the lack of industrialization on sustainable economic growth. The fourth section provides a case study on the economies of Indonesia and United Arab Emirates.

The data analyzed in this section is from 1990 to 2012. And was collected from both national and international sources. National sources include the Central Bank of Nigeria, National Bureau of Statistics and Nigerian National Petroleum Corporation. International sources include the World Bank, Transparency International and the Organization of Petroleum Exporting Countries.

4.1 Nigeria's dependence on oil

In this section, we examine Nigeria's dependence on oil. Because crude oil accounts for more than 80 per cent of all merchandise exports and has been a major stimulator of the economy for many decades, it is necessary to analyze the effects it has had on Nigeria's GDP. The purpose is to examine if the doctrine of comparative advantage is valid and can influence a country's economy. Figure 6 presents a graphical comparison of Nigeria's average annual GDP growth rates and average global oil prices between 1961 and 2010. In the 1960s global oil prices averaged about $1.80 per barrel and in the same period the average growth was 5.1 per cent. The 1960s also represented the period in which oil production had just begun therefore growth came primarily from the production of other primary commodities.

**Figure 6: GDP and Oil price**
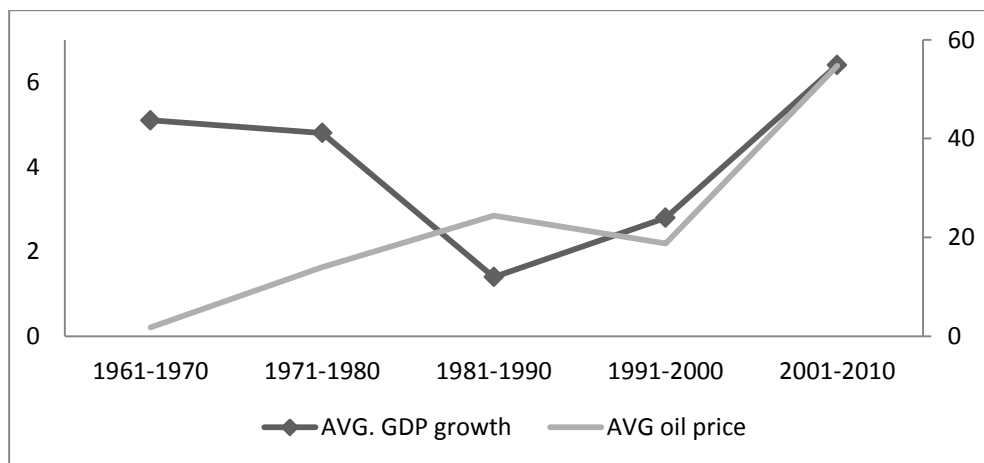
Source: World Bank and British Petroleum

However, by the mid-70s and onwards oil had become a staple for the economy and growth had begun to resemble the volatility of the oil market. This was also resembled in the fiscal policies discussed in Chapter 3. The availability of oil revenue often influenced the amount of money the government invested in development and other social projects. The result of Figure 6 suggests the hypothesis that oil dependency has a negative effect on economic growth. However to confirm the hypothesis, it is necessary to analyze the components of oil dependency to determine whether oil production or oil price correlates with growth.

Figure 7 illustrates the relationship between oil production in Nigeria and annual GDP growth rates between 1998 and 2012[3]. If you take a quick look at the graph there may appear to be a correlation between growth and oil production, however, the rate of change in oil production and GDP growth during that time period did not have a positive correlation. Between 1999 and 2012, when oil production levels decreased, GDP changed at a positive rate. In 2002, when production dropped by 15.96 percent points, GDP experienced an increase of over 20 percent points. And after the global crisis in 2009, Nigeria's GDP decreased by 18.6 percentage points while production continued to increase.

