

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Bachelor thesis

**EVALUATION OF THE IMPACT OF PETROLEUM
PRODUCTION ON ECONOMIC GROWTH IN
NIGERIA**

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Department of Economics

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BACHELOR THESIS ASSIGNMENT

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Economics and Management

Thesis title

Evaluation of the Impact of Petroleum Production on Economy Growth in Nigeria

Objectives of thesis

The primary aim of this thesis is to analyze the impact of petroleum production on the economy growth of Nigeria and to determine the factors that influence petroleum production and contribute more and the one with less influence. The main aim can be decompose to the partial objectives: to examine the factors that affect production of petroleum, to evaluate the significance of factors, which can affect petroleum production, to answer stated hypotheses, and to evaluate the validity of the stated hypotheses, to make simulations of how much effect the gross domestic product has on the production of petroleum.

Methodology

The multiple linear regression model is used for estimation of parameters according to the ordinary least square method. The estimated model is evaluated according to economic and statistical verification. Model is used for determination of important factors and for evaluation of stated hypotheses. Deduction, induction, synthesis and analysis are used in the thesis as well.

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ADELMAN, M. A. (2003). The economics of petroleum supply. USA: MIT press. 567 p. ISBN: 978-0262514460.

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THORVALDUR, G. (1990). Principles of economic growth. USA: Oxford university press incorporated. 200 p. ISBN: 9780198776147.

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Declaration

I declare that this thesis “*the Evaluation of the impact of petroleum production on economic growth in Nigeria*” and the work presented in it are my own and has been generated by me as the result of my own original research and I have used only the scientific literature and other information resources that are mentioned in the references at the end of the thesis.

Prague, 10th of March 2015

.....

Ruth Modupe Kukogho

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EVALUATION OF THE IMPACT OF PETROLEUM PRODUCTION ON ECONOMIC GROWTH IN NIGERIA

HODNOCENÍ VLIVU PRODUKCE ROPY NA EKONOMICKÝ RŮST V NIGÉRIE

Summary

The petroleum sector has been the dominant sector in Nigeria due to the huge revenue it generates, for many years. However the predominant situation in the Nigerian economy had negative effects. The causes and effect of this has been analyzed. The findings from statistical verification show that the explanatory variable which is the foreign direct investment, the export of petroleum and the price of petroleum have impacted positively on the gross domestic product per capita. The production of petroleum in Nigeria however was discovered to have not had such an impact on the Gross domestic product per capita. This can be traced to the uneven distribution of the revenue which is generated from production, amongst the whole population. In conclusion this generated revenue could be invested in other sectors so that it could positively affect economic growth and real living standards.

Keywords: petroleum, production, gross domestic product, government, Nigeria, barrels, economy growth.

Souhrn: Ropný sektor je dominantním sektorem Nigérie díky tvorbě obrovských příjmů, přesto je převládající situace Nigérijské ekonomiky rozporuplná. Z tohoto důvodu jsou analyzovány kauzální efekty ropného sektoru na ekonomický růst Nigerie. Výsledky ukazují, že přímé zahraniční investice, vývoz ropy a cena ropy mají pozitivní dopad na hrubý domácí produkt na obyvatele. Produkce ropy v Nigérii má naopak negativní efekt na HDP na obyvatele, které mohou být vztáhnuty k nerovnoměrnému rozdělení příjmů generovaných z ropné produkce. V závěru lze říci, že příjmy získané z produkce ropy by měly být nerovnoměrně rozděleny a investovány do dalších sektorů tak, aby mohli pozitivně působit na růst ekonomiky.

Klíčová slova: ropa, produkce, hrubý domácí produkt, vláda, Nigerie, barely, ekonomický růst.

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1 INTRODUCTION

The economy of Nigeria was always dependent on the agricultural sector over the past few centuries until the discovery of oil in 1956 around the region of Oliboiri, after many years of exploration. Ever since this discovery the economy of Nigeria have depended completely on petroleum as it accounts for 90% of gross earnings of Nigeria; this is however not seen in the real economy because the predominant economic influence does not affect the lives of the average Nigerian. The discovery of oil has hereby brought about the neglect of the agricultural sector and other distributional sectors. A few years after the discovery of crude oil, Nigeria became a net exporter of petroleum as a result of producing in commercial quantities and was able to meet the minimum quantity requirements measured in barrels produced per day allowing the nation join the Organization of Petroleum Exporting Countries (OPEC).

The economy of Nigeria over the years from 1970 experienced transformation caused by oil boom. The gross domestic product in that year was \$25.4billion US dollars. This development brought about the reliance of the economy on the oil sector which has contributed to economy stability, employment opportunities, provided huge revenue for the government and the generation of income. In 2013, the GDP rose by 489.6 billion dollars while the GDP per capita was estimated at the value of \$3005.5 according to the World Bank bulletin. When GDP per capita is used it has to be remembered that the population is growing quickly and only about 1% benefit from dividend of oil. This is not surprising because Nigeria is the most populated country in Africa with about the 166.2 million people accounting for 2.35% of the world population according to the National Bureau of Statistics.

Although the oil economy has contributed to major developments, but the poverty rate is still very high considering that Nigeria is one of the 10th oil producing country in the World and the 3rd oil exporting nation in Africa. The problem can be traced to mismanagement public funds, exploitation of the abundant resources. It is also fair to say that the dominance of petroleum production by multi-national companies has hindered economic reforms from reaching full economic potential, as they are interested in making profit for themselves instead of the nation as a whole, likewise the government who are interested in their personal pocket instead of the living standard of the nation.

2 AIM AND METHODOLOGY

2.1 Objective/Aim

The primary aim of this thesis is to analyze the impact of petroleum production on economy growth in Nigeria and determine the rate of growth since the discovery of petroleum in Nigeria. To determine other significant factors which influence growth of the economy from the period of 1988-2012.

The main aim can be decompose to the partial objectives:

1. To examine the factors that affect growth of the economy among the stated variables
2. Evaluate the significance of factors, which can affect economy growth.
3. To answer stated hypotheses, and to evaluate the validity of the stated hypotheses.
4. Make simulations based on how much effect gross domestic product per capita has on petroleum.

The stated hypotheses are:

Hypothesis 1: Foreign direct investment is an important factor that leads to transformation of an economy, therefore it will impact positively and significantly on the GDP per capita.

Hypothesis 2: An increase in petroleum export will have a positive and direct effect on gross domestic product per capita because of the huge revenues generated from petroleum export.

Hypothesis 3: The effect of the price on petroleum will be significant as petroleum is considered a necessary commodity for every household in Nigeria.

Hypothesis 4: The production of petroleum in Nigeria will impact positively on the GDP per capita because an increase in output level of a country will definitely measure up to the living standard of citizens.

Hypothesis 5: The effect of petroleum production on economic growth will be statistically significant, as the oil sector is the dominant sector of Nigerians economy.

2.2 METHODOLOGY

The thesis employed the empirical approach in estimating the relationship and effect of the foreign direct investments, the production of petroleum, the export of petroleum, and the price of petroleum on the GDP per capita. The dependent variable of the model is the Gross domestic Product (Per capita), while the independent variables are the foreign direct investment, production of petroleum, export of petroleum and the price of petroleum respectively. The literature review section provided an insight and a detailed understanding on the scheme of the thesis, this was done by comparing text books, journals and scientific papers. This thesis put to use the annual secondary data from the period of 1988 to 2012, the data was obtained from the central bank of Nigeria, World Bank, and United State energy information statistical bulletin. This secondary data was used to make theoretical and empirical analysis, the data was analyzed for estimation of model in accordance to time series analysis.

The multiple linear regression models was used for estimation of parameters according to the ordinary least square method. The estimated model was evaluated in accordance to economic and statistical verification. The parameters estimated was formulated for the verification of the stated hypotheses, the decision based on either to reject or not reject the null hypothesis was interpreted by using the T-test in determining the actual result, however the goodness of fit of the regression function was determined by coefficient of determination. Deduction, induction, synthesis and analysis was also used in the thesis. The Data were analyzed by using software like GRETL for estimation of regression model, and Microsoft Excel was used for graphs, computations, forecast and calculations. The results obtained from statistical testing provided information about the nature and magnitude of effect the explanatory variable have on GDP per capita. The Discussion of the evaluated model was made in other to compare and to interpret the results. Prognosis was made by computing future value and choosing the best and appropriate adjusted r-square for predicting in accordance to the estimated model.

3 LITERATURE REVIEW

3.1 BENEFIT OF NATURAL RESOURCES TO GROWTH

The Problem with the economy of Nigeria can be traced back to bad policies from government, exploitation of petroleum revenue and also underdevelopment of other sectors According to Gylfason (1990) he made emphasis on Africa, as home to country holding the current world record in economic growth over the past quarter century. He sighted Nigeria as an example, he stated that “*in Nigeria where 1973-4, the first oil price increased in world markets triggered an unprecedented economic boom. National per capita in this oil producing nation increased fourfold or more from 1972 to 1980*” (Gylfason, 1990, p.6) he also emphasized on how the nation has gone back to square one and all the earnings from oil export has been exhausted and how the economy is still struggling from crowded out oil export that fell to 4 percent and three percent in 1980.

Adelman (2003) also made some analysis in his writing he said that “*Minerals are inexhaustible and will never be depleted. A mainstream of investment creates additions to prove reserves, a very large in-ground inventory, constantly renewed as it is extracted. Without enough inducement to build new reserves and hold them for years, there would be no investment*” (Adelman M.A, 2003, p.6). It explains why resource-rich country like Nigeria still suffers as a result of exploitation. Adelman (2003) clearly states how mineral resources should be renewed and the adverse effect of exploiting resources will result to the dwindling of inventory. This specifically proves why resources scarce countries improve more than countries with abundance of resources.

