Abstract

This study will systematically analyse in general, terms and activities of oil and gas economy globally. With a view to having a broader understanding of the concept of origin of crude oil and natural gas with reference to Nigeria, Nigerian first commercial activities in the petroleum industry, its socioeconomic benefit to the economy, and the structural disposition of oil and gas organization in Nigeria as a reference point. In order to impact scholarly knowledge to academia, stakeholders and all those in search for honest means to acquire knowledge. Today international petroleum industry is radically different from what it was in 1940, yet, it remains as highly politicized as it where in the days of resource nationalism decades ago when oil became a major issue in both international and national political economy discourse. Those who started the business of crude oil have dwindled in number, except for the oil exporting countries that recently had to bear an extraordinary burden of adjustment when petroleum products prices persistently remained relatively unstable from when it was discovered to date. Even so, petroleum issues has remained significant subject of discuss in a wider political setting. Less than three decades before now, developed economy has engage on battle of survival instigated by crude oil politics and international price volatility. Modern price theory have been applied to stabilizes this inconsistence, yet, price of crude oil and gas has continued to determine the socioeconomic and political direction, growth and development of major oil producing nations of the world.

KEYWORDS*: the origin of crude oil and natural gas in Nigeria, its economic benefits to the economy, and structural management of the oil and gas organization in Nigeria.*

1.0. INTRODUCTION

Before the emergence of crude oil and natural in Nigeria, the country's prime export earnings was agricultural products, and was globally recognised from that perspective. In a Neolithic era, agriculture was central to the general wellbeing of global citizens. Thus, different societies place high concern on agriculture and endeavour to improve and nurture the sector, whereby assuring sustainable food security, employment opportunities and revenue generation amongst others globally. Nigeria, whose population is about 175 million with vast geographical spread across millions of fertile lands for crop cultivation, livestock grazing, pure sea waters with species of fishes and abundance of historic natural rich forest, with about 75 percent of her population rural dwellers, involved in agricultural activities had in the past contributed to economic development in Nigeria.

The immense role played by agriculture sector in development of Nigeria before the discovery crude oil, is what is today referred to as Nigeria, her people, and her cultural pride both in socio-political and economic spheres as documented, by her

colonial master abroad. The sector produced raw materials that accelerated industrial revolution in Europe initiated by the British, with palm oil from the coaster states of the Bight of Benin (south/south) used as engines fuel (gas) in Nigeria as it were. Though, technologically regressive compared today modernity, yet, produces were just enough food crops to feed the timing population and also responded to the needs of other countries of the world, such as Tran Saharan trade within Africa. At the abrogation of slave trade by the Western world, legitimate trading policy became the new order. Occasioned by Europe industrial revolution was a huge dependent on raw agricultural products to energise their economy. The needed exported raw agricultural materials like; timbers, palm oil, and elephant tusks just to mention but a few, were exported to Europe to sustain their economy. However, the periods of pre-independence and post-independent struggles slowed down the progress of the sector, yet, agriculture remained the mainstay of the Nigerian economy before crude oil was discovered in 1950 in commercial quantity at Oloibiri, Nigeria.[1]

Nigeria is endowed with vast natural mineral resources, prominent among these include: crude oil, natural gas, lime stone, tin, columbine, kaolin, gold, silver, coal, lead, zinc, gypsum, clay, shale, marble, granite, iron-ore, stone, and zircon. The persistent problems of social economic integration have been a major concern of Nigeria since independence. Over decades, problems of systematic policy guide on national integration, democratic stability and sustainable socio-economic development have eluded the Nigerians. These problems had their roots from pre-colonial days, when crude oil exploration began in 1908 when a German oil firm discovered exploration sight at Araoni, presently Ondo State in Nigeria. Exploration was short leaved in 1914, due to British amalgamation policy of the North and South proletariats coming together to form one nation known as Nigeria today. However, in 1937, exploration resumed led by Shell oil firm. There was another break in exploration activities in 1939 due to political crises and exploration commenced unhindered, in 1947 respectively.

Nigeria exported her first commercial quantity of crude oil of about 5,100 barrels per day (bpd) in 1950. Shortly after independence in 1960, the nation experienced military coup d'état from 1967 to January 1970, in between was a three years civil war, which lasted till October 1970. They ruled till 1979. There was a break from 1980 to 1984 when democracy was experienced within these few years. Once again, the military resurfaced in 1985 and held on to power till mid-1999 when the Abdusalami's military regime relinquished power to a democratically elected president, President Olusegun Obasanjo government in 1999. Within this retrogressive era of military dictatorship, petroleum economy suffered series of policy set-backs, and corruption. Yet, the economy was a little bite above recession due to

[1] Eko John .N. (2014), Agriculture in Nigeria.

accrued petroleum earning generated previous leader. Oil and gas has remained the mainstay of the Nigerian economy.[2]