Figure 7: Rate of change in oil production and GDP 1998-2012
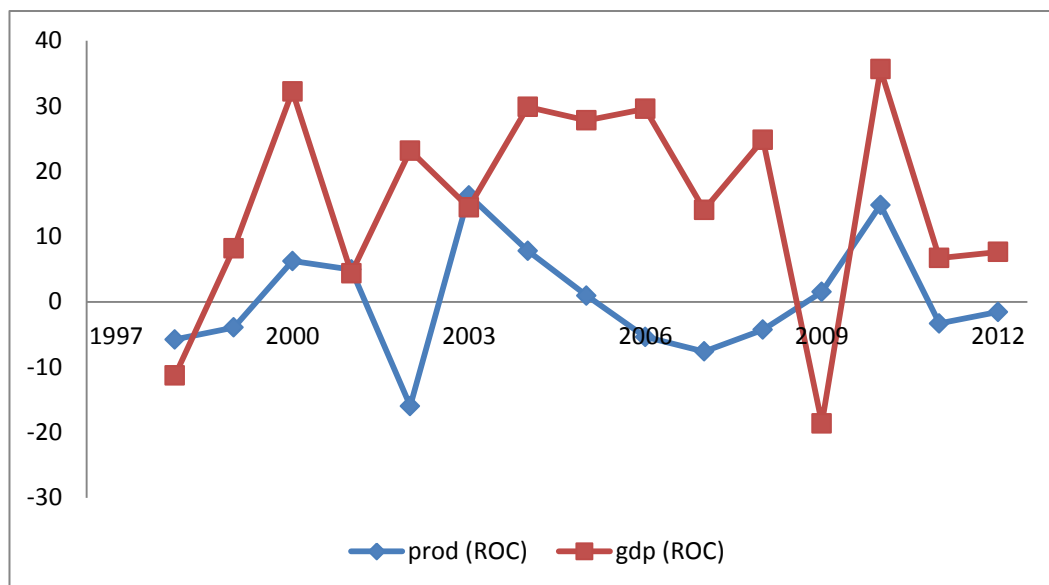
Source: GDP data from World Bank databank/Crude Oil Production data from Nigerian National Petroleum Corporation Annual Statistical

For mainstream economists, years of increased GDP must be credited to increased oil production. They would hypothesize that in years of increased oil production, Nigeria's economy must also grow. However, the doctrine of comparative advantage in this case appears to be inacceptable as oil production does not appear to have a significant effect on the volatility shown in Nigeria's growth between 1998 and 2012.

To explain the growth in Nigeria's economy, value of oil exports is analyzed against oil prices. Figure 8, illustrates the change in value of petroleum exports and oil price between 1990 and 2012 to identify if there is a relationship. And indeed the graph shows that value of petroleum exports has a positive relationship with GDP. In years when oil prices dropped, the value of petroleum oil produced also dropped. This was to be expected. If oil prices decreased, the value of petroleum exports should also decrease. However 2002 was the only year that experienced a decrease in the value of petroleum exports

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[3] Data prior to 1998 was unavailable.

but oil prices increased. The petroleum protests in the Niger-Delta region could have attributed to the decrease in export value. It can be concluded that oil prices have a positive and significant correlation with value of petroleum exports. The movement of global oil prices influences the value of petroleum exports

Figure 8: Relationship between oil price and value of oil exports
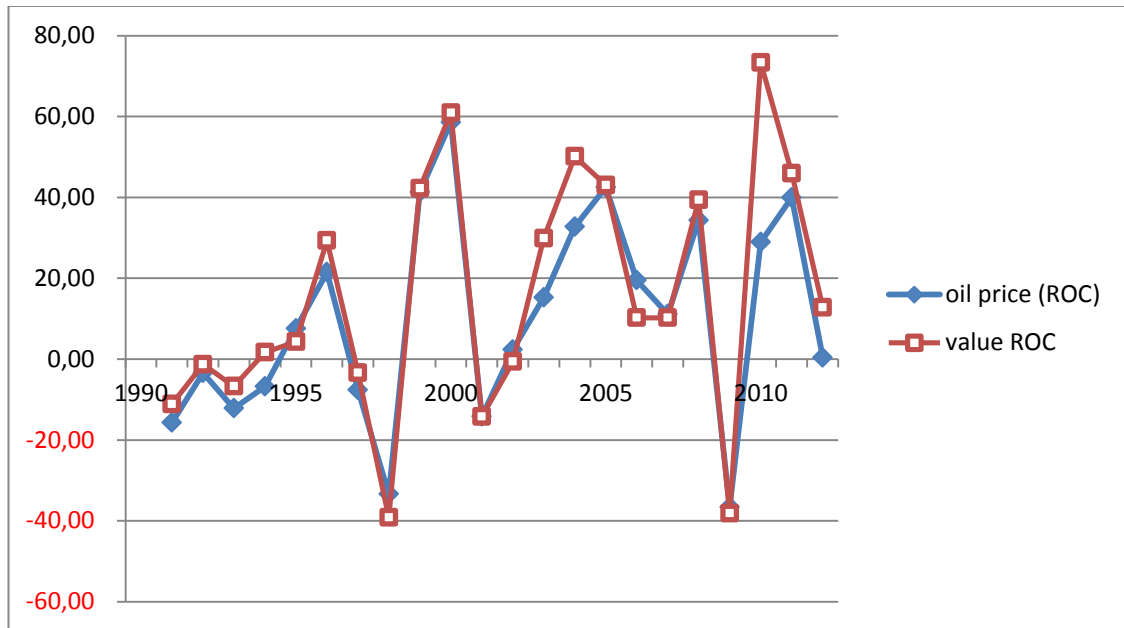
Source: Global oil price data from British Petroleum/Value of petroleum data from Organization of Petroleum Export Countries Annual Statistical Bulletin 2007 &2012. Rate of change calculated by the author