Adelman (2003) and Gylfason (1990) suggest that the negative effect of resources if it's not properly managed will impact less on an economy. This result suggest that abundance of natural resources could promote economic growth but natural resource dependency will not lead to economic growth. Nigeria has the tendency of having a developed economy just from the revenue generated from oil production but human investment has accelerated the opportunity of moving forward. . Nigeria has arable land and good soil with mineral nutrients that is rich for agricultural process, so if the government can initiate the incentive towards investing in the Agriculture sector. The government could propose policies that will translate to the development of the Nigerian economy which will mean that the economy doesn't have to be reliant on petroleum sector alone as its prevailing sector. Odularu (2008) also suggested

that the revenue generated from the oil sector should be properly managed and excess revenue from oil sector should be invested in the other sectors of the country. (Odularu, 2008, p.2)

3.2 DEFINITION OF ECONOMY GROWTH BY DIFFERENT GROWTH THEORIST

Economy growth is more complex than it seem, it is seen from classical economics perspective and it is very important to understand what it really means and how important it is for this thesis. Some scholars made their own contribution on the topic because the theory of economy growth can be viewed from different perspectives. Gylfason (1999) made emphasis on different growth theorist who had different opinions on what growth really meant. This contributions was traced back to David Hume, Adam smith, Thomas Malthus, David Ricardo, John Stuart Mill and Karl Marx.

According to Gylfason (1999) who quoted David Hume *“If we consult history, we shall find, that in most nations, foreign trade has preceded any refinement in home manufactures and given birth to domestic luxury”*(Gylfason, 1999, p.19) wrote Hume. In Hume’s words he clearly stated that a favourable balance of trade is very important when considering economic growth or economy prosperity of a country, he discovered that it is total trade that matters and not trade surplus when talking about growth of an economy.

In a rather different manner, Adam Smith redefined growth in his own way, as a relationship between division of labour and specialisation, the size of market and efficiency, and public policy. He started the first revolution in growth theory. He went further by saying *“saving and investment both as by-product and precursors of domestic and foreign trade and moreover, as means of enlarging the market and increasing the division of labour and thereby efficiency”*(Gylfason, 1999, p.19) Adam smith in his words made some emphasis about how high level of savings and investment stimulates growth. He also linked economic growth to the quantity and quality of the three main factors of production which was land, labour and capital.

Gylfason (1999) stated that Adam smith was not countered for over 200 years until the likes of Thomas Malthus, whose main interest was on population. Nigeria has a populous nation can relate to this theory. John Stuart Mill, in his *principle of political Economy* (1948)

rejected Malthus idea by saying population shouldn't be a problem to attaining an economy growth because education can solve the problem of population. If people are been educated there will be a room for diversification and this will translate positively to the economy, he then argued that production should be the main focus of economics.

3.3 POPULATION GROWTH, OIL RESOURCES AND OTHER SECTORS

Adelman (2003) discussed about population growth in relations to oil resources in his writing, his emphasis on the chances of expanding oil and gas reserves as well as how production depends on the cost and how mankind is willing to pay in relations to if there is enough oil and gas in the world. He said the statement is a nonsense question and has yielded many foolish answer he stated that "*Economic growth will not be constrained by lack of oil.*" (Adelman, 2003, p.91) he made mention of how Growth may be constrained by air or water pollution; by the need to move such prodigious quantities of dirt for sake of energy or other minerals that mankind will have good reason to curb growth.

According to Gylfason (1990) who made a remark about how population growth and how it's can affect growth presumably referring to Thomas Malthus observation about the topic, he said "*The slowest progress in wealth is often made where the stimulus arising from population alone is greatest*" (Gylfason, 1990, p.37). He stated that an increased population should impact well on the economy, but the situation in Nigeria is not the same in reference to Gylfason statement. The case would probably be different if Nigeria put the abundant resources to full use. In reference to Odularu (2008) economist view coevally of natural resource abundance and high rate of poverty in developing countries like Nigeria as resource curse (Odularu, 2008, p.2).

Masseron (2000) pointed out "*Every sector, every channel, every product must be profitable. Those that do not perform efficiently will be abandoned, unless realistic forecasts indicate a rapid recovery*" (Masseron, 2000, p.387). So it is very important to employ other sectors in other to achieve growth and this can possibly transfer to economy development whereby the citizens are assured better living standards and provided with adequate infrastructures. Gylfason (1990) went further to talk about how population growth may affect the growth of an economy, well this is also true because the greater the population, the need to increase output and produce more. Well the problem of population growth can be solved if people are offered education, income are distributed evenly and citizens are provided with

adequate employment opportunities, this measure will not only eradicate poverty but also translate to economic growth of Nigeria. This could happen but it very unfortunate that the economy of Nigeria have been faced with underdevelopment through poor economic reforms and poor income distribution for its populace.

3.4 PETROLEUM EXPLORATION

In other to get crude oil from the ground it is necessary for the process of exploration to take place, in reference to Masseron (2000) he stated on the risk incurred in the process of exploration, describing the difference between the petroleum industry and other industries stems from the uncertainty prevailing in supply of raw materials. Oil discovery involve uncertainty, it is not certain whether the earth's surface contains oil nor is it certain that all the methods employed will bring forth oil, it is uncertain that the commercialization of oil that gushes forth will be profitable. "(Masseron, 2000, p.17).

Adelman (2003) pointed out that it is customary to group oil and gas production in three stages: exploration, development and extraction from the earth. Extraction is like most other economic activities in that current inputs are closely matched by current outputs, so that one can easily compare prices with costs (Adelman, 2003, p.4). Petroleum exploration in Nigeria is a very important aspect, as the industry is divided into two main sectors which is the upstream and downstream sectors. The upstream is responsible for exploration, production and delivery of petroleum export to oil and gas terminals, while the downstream is responsible for loading crude oil at terminals, transportation, and marketing of petroleum product. According to Conaway and Charles, they defined exploration geology has clearly involving high risk, high cost which is not meant for faint hearted (Conaway, Charles, 1999, p. 41) oil exploration is very crucial, if the process is not been carried out carefully and with precision, Referring back to Masseron (2000) he pointed out how the exploration process is very costly in terms of geological and geophysical survey.

Adelman (2003) and Gylfason (1999) were able to consider the risk involved in the production process of oil both in terms of discovering it, dry holes, drilling cost and the risk involve in the commercialization of the process. There is high return at the end of petroleum production but there is also high risk in exploration process. So it is very important if Nigeria can consider investing in other sector with lower production risk and lower production cost.

3.5 OPEC-ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES

Organisation of petroleum exporting countries popularly known as “OPEC” was founded in 1960 with the aim of protecting its member state. According to Conaway, Charles (1999). It consist of twelve member states which is Saudi Arabia, Nigeria, Venezuela, the united Arab Emirate, Libya, Kuwait, Angola, Ecuador, Iraq, Iran, Algeria, and Qatar. This cartel was formed in other to regulate petroleum prices and promote the interest of its member’s states. The organization mission was to give it members a common goal of controlling petroleum price and also to ensure sufficient supply to non-oil producing countries and the consuming nation, they have a say in the world oil market and make sure there is price stability among its member state. Conaway, Charles (1999) pointed how the organisation came into being and its mission, in their statement “*OPEC was formed in 1960 to give the producing countries a unified voice in dealing with the western oil crude oil pricing, it major impact however, has been since 1973, when it began functioning as a cartel to control crude oil prices*“. (Conaway, Charles, 1990 p.246).The organisation of petroleum exporting countries also accounts and controls about 40% of world oil market. Their headquarters is presently located at Vienna, Austria. This is where decisions concerning the price of oil are being delegated by its member’s state.

In the same vain they have also tried to regulate prices of petroleum by giving production quotas in other to meet demand. Adelman (2003) also pointed out how OPEC as a cartel has been able to protect the interest of its member state and called it “*a convenient forum for the constituent nation* “. (Adelman, 2003, p.417) he made several analyses of how OPEC have being consistent in raising the price of oil over the years and how cautious they should be over reducing the price towards ultimate ceiling price to prevent the risk of damaging the economy system and possibly getting a reaction from consuming countries.

According to OPEC bulletin Nigeria joined in 1971 though the discovery of petroleum happened in 1956 but as the year goes by it became one of the leading petroleum producing countries with marketable and exporting quantity and decided to join the organization. The nation joined the cartel in other to promote its interest in the World market. Recently the story is different because of the present oil price increase by OPEC. Nigeria crude oil market is highly volatile, because production of petroleum involves organizing and planning as well

as how long or short supply process takes which thereby translate to fluctuation in the price of petroleum.

3.6 RECENT DECREASE IN THE PRICE OF OIL BY OPEC

“Economy-tackling shale oil challenge with diversification” (Anonym 2014, p.1)

The recent development before the end of last year was the decrease in the price of oil by OPEC. It has being able to stabilize prices over the years with the effort of meeting market demand. Like any organisation, it has been successful but most time these changes leads to fluctuation in petroleum price. According to a publication by Anonym (2014, p.1) “*OPEC decision meant that oil market remained flooded with OPEC members alone accounting for about 50 million barrels per day*“. The publication describe how OPEC intend to reduce the excess supply of shale oil in North America, by so doing they decided to decrease the price of oil and drive U.S shale producers out of the oil market.

Currently, Saudi Arabia is not ready to accept the production cut, the production cost of a barrel of oil in Saudi Arabia is put at \$10 per barrel while in countries like Nigeria, Iran and Venezuela the cost is about \$25pb, but for shale producers the cost is about \$45pb and so the breakeven price for shale producers is around \$65pb according to Anonym (2014). The recent decrease in the price of oil will affect Nigeria based on its already vulnerable conditions and relatively fluctuation in petroleum price unlike Saudi Arabia that can thrive despite the low price. Saudi Arabia have more leverage even if the price goes lower than it is, due to its Strong Market strategy as well as its low production cost but same can't be said about Nigeria. “*Armed with cash reserve of over \$741billion and a surplus of \$5million for a fight but, sadly most of its allies in OPEC are not and that include Nigeria*“. Anonym (2014).

The organization, OPEC explained that their intentions was to stabilize the price of petroleum at a level that will not affect global economy growth but for producers to generate adequate revenue and meet up with market demand to sustain market equilibrium. The recent decrease in the price of oil will definitely posed an adverse effect to the economy of Nigeria.