1.1. Research Problems

This research work intend to address some salient challenges confronting the origin of the oil and gas sector in Nigeria with a view of referral on other country's derivable oil and gas organization. Over the years, industry watchers, opinion molders and civil rights campaigners have been very critical of the role being played by stakeholders and government in the oil and gas industry vis-à-vis their commitment to economic benefits and policy implementation, these were viewed as complaisant attitude of investors towards better service delivery, as they are more concerned with profiteering and individual class benefit. This gave rise to numerous challenges which have been identified as critical to the success of any resolution of the problems of oil and gas industry. These include:

- Ineffective policy direction and Implementation of government,
- Petroleum Products Price volatility as a result of inadequate supply and poor distribution network system resulting to protracted queues at filling stations,
- Illegal bunkering and cross-border smuggling and hoarding of petroleum products;
- Untapped natural gas potentials over decades.
- The sorry state of the four local refineries and disrepair of logistic facilities (pipelines, depots and jetties) due to vandalism across Nigeria, and
- Primitive acquisition of state wealth (corruption).

The above are remote causes for the lingering, and intractable crisis associated with the petroleum industry. These were predictable outcome of failed policy programmes.[3]

1.2. Objectives of Research

The objectives of this research is to examine current changes in the oil and gas industry, analysis on the historical dispensations of Nigerian oil and gas discovery, its economic benefits to the economy since inception, and structural management of oil and gas organizations, the role of NNPC in government policy direction as it regards oil and gas sector in Nigeria. The aforementioned objectives provide us insights that will contribute in answering our research questions.

[2] NNPC (2015), History of Nigerian Petroleum Industry
[3] NNPC (2011), Corruption at NNPC.

1.3. Research Methodology

This study examines the method, design and characteristics of the research procedure, determination of data collection base on content analysis.

- **Research Question**

  In order to effectively conclude this study, the following question below will give empirical analysis (answers) to the research questions as follows:

  i. Are the activities of Nigerian oil and gas industry justified in terms of its economic benefit?
  ii. Is it a catalyst for industrialization of the country?
  iii. What role does NNPC plays on behalf of the government to ensuring policy actualisation in the industry?
  iv. Will the discovery of natural fast-track development in Nigeria better than petroleum?

- **Research Propositions**

  To adequately carry out the research work, the following propositions are made**:**

  i. Discovery of oil and gas in Nigerian has not impacted negatively on the economy;
  ii. The oil and gas industry in Nigeria has only made the government to begin to re-think on how to develop alternative sources to crude oil.
  iii. To allow the LPG market growth and develop as alternative energy source.
  iv. The agricultural sector can boost socioeconomic growth if revamped.

2.0. OVERVIEW OF OIL AND GAS FORMATIONS

There is this general assumption that crude oil and natural gas resides in huge structures deep underground caves. Geologist in various literatures on geological research carried out on rocks (sedimentary rock) states that crude oil is formed or yields with deposit of dead marine organisms together with silt, sand, and other sediments which build up rocks under the beds of the sea. The build-up of rocks; layers continued to develop consisting organic matter of marine organisms creating higher temperature and pressure without oxygen amidst the effect of these combined factors of temperature, pressure, time and catalysis begins to have chemical reaction upon these marine substances gradually starts breaking-down, transforming these components into hydrocarbon compounds which was initially trapped in small

pockets (pores) holes within the rocks. The outcome of these formations turns into chemical liquid known as crude oil and natural gas.

However, shortly after the formation of these components into petroleum substances under the bed of the rock, migration begins to take place in an upward direction through the rock bed source via porous rocks. Thus, gas, oil and water under same components forceful moves slightly different towards a direction. The composition of Gas is fewer dens to oil, oil less dense to water. Thus, oil and gas lightened up weight to move upward surface water because water velocity is heavier in component. The systematic movement of these components (gas, Water and oil) allows a chemical reaction that subsequently trap petroleum substance under a Cap Rock (impermeable layer), which subsequently flows along this cap rock until it cannot move further. At this point, it is trapped, while migrating process continues as oil and gas pressure begins to develop under this impermeable rock until it becomes economic goods.[4] See figure 1.1.