Figure 9:1990-2012 value of oil exports and GDP
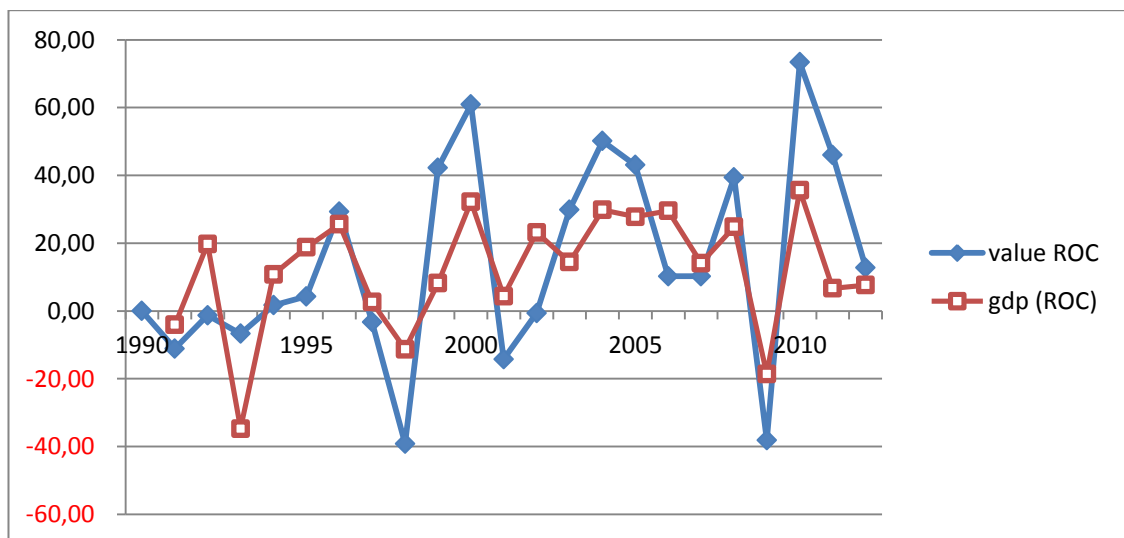
Source: GDP data from World Bank databank/Value of petroleum data from Organization of Petroleum Export Countries Annual Statistical Bulletin 2007 and 2012. Rate of change was calculated by the author.

Now that it has been proven that the value of oil exports has a positive effect on GDP, we must now look at the relationship between value of petroleum exports and oil prices. Figure 9 illustrates the relationship. In the years of low growth, the values of petroleum exports also decreased. It is important to note that in some years of decreased value of petroleum exports, growth would still increase.

The effect of oil dependency on Nigeria's GDP appears to be affected by the global oil prices which determine the value of oil exports in Nigeria. The doctrine of comparative advantage is therefore not valid because changes in production did not affect the economic growth. However the value of oil exports does appear to influence economic growth. And because the value of oil exports is determined by oil prices, it is oil prices which have caused Nigeria's economy to experience volatile yet rapid growth.

4.2 Corruption & Growth

For Prebisch and Singer (1950) and others, the presence of good institutions are necessary for Nigeria to have positive growth. The slow or declining growth experienced by developing countries is due to the lack of a strong institutional framework. Nigeria, indeed, has been plagued with political conflicts and corruption since independence and new institutional economics would say it is the lack of strong governance to blame for the volatility of growth. However, even in years with no political conflicts, GDP did not experience a large surge in growth relative to other years.

In order to analyze this claim, Figure 10 illustrates the relationship between Transparency International's Corruption Perception Index (CPI) and the annual growth rates from 1996 to 2012. The CPI index scores countries on how corrupt their public sector is perceived to be by others. Nigeria was not included in the CPI until 1996; therefore data on corruption prior to 1996 is unavailable.