According to Adelman (2003) he remarked *“The higher the price, the better the financial condition of the sellers and less pressure of them to cheat and undersell each other in order to pay bills; once the price begin to slip, the OPEC nations will be under great pressure to produce more in order to acquire more revenue”* (Adelman, 2003, p.435).

The remark made by Adelman (2003) is exactly what is happening in the OPEC world today, the increase was to reduce price so low that existing US shale producer will be forced out of the market but they neglect the fact that some countries will be affected by this moves. Nigeria will be forced to cut its production capacity and this low price will definitely translate to the low investments which will affect economic growths. Nigeria is very vulnerable to decrease in the price of petroleum, has the economy heavily depends on the petroleum sector. It is also considered as a necessary and indispensable commodity due the fact that every household in Nigeria make use of petroleum product in one way or the other. Nigeria one of the largest consumer of petroleum products with an average of 103254.48 thousand barrels per day according to the (EIA bulletins). Nigeria is basically reliant on petroleum due to the electricity shortage faced in the country, which necessitates the use of gasoline generators in almost every household in Nigeria and also some business ventures. So this show why petroleum is of high demand in Nigeria and of a relative importance to every household in Nigeria.

According to Anonym (2012) he pointed out that Nigeria is in panic mood due to the present increase in the price of oil both in public and private sector and how every administrator is worried about the economy and solvency of governments at all levels. He emphasized on how the economy is on a free fall which doesn't translate well to the forecast of what the economy will look like in the immediate future. The economic situation of Nigeria at the present state is vulnerable and the leverage Nigeria have is low as it's the major reliant sector of the economy. The only country that will benefit from the petroleum increase is Saudi Arabia because they have better leverage and a better market strategy to produce in large quantity, which gives them upper hand over any other petroleum producing county. If price of petroleum is low it will bring about low investments and this might lead to weak economy activities

3.7 ECONOMY DIVERSIFICATION

Anonym (2014) made emphasis on how the revenue generated from petroleum production has basically translated to its dependence of petroleum; petroleum production has generated revenue for government so much so that they do not want to invest in other sector. Oil resource in Nigeria has being a blessing as it's in abundance but it is being mismanaged by government for so many years, and no government has initiated idea to diversify the economy by venturing into other productive sector.

Anonym (2014) pointed out *“Economy diversification entails a lot of things; it should be taken into cognizance. For instance, regional integration which is important strategy for facilitating trade and commerce is a thing for consideration“*. He emphasized on the importance of diversification and how far it will help an economy. He also stated that the resources exploited should be invested to other sectors in other to enhance the economy. He went further in his publication by stating that while natural resources ca be used to drive economy diversification, a good governance remains a pre-requisite in improving economy growth of a nation. This can be related to the present state of Nigeria banking on oil alone to generate its revenue, and the challenge is to contain the pace of growth and translate to the expansion of the economy.

In the same perspective Gylfason (1990) pointed out that Natural resources management and sustainability matter to economy growth, several empirical studies have found that variables reflecting the social and cultural environment also matter for growth. (Gylfason 2001 p.108) This statement is also similar to what Anonym (2014) said about Natural resources and how it can be efficiently managed. In the same point diversification is very important to influence growth of an economy, it help curbs unforeseen circumstances and prevent having to risk all on one sector. Example of this kind of situation is the present reduction in the price of oil; it will definitely affect Nigeria who depends heavily on petroleum because of the high production cost. If the country was able to diversify into other sector, the recent oil price would not have affected the economy. More importantly the government should make better policy that will enhance the economy instead of on one sector, it is true that petroleum production which translates to export is very important for a modern economy but it is also important to diversify other sectors. (Anonym 2014 p.1).

Oil and gas have accounted for 98% of export earnings and 83% of federal government revenue that Nigeria has decided not to consider other sectors (Odularu, 2008, p.4)

3.8 THE IMPORTANCE OF BEING EFFICIENT

In other for a country to achieve economy growth it is very important for that nation to be efficient, Efficiency is the ability of a nation to achieve its goal with minimum resources. It actually compares what is been produced by how it is been consumed. The productivity level of a country can be determined by how efficient they are able to manage the available resources. Gylfason (1990) in his writing cited how important economy growth actually is when resources are being used efficiently. He pointed out *“Natural resource and their management matter for economic growth also from another angle, by neglecting their natural environment, some countries have managed to maintain their national incomes temporarily at higher levels than otherwise would have been available”*(Gylfason, 1990, p.108).

Efficiency can be achieve by doing the right things, ability of a country to put the right resources in the right place and produce maximum output with minimum input and at a lowest cost. Gylfason (1990) went further with is writing, he described the link between economy growth and efficiency has been complicated, he said *“An increase in efficiency will increase economic growth, yes but output growth does not require a continuous increase in efficiency, a given level of efficiency; including the state of technology will then translate the capital accumulation into economic growth”*(Gylfason, 1990, p.25).

Gylfason (1990) emphasized on the need for efficiency and its impact on economy growth, this can be related to the present state of Nigeria’s economy though it is blessed with abundance of natural resources but it has lack in the area of efficiency. He implied that the reason why resource-rich countries might suffer resource curse can be as a result of reduced return caused by exploitation of natural resources. There is abundance of petroleum but the problem is exploitation by government and also multinational companies. The government should be able to introduce policy that will promote growth. Little wonder why nations that are richly blessed with abundance of natural resources have nothing to show for it and are still the poorest in the world. Nigeria fall into that class, it blessed with oil but still one of the poorest countries in the world, this is the case because of exploitation, tapping of oil,

Vandalism of oil refineries, bad policy by government and corruption. If all this mentioned problems are solved, it will help boost the economy.

3.9 THE MARKETING OF PETROLEUM PRODUCT

It is important to take marketing into consideration because after crude oil have been extracted and refined, it is necessary to present it in the oil market as a marketable product. The sector responsible for this process in Nigeria is the downstream sector, they make sure Petroleum transported, supplied and they market petroleum product. Marketing is necessary for the commercialization of a product and to determine the price of that product because crude oil is sold into commodity market. Conaway, Charlie (1990) clearly stated that *“petroleum marketing involves the transporting of the product to a point where custody transfer is feasible, providing storage facilities where necessary, balancing production and demand and obtaining the best price”* (Conaway, Charlie, 1990, p.245). In their view, they made mention of how marketing necessitates the transporting of product, storage of product with easier access to it and optimizing production cost in the best way in other to fix a reasonable price.

According to Masseron (2003) he reviewed the demand and marketing of petroleum products, he pointed out how petroleum products pass through distribution circuits out from the refineries to end-users. Mass distribution products, for which unit consumption is small, are distributed by retailers supplied by refining companies or wholesalers buying direct from refineries. He also made mention of how products delivered by mass means are sold directly by refining companies and the other major distributors /importers.

However like Conaway, Charlie (1990), Masseron (2003) also considered the impact of transportation when considering the marketing and transferring of petroleum product. According to him he stated how transportation covers distribution of petroleum products between the refineries and depots or bulk customers and terminal transportation. This transportation are done through pipeline, coaster, barges, rail tanks and tank trucks. (Masseron, 2003, p.359) he also suggested how transportation is important in marketing petroleum product and also pointed out the means used in the transportation of petroleum product. In his writing he pointed out the need of storage facilities for petroleum product in a manner that it will be safely stored and for easy access to it when it is being needed for use.

4 ANALYTICAL PART OF THE THESIS

4.1 OVERVIEW OF PETROLEUM SECTOR IN NIGERIA

According to the European Journal (2013) the production of petroleum in Nigeria plays a prevailing role in the economy of Nigeria, as it generate revenue with growth rate banking on heavily on oil sector. Since the discovery of oil in 1956, Nigeria has risen to the tenth largest oil-producing country in the world and eighth largest oil-producing countries in the world with a maximum production capacity of 2.5million barrels per day (World Bank, 2010). Nigeria's economy is majorly dependent on the oil sector which accounts for about 95% its foreign exchange earnings. It is a necessary commodity because Nigeria is basically reliant on petroleum due to electricity shortage. This shortage of electricity supplies necessitated the use of gasoline generators in almost every household, and some business enterprise. Petroleum is highly demanded in Nigeria which shows its relative importance to the economy. According to (OPEC, 2010) Nigeria overtook Iran as the second biggest oil exporter with oil export of 2,464million barrels per day in 2010, which translate to a significant increase of 14.1% from 2,160million in 2009.

The oil sector is the most important sector in Nigeria and nearly 95% of the oil produced in Nigeria is produced through joint enterprise. Nigeria still remain one of the poorest countries in world with 70% of its population (over 90million people) living on less than a dollar per day this is caused by profit generated from production going to multinational oil companies like royal/Dutch shell, chevron Texaco, Exxon mobile, Totaling Elf, AGIP and pan ocean oil with The Nigeria National Petroleum Corporation receiving 57%. However, there might still be hope for Nigeria to gain its ground in the global economy; analysis will be made in other to understand the level of growth since the discovery of petroleum.

Large return is discovered through petroleum production but it's also contributed to the economy negatively in regards to oil exploitation, vandalism of oil wells and pipeline, increase criminal activities in Nigeria, and also increase the rate of corrupt practices by the government. Nevertheless petroleum production have over the years impacted positively towards economic growth but it's safe to say the negative impact of petroleum surpass the positive impact.

4.2 ELEMENTARY ANALYSIS

DATA FOR ANALYTICAL PART OF THE THESIS

The secondary data below was used for analytical framework of the thesis, from the period of 1980 – 2012. The investigated period was chosen so as to give a detailed analysis of the various developments that occurred.

Table 1: Annual Data used to analyse the impact of petroleum on economy growth

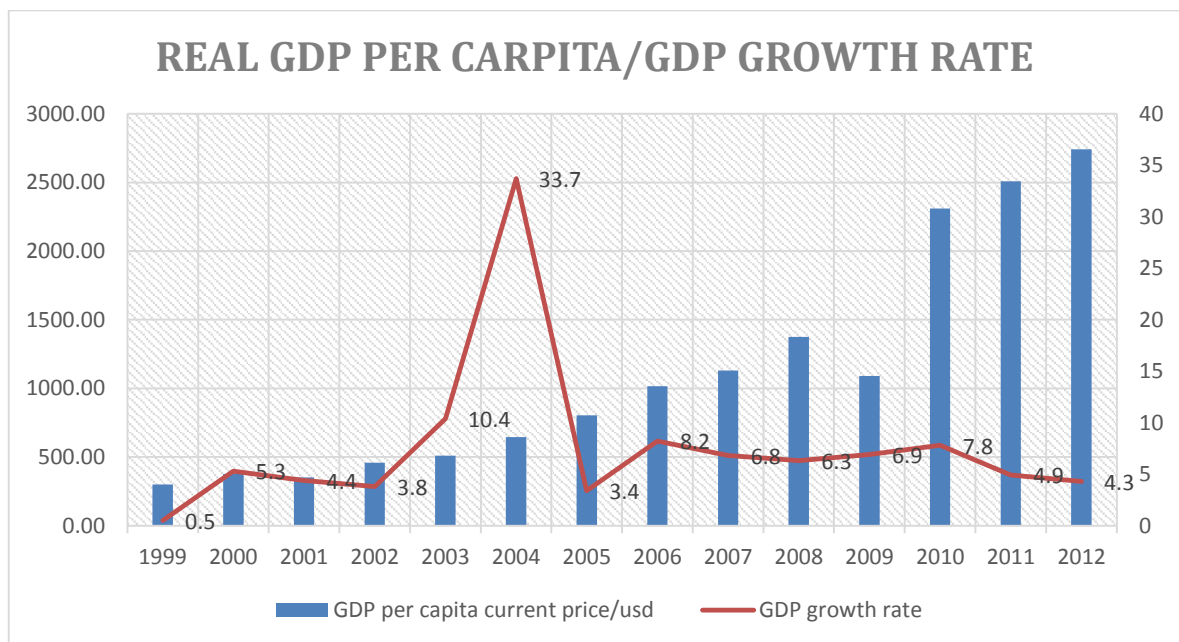
year	GDP per capita	Foreign Direct investment	Production	Export	Price
	<i>current USD</i>	<i>Billion USD</i>	(000)b/d	(000)b/d	liter/USD
1988	256.38	0.38	1,450	1,282	0.002
1989	260.05	1.88	1,716	1,526	0.003
1990	321.67	0.59	1,810	1,570	0.003
1991	279.28	0.71	1,891	1,610	0.0034
1992	291.28	0.90	1,943	1,659	0.0034
1993	153.08	1.35	1,960	1,684	0.0070
1994	171.025	1.96	1,931	1,636	0.026
1995	263.29	1.08	1,993	1,695	0.054
1996	314.74	1.59	2,001	1,699	0.054
1997	314.29	1.54	2,132	1,799	0.054
1998	273.85	1.05	2,153	1,921	0.06
1999	299.34	1	2,130	1,834	0.09
2000	377.50	1.14	2,165	2,069	0.10
2001	350.29	1.19	2,256	2,034	0.11
2002	457.47	1.87	2,118	1,893	0.13
2003	510.42	2.01	2,275	2,164	0.17
2004	645.93	1.87	2,329	2,176	0.20
2005	804.15	4.98	2,627	1,796	0.20
2006	1014.76	4.85	2,440	1,916	0.20
2007	1130.88	6.03	2,450	2,052	0.20
2008	1376.02	8.2	2,165	2,164	0.20
2009	1090.75	8.55	2,208	2,272	0.28
2010	2310.86	6.05	2,455	2,419	0.32
2011	2507.68	8.84	2,250	2,582	0.32
2012	2742.22	7.1	2,520	2,720	0.50

Source: Central bank of Nigeria, the World Bank and the EIA statistical bulletin

GRAPHICAL REPRESENTATION AND DISCUSSION OF DEVELOPMENTS.

Nigeria with all the revenue and wealth generated from oil has performed poorly with its real GDP growth rate not higher than it was in the 19th century. The GDP per capita was a better approach to use because it measures the real living standard of the overall population in Nigeria compared to real GDP.

Graph 1: The recent development that occurred between GDP per capita in current USD and Annual GDP Growth Rate in percentage from 1999-2012 according to World Bank data.



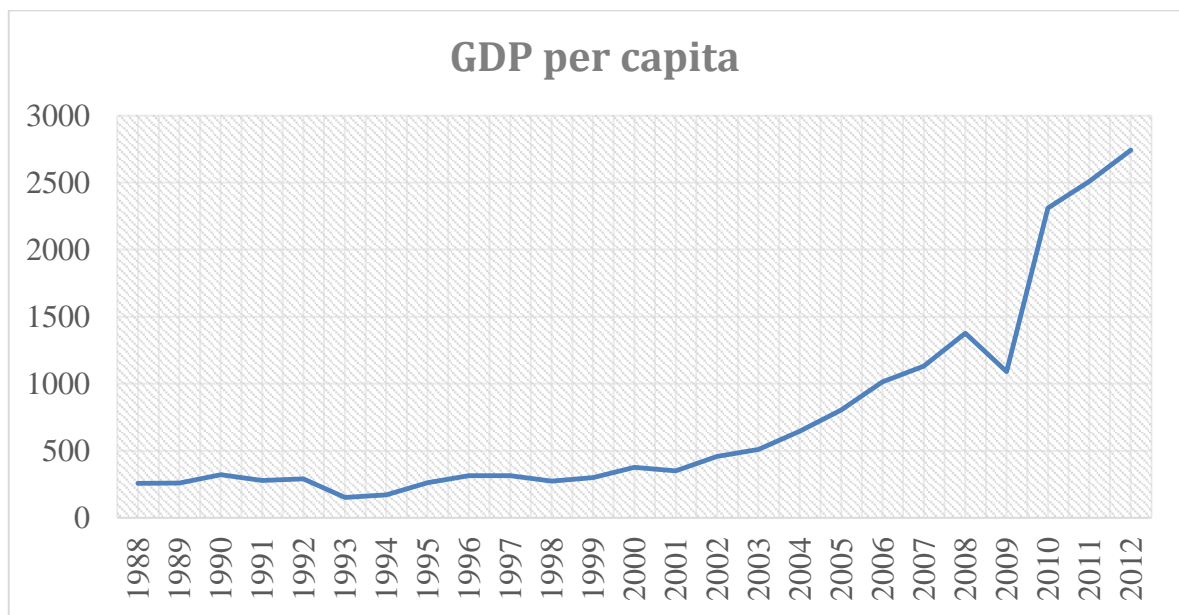
Source: World Bank statistical bulletin

The graph above show the development between the GDP per capita and annual growth rate in percentage. Although GDP per capita show the relative growth experienced by an economy and the performance of the economy while the changes in real GDP show the changes in production by taking inflation into account. The economy of Nigeria rose sharply before 1999 due to exploration success then the GDP growth rate fell by 5% in 1999 because of the change in government According to World Bank (2014) the year 2004 was eventful as growth rate increased tremendously by 33.7%. In 2012 the GDP per capita experienced an increase and has been consistent since then and annual growth rate of GDP experienced a slight increase in 2010 by 7.8%. The average GDP per capita from the period of 1988 to 2012 is 740.680 in current USD.

The graphical representation of GDP per capita from the previous periods.

The GDP per capita was chosen to measure the economy performance and growth of Nigeria because it a much better approach and determination of performance compared to the GDP alone. The population is increasing rapidly with over 166million people so it was of relevance to the real living standard of people GDP based on amount of money made per head.

Graph 2: The Graphical Representation of GDP per capita in current US dollars.



Source: World Bank Statistical bulletin

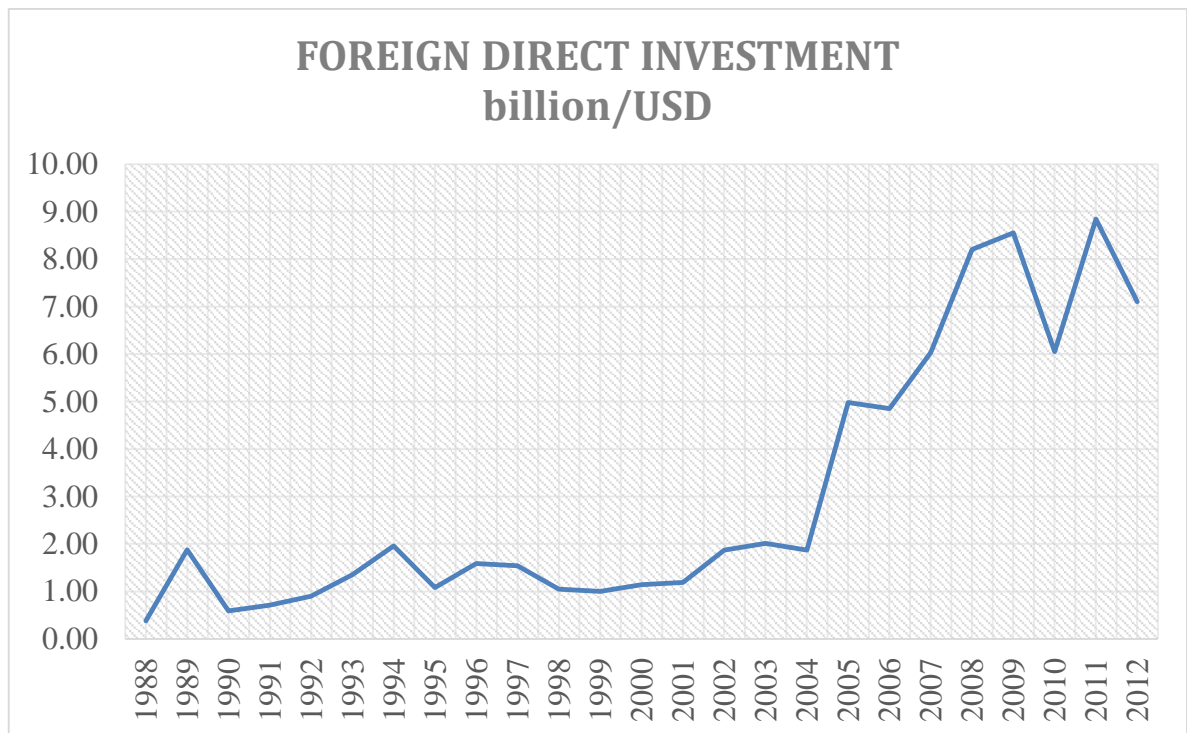
The rate of Gross domestic per capita was stable from 1988 until 2006 according to the World Bank data. In 2007 there was a rapid increase in the rate of GDP per capita by US\$ 1376.02, meanwhile between 2008 and 2009 there was a slight decrease 0.03%. There was an unprecedented increase experienced in 2010, which has led to a consistent increase ever since and this might be as a result of the government introducing better policies and economic reforms that is projected to sustaining the growth of the economy like the Millennium Developmental Goals (MDG).