Figure 10: Corruption Perception Index (CPI) and Annual percentage growth rate of GDP of Nigeria from 1996 to 2012
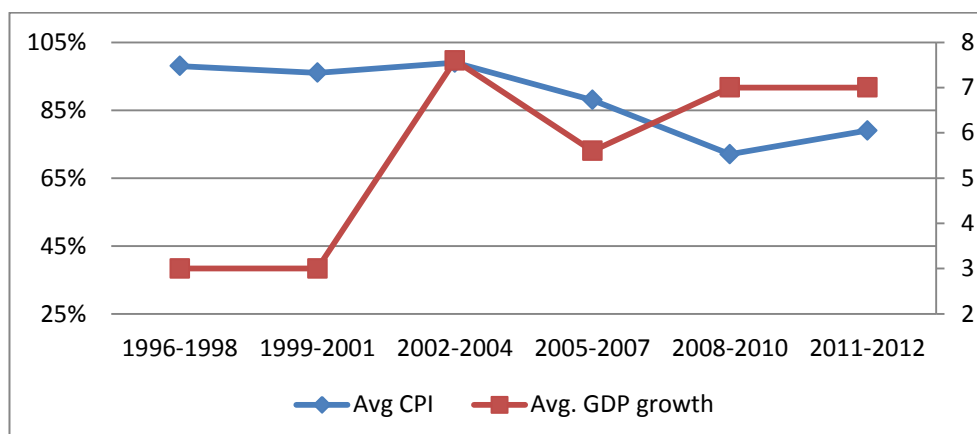
If new institutional economists are correct, the higher the CPI ranking, the lower Nigeria's GDP should be. According to the CPI rankings, the public's perception of Nigeria's public sector appears to have improved from 1997 to 2012. In 1996, Nigeria was perceived to have the most corrupt public sector in the world. But by 2012, Nigeria ranked 90 out of 100 countries in corruption. This improvement in governance however has no significant effect on growth rates. Figure 10 shows that although corruption according to Transparency International decreased, the growth rate remained volatile and did not appear to have a correlation with GDP.

Data from Figure 10 proves that corruption and growth are not correlated in the case of Nigeria. However, Transparency International's (TI) methodology in forming the CPI's is questionable. TI claims that the index is based on the perception of observers around the world. It claims that the index "captures the views of analysts, businesspeople and experts" (TI 2013). However, the ability to measure corruption which is often done informally and therefore not observable cannot be measured. TI also uses different methodologies and countries each year which has an effect of the results of the index.

4.3 Diversification and Growth

For structural economists, diversification and industrialization is necessary for sustainable growth. Diversification entails transforming from an economy based on one commodity to a variety of diversified commodities. Although Nigeria's economy has grown steadily for the last decade, growth has come from natural resources which are exhaustible and therefore unsustainable.

Nigeria is primarily dependent on oil and other natural resources for foreign exchange and government revenue. Figure 11 illustrates that dependency by showing the percentages of the three major exports in Nigeria; fuel, manufactured goods and agriculture raw materials, as a percentage of merchandise exports. According to data collected from World Bank, fuel exports from 1996 to 2011 have accounted for at least 89 per cent of all merchandise exports each year. Manufactured exports have remained below 6 per cent of all merchandise exports during the same time period and agriculture raw materials remain under 7 per cent each year. This chart suggests that Nigeria has not industrialized and continues to follow the doctrine of comparative advantage by producing and exporting in the commodities which they can produce intensely.

Figure 11: Exports of fuel, manufactured and agriculture as percentage of merchandise exports (1996-2011)

	Fuel Exports (% of merchandise exports)	Manufactured Exports (% of merchandise exports)	Agriculture Raw Materials (% of merchandise exports)
1996	96	1.1	1.6
1997	96	3.4	0.1
1998	97	2.5	0.1
1999	99	0.6	0.1
2000	100	0.2	0
2001	100	0.3	0
2002	94	5	0.3
2003	98	2.1	0
2004	N/A	N/A	N/A
2005	N/A	N/A	N/A
2006	98	1.3	0.4
2007	94	2.2	0.8
2008	92	5.5	0.9
2009	90	3.6	1.1
2010	87	6.7	1.6
2011	89	2.5	6.1

Source: World Bank Databank.[4]

A sub-question of this paper aims to decipher whether Nigeria's current growth rate. While it is possible for the economy to grow, Figure 11 suggests that Nigeria has not been able to diversify its economy. Without diversification, Nigeria will remain dependent on oil revenue. And as long as oil prices continue to increase, Nigeria may be able to continue growing at its current rate. But in order to sustain the growth long-term, it is necessary for the economy to diversify away from oil to other sectors.

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[4] Data for years 2004 and 2005 were unavailable from source. It is unlikely that percentages varied much during the two year time period.

4.4 Resource dependence in Indonesia & United Arab Emirates

In this section, I will compare the economies of Indonesia and the United Arab Emirates (UAE) who implemented resource based growth strategies during the early stages of development much like Nigeria. They were primarily producers and exporters of agriculture goods and oil and lacked substantial diversity in their production base. As a result of the resource based strategy, both countries experienced volatile growth during those periods. The volatility of commodity prices especially oil prices and lack of diversity in production led both countries to implement strategies to diversify its economy in order to withstand volatile commodity prices and other global crises. Although most countries take different paths to economic development, the economies of both UAE and Indonesia have followed the advice of structural economists who recommend industrialization. Both countries focused on diversifying their economy; however it resulted in different outcomes.