The estimated average of GDP per capita according to the investigated period is \$740.688 with a low record in 1994 of about \$171.03 and a high record in 2012 of \$2742. This result show that for an oil producing nation like Nigeria, the GDP per capita is increasing but yet the rate of poverty in Nigeria is high. The world bank Estimates show that about 80% of petroleum revenue is only benefitted by 1% of the population.

The graphical representation of Foreign Direct Investment in Nigeria

Foreign direct investment is an important factor to consider for economy growth especially for a country like Nigeria that is bound to attract foreign investors because it abundance natural resources.

Graph 3: Foreign Direct Investment in billion USD for the period of 1988-2012



Source: World Bank statistical bulletin

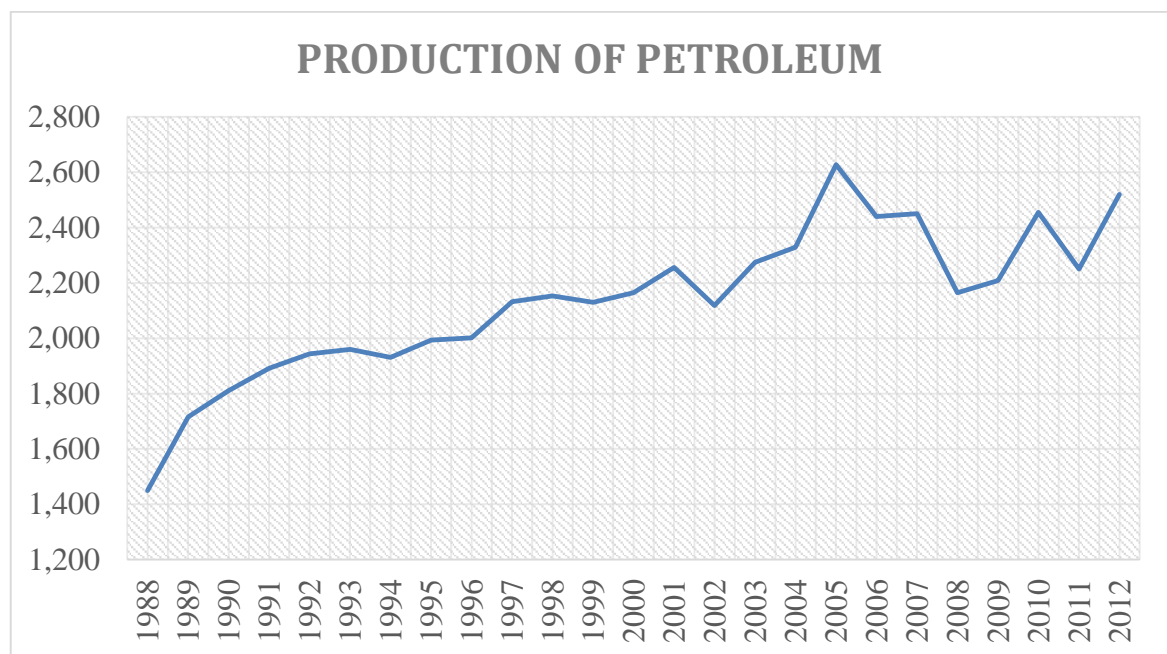
The rate of foreign investment in Nigeria from the period of 1988 to 2005 was not more than \$1.9 billion until 2003 an increase of about US\$2 billion was experienced which resulted to high rate of employment opportunities in Nigeria. In 2005 there was an increase in foreign direct investment by US\$4.9 billion and US\$6.03 in 2007. There was decrease in the rate of foreign investment between 2010 and 2012 due to deregulations associated with exchange rate volatility. The abundance of natural resources in Nigeria have been able to attract foreign investors who are interested in the petroleum sector and this has in turn translated positively to the GDP per capita of people. Foreign Investment have helped provided employment opportunities for the nationals e.g. the SPDC which is the Shell Petroleum Development Companies who are jointly financed by royal Dutch/shell group and British Petroleum. This multinational company which is sourced by international investors

have helped promote economy growth which as translated to the GDP per capita because 95% out of 4,500 workers are Nigerians.

The graphical representation of production of petroleum in Nigeria from 1988-2012

Petroleum production has been a source of revenue and over the years there has been a tremendous increase coupling with the fact that the consumption rate of petroleum in Nigeria is high.

Graph 4: Production of petroleum in thousand barrels per day from 1988- 2012



Source: EIA statistical bulletin from mundi index

The table represented above show the production of petroleum in thousand barrels per day in Nigeria from 1988 to 2012 and the various historical development that occurred. The lowest production was experienced in 1988 by 1450 thousand barrels per day. There was an estimated average of 1864 thousand barrels between 1989 and 1993. There was an unprecedented increase in production in 2005 due to success in exploration of petroleum and the use of advance technologies in drilling petroleum.

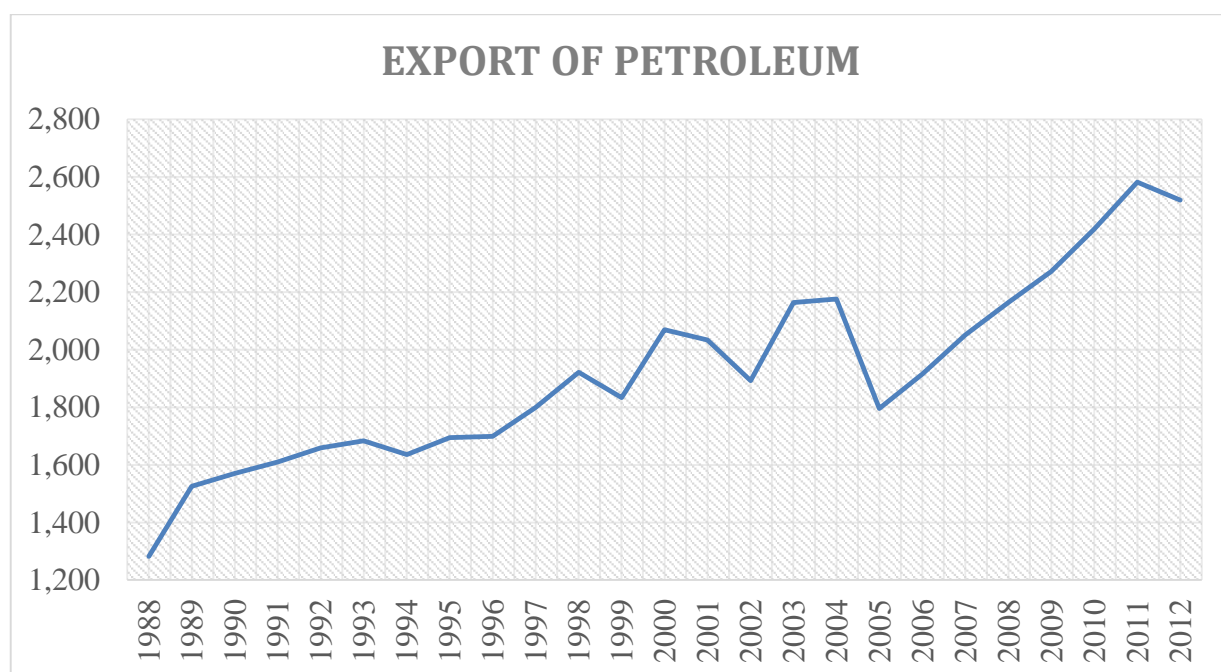
The average production of petroleum in Nigeria for the investigated period is 2134.72 thousand barrels per day. However the huge revenue generated from petroleum are mismanaged and unaccounted for and this has rendered the economy dependent on oil. Despite the petroleum revenue the people in the country based on measured GDP per capita still live in abject poverty. This situation is actually very common in countries with

abundance of natural resources but yet the wellbeing of nationals is very low. In the case of Nigeria, this can be traced back to over exploitation of resources and mismanagement of revenues by the government.

The graphical representation of Export of petroleum from 1988 -2012

The economy of Nigeria is regarded to be an open economy due to the fact that it trade within and outside the country. Over the years the level of its openness to international market as increased tremendously. The export activity of petroleum have massively translated towards the growth of the economy.