Figure 12 compares the GDP of Indonesia, Nigeria and UAE from 1976 to 2011.

Figure 12: Average Annual GDP Growth: Indonesia, Nigeria and United Arab Emirates 1976-2011
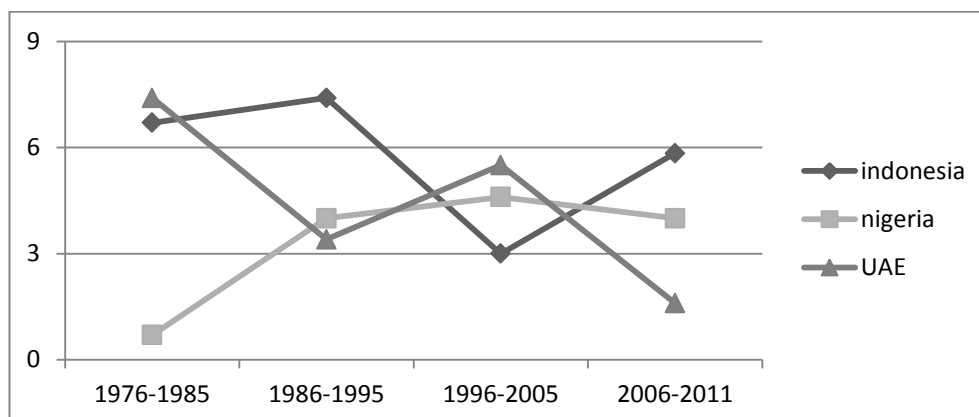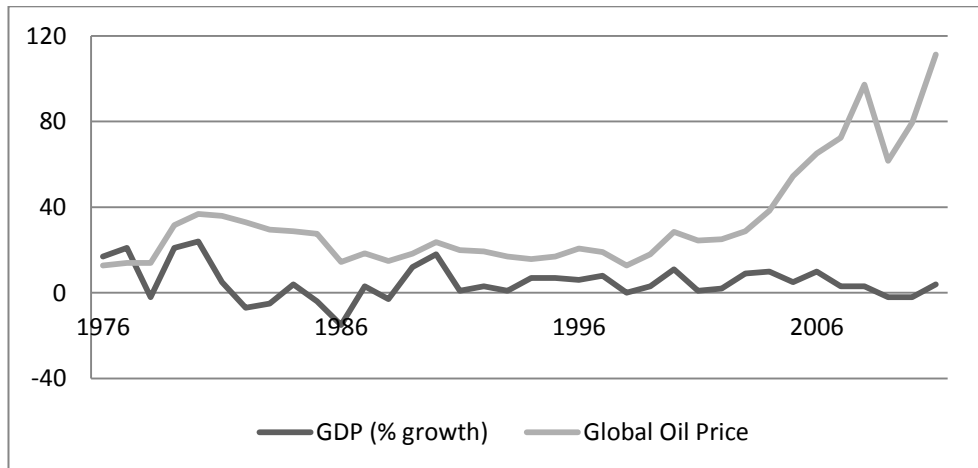

Source: World Bank Databank

4.4.1 United Arab Emirates

UAE is an oil-rich country which began exporting oil in the 1970s post-independence. With an estimated 10 percent of the world's oil reserves, oil revenues have resulted in vast social and economic changes improving the welfare of UAE citizens (Shihab 2001:250). Unlike Nigeria who was unable to turn oil revenue into economic development, UAE used oil revenue to increase wages, social services and the standard of living for its people (Shihab 2001:250). However, globalization and oil price shocks caused UAE to diversify its economy to ensure sustained growth in the case of future crises (MPRA 2013). According to the IMF, the country has gone from being oil dependent in 1980 (90 percent) to one of the least oil dependent countries in 2004 (50-60 percent) (IMF 2005). This transformation came after years of a resource based growth

strategy, which focused on subsistence agriculture and other natural resources as the primary contributor to the economy.

Figure 13 shows the relationship between UAE's GDP and global oil prices from 1976 to 2011. The graph suggests that UAE's GDP has been volatile due to the volatility of oil prices. It appears that as oil prices increase, UAE's GDP also increases. In the presence of oil shocks, UAE's GDP decreases suggesting that both variable correlate.

**Figure 13: UAE GDP vs. Global Oil Price (1976-2011)**

Source: World Bank Databank and British Petroleum

To ensure diversification, UAE adopted an outward-oriented development strategy involving trade liberalization, improved business environment and the development of infrastructure (IMF 2005). Diversification first began with domestic industry (fertilizers, aluminum, cement and petrochemicals) but later moved to more diversified products such as electronics, machinery and transport equipment (IMF 2005). Its non-hydrocarbon sector was further pushed by the development of the Free Trade Zones (FTZs) which attracted companies producing electronic products and manufactured goods (IMF 2005).

In the 1990s, while most oil-exporting countries were experiencing volatility in oil prices, UAE averaged GDP growth of 7 percent. Growth during that period was due to the diversification of the non-oil sector as shown in Figure 14. Oil rents dropped from 25 percent of GDP in 1990 to 12 percent in 1999. However, the manufacturing sector increased its share of GDP while the industrial sector dropped to 42 percent in 1999 but improved by 7 percentage points in the following year.

**Figure 14: United Arab Emirates Economic Structure (1976-2011)**
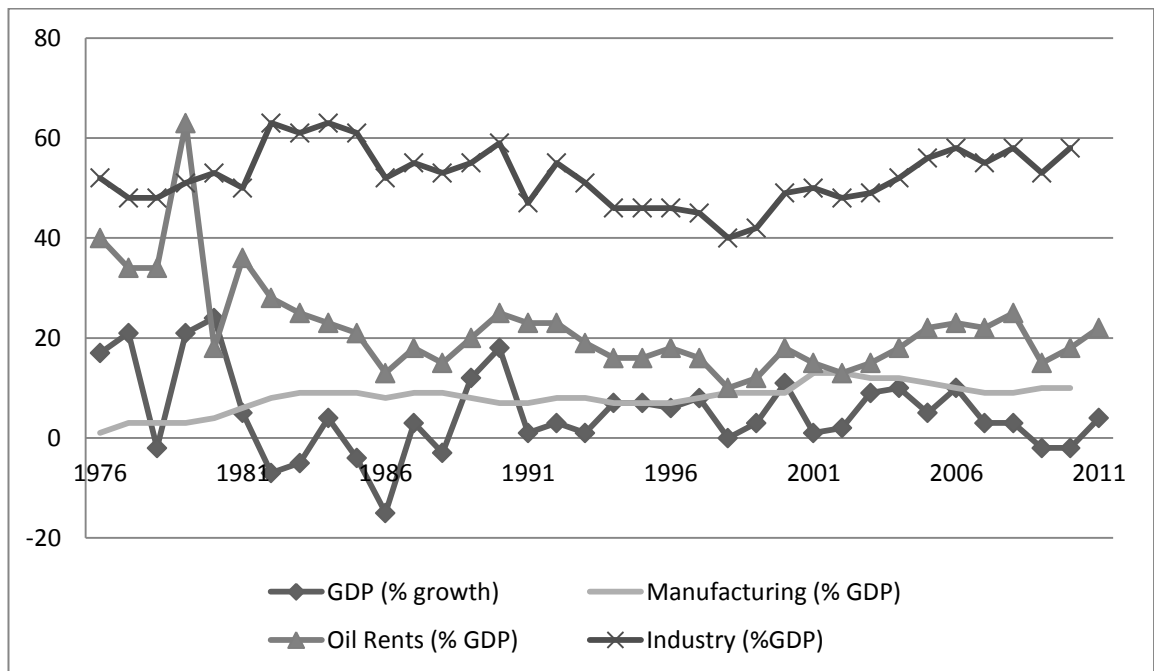
Source: World Bank Databank.

Figure 14 shows the relationship of UAE's GDP with different economic sectors. UAE experienced extreme volatility in its economic growth from 1976 to 2000. In the same period, oil rents appeared to be volatile as well. But as industries have continued to increase and manufacturing has remained steady, the volatility of UAE's economy has decreased. However, UAE is currently in the beginning stages of diversification and industrialization but it is apparent that the change in the productive base and increased promotion of the manufacturing sector has begun to lead to a more stable economy capable of withstanding global shocks.

4.4.2 Indonesia

Nigeria and Indonesia provide an interesting comparison as they share similar histories filled with coups, corruption, oil and underdevelopment. In the 1960s, both countries had the same level of GDP per capita and received oil windfalls which did not benefit the public. However, the Indonesian economy has more than quadrupled since the 1960s while Nigeria's economy has become stagnant (Ross 2003:13). As a result of its dependency on oil, Indonesia's economy experienced volatile growth. High global oil prices, resulted in increased growth for Indonesia and oil shocks caused growth rates to drop (See Figure 15).