Graph 5: Total Export of petroleum thousand per barrels from the period 1988- 2012



Source: EIA Statistical bulletin from mundi index

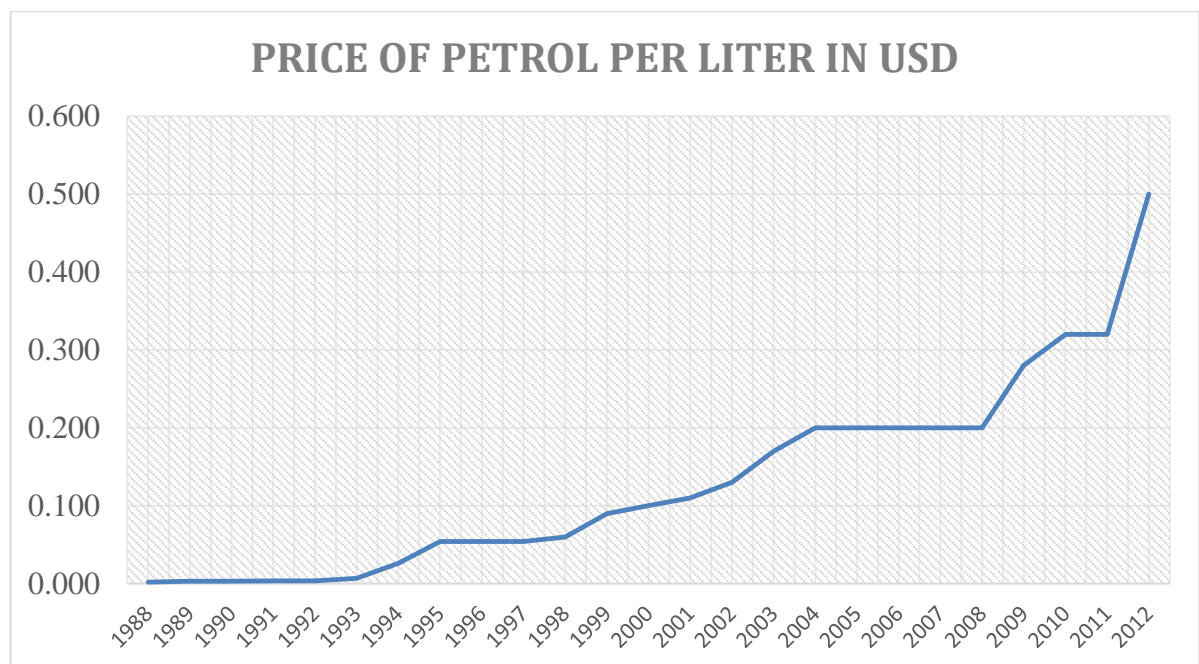
Petroleum export has contributed immensely to the economy of Nigeria and it account for the huge chunk of revenue generated in the country. The average of export of petroleum between 1988 and 1999 is about 1,660 thousand barrels per day which was as a result of low production rate in the 90’s. The value of export in 2005 was low as a result of oil theft which prevent petroleum companies from producing oil and this force them to run short on petroleum, preventing them from shipping in large quantities. In 2006 the value of petroleum product picked up by 0.1% and since then there has been a consistent increase in the value of export of petroleum in Nigeria.

The petroleum export generate revenue for the government and has over the years increased the balance of payment of the Nigerian economy and also it has helped government in settling debts and translated to better living condition of people but not as much as it expected to be as an exporting country of petroleum.

The graphical representation of monthly average price of petroleum

Over the years price of petroleum has increased tremendously this situation is influenced mainly by increase in demand for petroleum which is outpacing oil production and excess capacity. Nigeria has made positive progress by taking advantage of the world oil prices and sustaining the growth of the economy.

Graph 6: Monthly Average price of petroleum per liters in USD from 1988-2012



Source: Central Bank of Nigeria Statistical bulletin

The price of petroleum has shown above has increased over the years and this has definitely been a positive effect on the economy because Nigeria’s economy is fragile to decrease in the price of petroleum as this is the only sector that the economy rely fully on which means that a fall in price will have an negative impact on the economy. There was a recent decrease in the price of petrol in the international market before the end of 2014 and this was to help prevent the production of shale oil in United State. It is important to observe that the consistency in the price of petroleum as transformed positively to the growth of the

economy even though fluctuation has been experienced from time to time. Evidently an increase in price of petroleum might not be favorable to the consumers but petroleum is a necessary commodity for every household in Nigeria which is why the impact of price increase should be considered from the perspective of the nation as a whole and its benefit to the nationals.

4.3 SUMMARY OF STATISTICS

The general statistics of data is displayed below which show the central tendency measuring the average but they are sensitive to extreme values that can cause outliers, the central tendency also show the minimum and the maximum value. The variability showing how far the values from the data investigated are spread out

Table 2: Summary of statistics result based on GRETL software

Summary Statistics, using the observations 1988 – 2012 (n=25)				
Variable	Mean	Median	Minimum	Maximum
yt	740.688	350.290	153.080	2742.20
x1t	3.06840	1.87000	0.380000	8.84000
x2t	2134.72	2153.00	1450.00	2627.00
x3t	1926.88	1893.00	1282.00	2720.00
x4t	0.131592	0.100000	0.00200000	0.500000
Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
yt	750.210	1.01286	1.64336	1.49228
x1t	2.79680	0.911486	0.984591	-0.590144
x2t	268.870	0.125951	-0.407457	0.172684
x3t	342.185	0.177585	0.521160	-0.116726
x4t	0.127378	0.967981	1.08371	0.859788

Source: GRETL Software

The summary of statistics for GDP (per capita) in current USD from 1988 to 2012

The value of average of gross domestic product in Nigeria for the investigated period from 1988-2012 is 740.688 while the median is 350.290 which is smaller value compared to the mean though the difference is not so high which prevents from outliers. The highest value of GDP is 274.20 while the lowest value is 153.080. The standard deviation show the average

deviation of mean of the real gross domestic product per capita is 750.510 while coefficient of variation which depicts observation deviating from mean is 1%.

The summary of statistics for Foreign Direct Investment from the period of 1988 to 2012

The average value of Foreign Direct Investment in Nigeria the period for the investigated period is 3.068 while the median is 1.87 which is also smaller value compared to the mean with basically lesser difference which also prevents it from outliers. The highest value of FDI is 8.84 and the lowest value is 0.38. The standard deviation shows the average deviation of the FDI is 2.79 while the coefficient of variation which shows the observation deviating from the mean is 91%.

The summary of statistics for the production of Petroleum in Nigeria from 1988 to 2012

The average value of production of petroleum in Nigeria for the investigated period is 2134.72 while the median is 2153.00 with very little difference from the mean. The highest value of the supply of petroleum in Nigeria is 2627.00 while the lowest value is 1450.00. The average deviation from the mean is 268.87 while observation deviating from the mean is 12%.

The summary of statistics for the export of petroleum per thousand barrels Nigeria from 1988 to 2012

The value of average export of petroleum product in Nigeria for the investigated period is 1926.88 while the median is 1893.00 which is smaller than the mean. It means that there are some bigger values that made the average higher than the median. The highest value of the export of petroleum is 2720 while the lowest value is 1282.00. The standard deviation from the mean is 342.18 while the coefficient of variation of export of petroleum production in Nigeria is 17% showing the observations deviating from the mean.

The summary of statistics for the price of petroleum in USD Nigeria from 1988 to 2012

The value of average price of petroleum in Nigeria for the investigated period of is \$0.132 while the median is \$0.100 which is also smaller than the mean. It means that there are some bigger values that made the average higher than the median. The highest value of the price of petroleum is \$0.50 and the lowest value is \$0.20. The standard deviation of the price of petroleum in Nigeria from the mean is \$0.13 while the coefficient of variation showing observation deviating from the mean is 96%.

5 REGRESSION MODEL

Economic model: The issue of economic growth in Nigeria is a very important especially for a developing nation with abundance resources. The GDP per capita was analyzed as the dependent variable which is influenced by the foreign direct Investment, the production of petroleum, the export of petroleum and the price of petrol respectively.

Declaration of variables:

y_t The Gross Domestic Product per capita in current USD

x_{1t} Foreign Direct Investment In billion USD

x_{2t} The production of petroleum in thousand barrels per day

x_{3t} The Export of petroleum in thousand barrels per day

x_{4t} Monthly average price of petroleum in USD/liter

Regression model:

$$y_t = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \beta_3 x_{3t} + \beta_4 x_{4t} + \epsilon_t$$

5.1 ESTIMATION OF MODEL

The multiple linear regression models was represented according to ordinary least square method in other to quantify the relationship between the economic models.

Table 3: Estimation of model according to OLS method from GRETl software

Model 1: OLS, using observations 1988-2012 (T = 25)
Dependent variable: y_t

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	930.839	845.898	1.1004	0.28422	
x_{1t}	68.1101	35.7884	1.9031	0.07152	*
x_{2t}	-0.72731	0.330375	-2.2015	0.03961	**
x_{3t}	0.281837	0.41744	0.6752	0.50731	
x_{4t}	4638.55	1394	3.3275	0.00336	***
Mean dependent var	740.6876	S.D. dependent var		750.2096	
Sum squared resid	1472952	S.E. of regression		271.3809	
R-squared	0.890953	Adjusted R-squared		0.869144	
F(4, 20)	40.85196	P-value(F)		2.36e-09	
Log-likelihood	-172.7723	Akaike criterion		355.5445	
Schwarz criterion	361.6389	Hannan-Quinn		357.2348	
Rho	0.104151	Durbin-Watson		1.788515	

Estimation of Model:

$$y_t = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \beta_3 x_{3t} + \beta_4 x_{4t} + \varepsilon_t$$

Estimation of Equation

$$y_t = 930.839 + 68.1101x_{1t} - 0.72731x_{2t} + 0.281837x_{3t} + 4638.55x_{4t} + \varepsilon_t$$

Interpretation of results:

- If all explanatory variable equals zero, the Real GDP per capita will increase by US\$930.84 at current USD.
- Foreign Direct Investment have a positive impact on the real GDP with a coefficient of \$68.11 billion. This means that a unit change in Foreign Direct Investment in billion USD will cause GDP per capita to increase by US\$68.11. This result show how important foreign investment is to the transformation of an economy especially a nation like Nigeria that is blessed with abundance of natural resources which serves a potential to investors.
- The production of oil will have a negative impact on the real GDP whereby a unit change in the production of oil in thousand barrels per day will result to decrease in the Gross domestic product per capita of Nigeria by US\$0.72731. This result shows that if petroleum production decreases in Nigeria there will be a definite decrease effect on the growth of the economy.
- The impact of petroleum export on real GDP is positive whereby a unit change in the export of petroleum product in Nigeria will result to an increase in the GDP by US\$0.281837. Various studies shows that export of petroleum product will definitely have a positive effect on the gross domestic product per capita of Nigeria as a result of revenue generated from petroleum.
- The price of petroleum per liter in Nigeria have a positive effect on the GDP which signifies that if the price of petroleum in Nigeria increases by a dollar per liter, the gross domestic product per capita will increase by US\$4638.55 .