**Figure 15: Indonesian GDP and Global Oil Prices (1976-2011)**
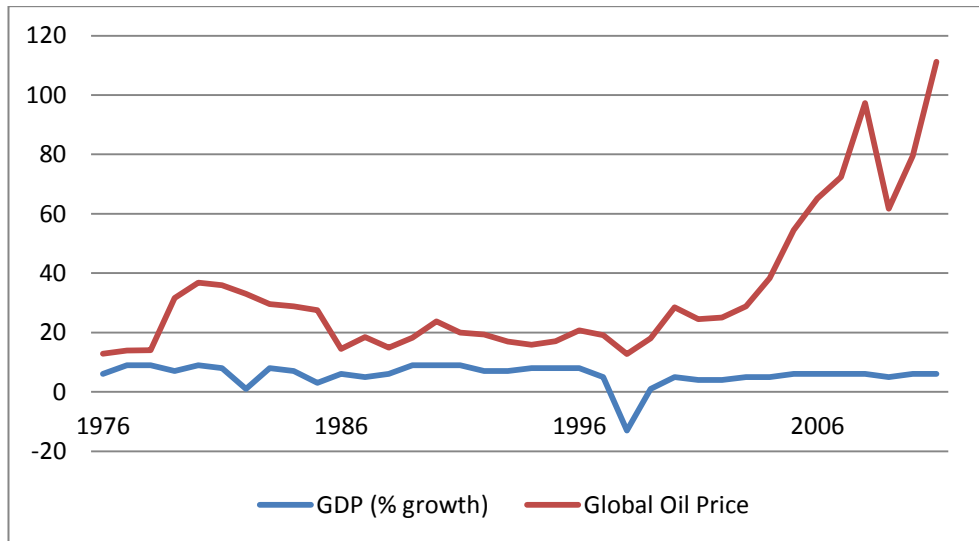
Source: World Bank databank and British Petroleum

In the 1960s and 70s, Indonesia's economic structure was primarily based on agriculture, emphasizing the promotion of agricultural self-sufficiency (RSA 2011). However oil was the second most exported commodity and accounted for 30 to 40 percent of total exports. The oil booms of the 1970s caused oil exports to increase tenfold leading to 55 percent of government revenue, 22 percent of GDP and 70 percent of export earnings coming from oil exports (Kawagoe 1997:11). Figure 15shows how the economy of the 1970s grew to nearly 9 percent by the end of the decade. On the other hand, the status of the non-oil sector during the same period was worsened by the oil booms which redirected investments into unproductive activities (Kawagoe 1997: 12). Oil revenues were not reaching the citizens and were instead disbursed between government officials. Consequently, foreign investments were also concentrated in the agriculture and mining sector and accounted for 72 percent of approved investments (Kawagoe 1997: 19).

The oil shocks experienced in the 1980s led to the government readjusting its economic strategy to defend its economy against future global crises. The government responded by establishing a diversification strategy meant to strengthen the non-oil sector. This involved diversifying the productive base and reducing the country's dependence on oil. To do this, the government promoted the private sector and an outward-oriented trade strategy (World Bank 1994). According to Ross (2003), Indonesia's transformation did not take place because of a decrease in oil production, but because of Indonesia's increased exporting of manufactured goods and export promotion strategy (Ross 2003:14). Figure 16 shows the distribution of the country's production base and GDP before and after industrialization. The graph shows that from 1990 onwards, Indonesia's GDP ranged between 9 and 6 percent, respectively. In 1998, the collapse of oil prices resulted in GDP dropping which affected oil rents however, the manufacturing sector withstood the shock.

From 1990 onwards, the focus of the economy shifted from oil to manufacturing. Figures from data shows that manufacturing as a share of GDP more than doubled to 28 percent, while oil rents as a share of GDP dropped from 19 to 7 to 2 percent, between 1990 and 2011. The distribution of investments also shifted. By 1990, foreign investments were redirected to manufacturing and services while investments in agriculture and mining had drastically decreased (Kawagoe 1997: 19).

Figure 16: Structural Change in Indonesia's Economy (1976-2011)
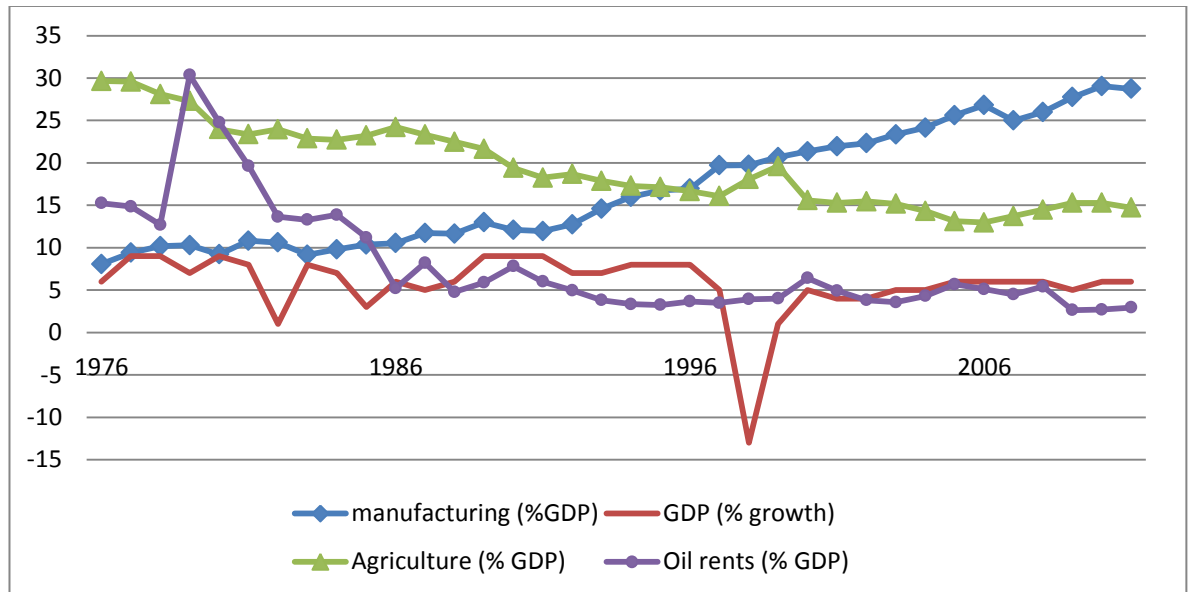
Source: World Bank Databank