5.2 STATISTICAL VERIFICATION OF MODEL

The chapter focuses on statistical significance of parameters and on goodness of fit. The output regarding to this can be seen in Table 3.

Table 4: Estimated model for verification of hypothesis from GRETL software

Model 1: OLS, using observations 1988-2012 (T = 25) Dependent variable: yt					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	930.839	845.898	1.1004	0.28422	
x1t	68.1101	35.7884	1.9031	0.07152	*
x2t	-0.72731	0.330375	-2.2015	0.03961	**
x3t	0.281837	0.41744	0.6752	0.50731	
x4t	4638.55	1394	3.3275	0.00336	***
Mean dependent var	740.6876	S.D. dependent var	750.2096		
Sum squared resid	1472952	S.E. of regression	271.3809		
R-squared	0.890953	Adjusted R-squared	0.869144		
F(4, 20)	40.85196	P-value(F)	2.36e-09		
Log-likelihood	-172.7723	Akaike criterion	355.5445		
Schwarz criterion	361.6389	Hannan-Quinn	357.2348		
Rho	0.104151	Durbin-Watson	1.788515		

Source: GRETL data

Goodness of fit: coefficient of determination R^2 .

The coefficient of determination is 0.890853 which means that 89% variation of Gross Domestic Product per capita is explained by all the explanatory variable. The explanatory power of the model is very high and a good result leaving out 14% for stochastic terms. The standard error specify that the expected value of dependent variable will be between 271.3809 of actual value.

Statistical significance of parameter

Null hypothesis: $H_0: \gamma_i = 0 \Rightarrow$ statistical insignificant parameter

Alternative hypothesis: $H_1: \gamma_i \neq 0 \Rightarrow$ statistical significant parameter

Decision of result: The decision of result based on either to reject or not reject the null hypothesis is interpreted by using the T-test in determining the actual result.

Decision criterion:

If T-value \geq T-critical value reject H_0 statistically significant

If T-value $<$ T-critical value do not reject H_0 statistically insignificant

Computation of T-critical value = $t_{\frac{\alpha}{2}} = [n - p]$ n represents the number of observations while p is number of parameter and (n-p) represent the degree of freedom.

T-critical value = $t_{0.05/2} [25-5]$ $t_{0.025} [20] = 2.086$

T-critical value = $t_{0.1/2} [25-5]$ $t_{0.05} [20] = 1.725$

Level of significance was chosen as: 0.1 (10 %) and 0.05 (5%)

Table 5: Verification of result according to T-ratio and T-critical value

Variable	T-ratio	Sign	T-critical value	Decision Rule
Const	1.1004	< <	1.725 2.086	Don't reject H_0 statistically insignificant at 5 and 10 % level of significance
X_{1t}	1.9031	> <	1.725 2.086	Reject H_0 at 5 % level of significance, Do not reject H_0 at 10 % level of significance, statistically significant at 10 % level of significance.
X_{2t}	2.2015	> >	1.725 2.086	Reject H_0 statistically significant at 5% and 10% level of significance.
X_{3t}	0.6752	<	1.725 2.086	Do not reject H_0 statistically insignificant at 5% and 10% level of significance
X_{4t}	3.3275	>	1.725 2.086	Reject H_0 statistically significant at 5% and 10% level of significance

Source: own computation

5.3 DISCUSSION OF RESULTS

The result of the statistical verification show that the foreign direct investment have a positive impact on GDP per capita and it is statistically significant at 5% level of significance and not statically significant at 10% level of significance. The result suggest that there is a positive and significant effect of foreign direct investment on GDP per capita as it is a major contributor to growth rate of the economy. The foreign direct investment is statistically insignificant at 10% level of significance as well but there is positive relationship between FDI and GDP per capita.

The production of petroleum in Nigeria is statistically significant but it effect on the gross domestic product per capita is negative which might be as a result to the various problems faced in Nigeria today because of petroleum production especially in the Niger-Delta region of Nigeria where there is high rate of vandalism by militant groups and also the uneven distribution of wealth which has made production of petroleum questionable in terms of return. The recommended solution to this is for the government to employ other private companies in the country to invest in the petroleum sector to prevent the militants groups from demanding for amnesty from the government.

The export of petroleum production impacts positively on the GDP per capita of Nigeria but it is statistically insignificant at 5% and 10 level of significance. The result suggest that the revenue gotten from petroleum export contributes positively to the economy of Nigeria but the mismanagement of the huge revenue from oil export is preventing the country from enjoying the benefits of being a net exporter of petroleum. The government should strategize motives for ensuring that revenue generated from the export of petroleum are effectively and efficiently used. The revenue generated can also be invested in other sectors of the economy so it enhance the even distribution of wealth among nationals.

The price of petroleum production impact positively and significantly at 5% and 10% level of significance on the GDP per capita respectively, this implies that the increase in price of oil is favorable for the economy from the years reviewed in this thesis, this suggest that increase in price of petroleum brings about increase in revenue of petroleum which promote economy growth. Evidently literature studies show that the recent decrease in price of petroleum might cause a fluctuation in the economy growth of Nigeria has the country is vulnerable to price drop. The recent reduction may have a negative impact on the economy.

Implication of result

This result have shown the implication of Nigeria economy dependence on petroleum sector has its prevailing sector, it clearly suggest that sustainable growth and economy stability can only be maintained if the government implement plan to diversify in other sector of the economy. The implication of the result based on empirical findings revealed that petroleum production have negative impact on the gross domestic product per capita in Nigeria but have a significant effect on the economy of Nigeria while the export have a positive impact on economy growth but it has no significant effect on the economy. This might be as a result of the vulnerability of depending on oil sector alone as the prevailing sector and the failure of government to use oil revenue in development of other sectors of the economy.

5.4 RECOMMENDATION

The question to ask is if there is hope for Nigeria, well there is possibility of a sustainable growth in the economy but this can only be done if various measures are put in place by the government and the nation as a whole. Below are various measures that should be put in place for production of petroleum to impact positively on growth of the economy.

- The government should project revenue from oil sector into other sector of the economy so has to curb the problem of banking completely on oil sector.
- Deregulation of the downstream sector which has been the most unsettled sector as it is responsible for exploration and drilling process, unlike the upstream sector that is only responsible for the transportation and marketing of petroleum products.
- Eradication of corruption and promote transparency in handling the revenues generated from the oil sector.
- Protection of the health and safety of the citizen by implementing policies targeted to controlling environmental hazard, which is caused by oil spillage and the release of toxic substance that is harmful to the society.
- Diversification of the economy, by employing agricultural sector which is the most productive sector because of the arable land, and the fertile soil in Nigeria. The agricultural sector have high tendency of providing employment opportunities than the oil sector as unemployment rate is high in Nigeria.

- Enactment of strict laws against the vandalism of oil well, theft, and exploitation of oil.
- Strict laws should be put in place by the government against militant group who claim the ownership of oil and seek for amnesty for the government.
- Enhance better exploration skills by petroleum companies in order to optimize the benefit of being a net exporter.
- On the nation part, the people should make sure that credible and competent policies makers are being elected into the public offices, to ensure macroeconomic variables are out to maximum use and sustainable growth will be attained.
- There should be a more reliable and transparent agencies who should measure the excesses of government activities in Nigeria, as well as checking and balancing the government performance and spending.
- The revenue and income generated from oil production and export should be reinvested to other distributional and commercial sector.
- The government should make use of the revenue generated from oil by setting their priorities straight instead of wasting it on baseless project. They should ensure better living standards for the whole citizens.
- Provide a better security level for the citizen and ensure that there are forces put in place to curb the rate of oil theft, oil spillage caused by vandalism of oil well.
- Increase the means of livelihood and some other economical factor by preventing environmental degradation.
- Actualization of effective regulatory bodies who could introduce empowerment strategy that will promote the economy and ensure economy sustainability.

6 SIMULATION OF MODEL

The simulation of model provided information about the magnitude of effect Gross domestic product per capita will have on foreign domestic investment as the first scenario, and the second scenario was based on what influence the price of petrol will have on GDP per capita if the price increases.

The Estimated function for computing the scenarios:

$$y_t = 930.839 + 68.1101x_{1t} - 0.72731x_{2t} + 0.281837x_{3t} + 4638.55x_{4t}$$

YEAR	GDP	FDI	PRODUCTION
2011	2507.68	8.84	2,250

First scenario: $y_t = x_{1t} = 8.84 + 1.14 = 9.98$ $y_t = x_{2t} = 2,250 - 526 = 1724$

What would be the value of Gross domestic product per capita if Foreign Direct Investment Increases by \$1.14 and production of petroleum decreases by 526 barrels per day in 2011?

$$y_t = 930.839 + 68.1101 * 9.98 - 0.72731 * 1724 + 4638.55 = 4995.25$$

The result of this scenario imply that if foreign investment increases by \$1.14 and production of petroleum decreases by 526 barrel in Nigeria in 2011, the Gross Domestic Product per capita will increase by \$4995.25.

Second scenario

The impact of price on GDP per capita assuming the price of oil increases by 0.20 in 2012, suggest that the result will definitely be positive which means there will be an increase in the Gross Domestic Product per capita by \$4245.49. This result implies that an increase in the price of petroleum will translate positively towards the economic growth there will also be an increase in foreign investment, because investors like to operate when price is high as its yields better return for them. Increase in price will also boost the export of petroleum to other countries. More importantly petroleum is a very necessary commodity which means that price increase will not have a negative effect on economic growth.

7 PROGNOSIS AND FORECAST OF GDP PER CAPITA (CURRENT USD) IN NIGERIA

The trend analysis was use in other to examine which function gives the best results

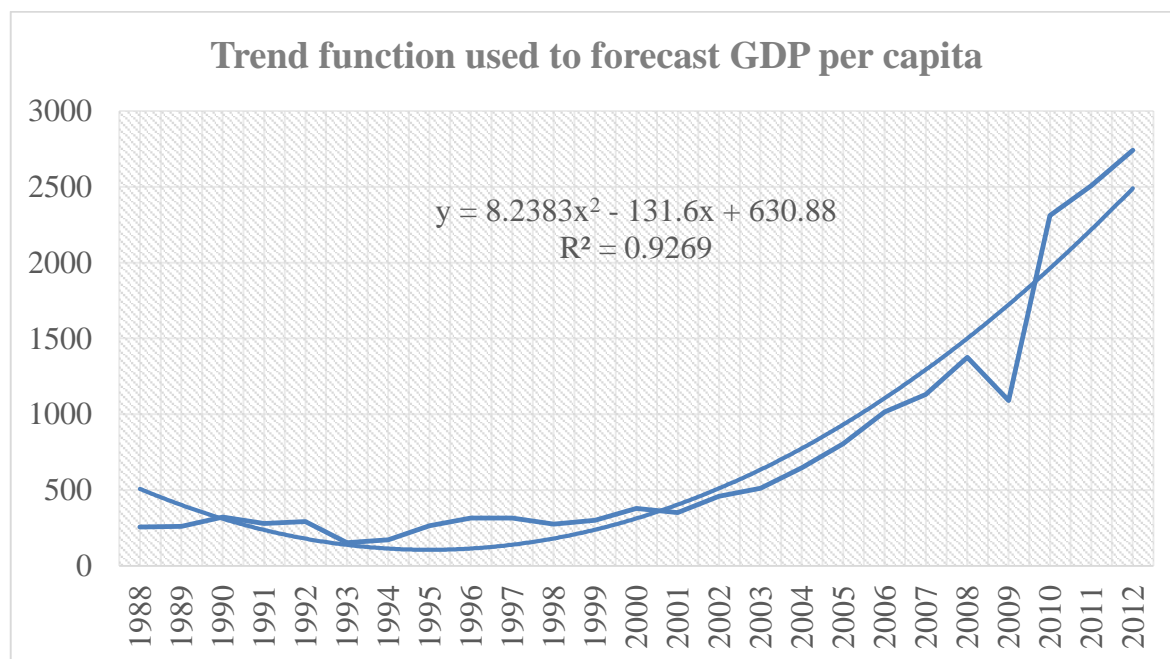
Table 6: comparison of model based on the functions

functions	R-square	N	p	n-1	n-p	Added. R-Square
Linear function	0.6565	25	2	24	23	0.6416
Quadratic function	0.9269	25	3	24	22	0.9203
Cubic function	0.9622	25	4	24	21	0.9568

Source: own computation

The cubic function presented the best result of the model according to the adjusted R² but the quadratic equation is more appropriate and provided the best option for the model.

Graph 7: Trend function computed for prognosis of GDP per capita current USD



Source: World Bank statistical bulletin and own computation

Table 7: computation for prognosis

The Estimated equation: $8.238x^2 - 131.6x + 630.88$

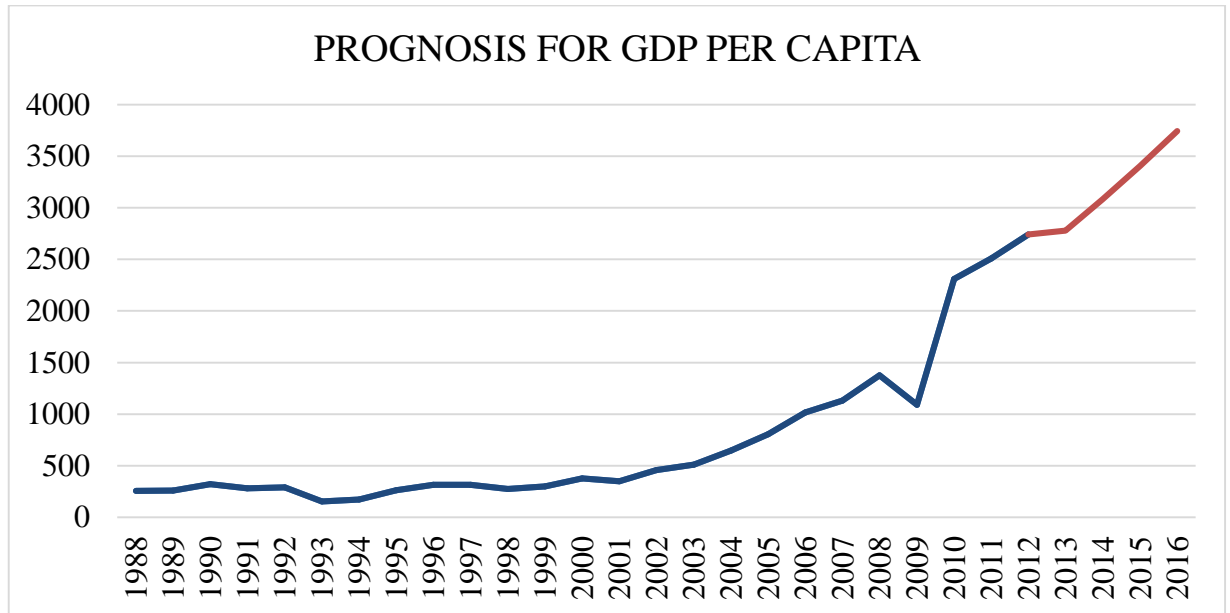
The quadratic equation was chosen as the best and appropriate option for prognosis of GDP per capita in current USD.

year	GDP per capita	time vector	prognosis
1988	256.38	1	
1989	260.048	2	
1990	321.67	3	
1991	279.28	4	
1992	291.28	5	
1993	153.08	6	
1994	171.03	7	
1995	263.29	8	
1996	314.74	9	
1997	314.29	10	
1998	273.85	11	
1999	299.34	12	
2000	377.50	13	
2001	350.29	14	
2002	457.47	15	
2003	510.42	16	
2004	645.93	17	
2005	804.15	18	
2006	1014.76	19	
2007	1130.88	20	
2008	1376.02	21	
2009	1090.75	22	
2010	2310.86	23	
2011	2507.68	24	
2012	2742.22	25	
2013	2778.37	26	277.37
2014	3083.4	27	3083.4
2015	3404.7	28	3404.7
2016	3742.6	29	3742.6

Source: World Bank statistical bulletin and own computation

Graph 8: Forecast for GDP per capita in current USD for 2013-2016

The graph modeled the past developments of GDP per capita and forecast was made three years from the investigated periods. The prediction show that there will be an increase in the value of GDP from 2013 to 2016.



Source: World Bank statistical bulletin and own computation

The graph above illustrate that the GDP per capita will increase slightly in 2013 by \$2778.30 in current USD but will rise in 2014 by \$3214.92 in current USD. This prevalent increase will be of positive impact if Nigeria can use the revenue generated from petroleum and other resources judiciously. In 2015 it is expected that the GDP per capita will increase from \$3083.4 in 2014 to \$3404.7 in 2015, and the prediction of 2016 show that the value of GDP per capita will increase to 3742.6 which means there will be an percentage increase of about 9% compared to the previous year.

The forecast show that there is going to be an improvement in the GDP per capita of Nigeria which will definitely translate to the standard of living of people as GDP per capita is the division of total output and the population of people in a specific country. The present economic situation reveals that the standard of living has declined for many Nigerians while the rich keeps getting richer as a result of unbalanced distribution of wealth in Nigeria. However the implementation of better policies by the government can be of great importance towards a sustainable economy.

8 CONCLUSION

The impact of oil on economy growth have coevally been positive and negative, nonetheless the result of empirical findings for the first hypothesis was confirmed, which suggest that there is a positive and significant effect of foreign direct investment on GDP per capita. The second hypothesis was also confirmed, the model suggest that an increase in petroleum export impacts positively on GDP per capita due to the huge proceeds generated from petroleum exportation. However, the parameter of petroleum export is statistical insignificant due to the uneven distribution of petroleum revenue. The third hypothesis was also confirmed, the model suggest that the effect of price on petroleum will be significant as petroleum is considered a necessary commodity. However, the result from the fourth hypothesis was not confirmed, according to the stated hypothesis, the statistical verification showed that petroleum production have a negative impact on the GDP per capita, the result is not surprising as a result of the various problem faced in Nigeria as a result of oil dependency . However petroleum production have a significant effect on GDP per capita as a measure of the economic growth which confirms the last hypothesis.

Based on the result gotten from the analytical part and the literature framework of the thesis, it fair to conclude that the negative impact petroleum production pose on economic growth of Nigeria is more than the positive contribution of it to the economy. There is no disputing the fact that production of petroleum have contributed to employment opportunities and provided revenue for government but it's relative impact in terms of return is still questionable which is caused by uneven distribution of wealth, vandalism of petroleum infrastructure, corrupt malpractices by the government, increased criminal rate and resulted to low level of security . Nigerian can gain its ground if the government can propose economic reforms projected to achieving full economic potential. The most important focus should also be based on diversification of the economy by employing other sector instead of depending completely on the petroleum sector as it is proven that resource abundance will translate to economic growth but resource dependency will have no impact on the economy.

The forecast carried out in the last part of the thesis showed that the Gross Domestic Product per capita in current USD between 2013 and 2014 will increase slightly by 11% but the economy might be vulnerable in 2015, at the time of writing the thesis there is an ongoing

campaign for the presidential election which is planned to take place in April, 2015. The change in government have always precipitated the need to make new policies which might not be favorable for a developing economy like Nigeria. There was a recent development whereby the price of oil fell from \$0.48 to \$0.43 per liter, this was the political agenda of the present government to seek for vote from the electorate but they neglect the fact that Nigeria is vulnerable to fluctuation in the price of oil. There is no disputing the fact that interference in government over the oil industry has definitely translated negatively to the economy and has hindered sustainable growth. Nigeria could gain its ground in relation to economic growth if the proper policies are put in place by the government.

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