Diversification into manufacturing has led to rapid growth in Indonesia however growth has become stagnant causing much concern for the Indonesian economy. Before and after the Asian crisis, the Indonesian economy experienced a sharp export boom. Unlike the 1990s when the export boom was a result of the increased production in the manufacturing sector, this export boom resulted from increased production in the commodity sector. This commodity boom is due to increased production and prices of palm oil and rubber and increased oil and gas prices (Adler 2012:47). Because commodity goods tend to have highly volatile prices, the likelihood of the country's growth to also become volatile is very likely.

Chapter 5: Conclusion and Policy Implications

This study aims to examine the effect of oil dependency on Nigeria's economic growth. This study embarks from other studies that have focused on how natural resource based growth strategies affect economic growth. The findings from previous studies vary with some studies concluding that natural resource based growth is appropriate. Other studies find that a natural resource based growth strategy is effective for economic growth in the presence of good institutions while other studies conclude that a natural resource based growth strategy will not lead to sustained economic growth and industrialization is necessary for economic growth.

As an oil exporter, Nigeria has pursued a resource based growths strategy since independence but has been unable to achieve sustainable economic growth. Although current growth rates average 7 percent, the country remains dependent on oil revenues to transform the economy.

The data used in this paper included gross domestic, exporting data, corruption data and global oil prices. After analyzing the effects of oil dependency on economic growth in Nigeria, we conclude the following points:

- Oil dependency has been the basis of economic growth in Nigeria since the 1960s. Between 1970 and 2000, growth rates were very volatile in much the same way as oil prices. From 2000 onwards, oil prices increased resulting in increased economic growth in Nigeria.
- Oil dependency in the short run resulted in volatile, yet rapid economic growth in Nigeria, however in the long-run oil dependency has caused the Nigerian economy to become stagnant. This is due to Nigeria's inability to diversify its economy.
- Nigeria's recent rapid growth is due to the increase in oil prices. We found that in years of high oil production, GDP growth appeared to decrease while in years of low oil production, GDP growth increased. There appeared to be a negative correlation between the two factors. However, there was a positive correlation between GDP and value of exports which suggests that oil prices affect economic growth.
- Resource based growth was found to be unsuccessful for Nigeria. While growth was achieved, the resource based growth strategy has not led to continuous and consistent growth for the economy.
- Although we believe institutions are important to development, the quality of Nigeria's institutions does not determine the level of economic growth in the country. Based on Transparency Internationals corruption perception indexes, we find that in relation to average annual growth rates, there is no significant correlation between the level of corruption in Nigeria and the country's ability to grow. But it is also important to note that many critics of the CPI question the validity of TT's methodology.

  The appropriate policies to address the issue of oil dependence in Nigeria should focus on diversification and industrialization to promote economic growth. Also, the transformation from oil exporter to man-

ufacturing exporter will take time, therefore in the short-run, focusing on the fiscal policy can lead to improved development.

Finally, this paper has some limitations due to the lack of data available on the research topic. Data from 1960 would be better for all the variables in order to obtain better results. In some instances, data was available for an earlier period of time than others. Also, although this research focuses on the effect of oil dependency on economic growth, it is impossible to ignore the fact that there are other variables which affect economic growth. Similarly, in this research, GDP was used as a proxy for economic growth. However, we are aware that there are other variables which could be used as a proxy for economic growth including gross national product, GDP per capita, HDI indicators (health, education and living standards), household income, technological advancement, savings, investments and many others. Other variables should be analyzed for further research.

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