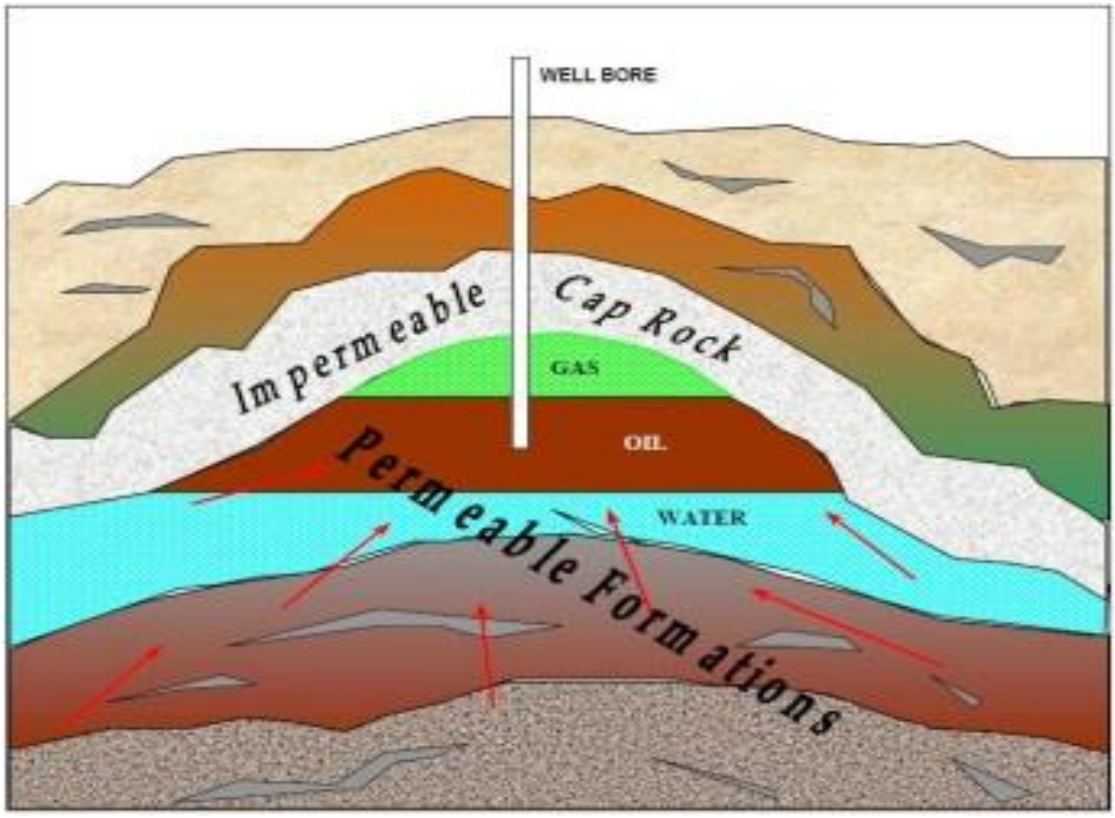

Figure 1.1: oil & gas Impermeable Rock formation.[5]

[4] Narris .A. (2014), The Origin and Production of Crude Oil & Natural Gas

[5] Shell Petroleum (2014), Origin of Oil & Gas

Geologist classifies known forms of petroleum accumulations as folds, stratigraphic traps known as reservoirs or structural traps, measuring about 90 percent of petroleum reserves that occurs in traps. They are characterized as follows:

- It possesses sedimentary origin.
- Rocks are permeable and porous.
- The features of reservoir are capped by a non-permeable rock bed.

Furthermore, most worlds' crude oil depths range between 600 and 3000 meters below the earth surface. While Gas tends is deeper than oil and more stable at higher temperature. In some instances, its formation becomes a primary product in source rock.[6]

2.1. Shale Gas

Shale gas could be described as natural gas trapped within shale formations. Shale gas is rich sources of petroleum products found within fine-grained sedimentary rocks. Over centuries, the method adopted in exploration activities of shale gas is through the combination of horizontal drilling and fracturing hydraulic method, used to create access to large volumes of shale gas that were previously uneconomical to produce. This new technology in production of natural gas from shale formations has reawakened the economic global benefits of natural gas industry to the world economy.[7]

In natural gas exploration, two major methods are adopted; these are horizontal and hydraulic fracturing drilling methods:

- **Horizontal Drilling**
  Horizontal well drilling is a technique that provides greater access to gas trapped in deep producing formation of shale gas. The first approach a technique is the used vertical well drilled approaches to target rock formation. After ascertaining the desired depth, drilling bit begin to bore a well that stretches through the reservoir horizontally exposing the well to where more of the producing shale is concentrated.

However, studies shows that most drilled wells contain more water than oil natural gas information. After hitting target, it stimulates the reservoirs in ways that cannot be achieved with a vertical well drilling machine. In these cases, an ability to accurately steer the well in directions and angles that depart from the vertical is a valuable ability further attract the combine directional drilling with hydraulic fractional

[6] EIA (2010), '' Energy in Brief'

[7] EIA (2010), Shale Gas.

drilling techniques to extract some rock materials which were unproductive when applied vertical drilling method becomes producers of oil or natural gas.[8]

- **Hydraulic Fracturing**

This drilling techniques entails hydrocracking or fracking process in which chemicals, sand and water are introduced into wells to trapped residing hydrocarbons in shale formations through opening of cracks in rock and allow natural gas to escape from shale into the well. The use of hydraulic fracturing exploration techniques, allows gas explorers to extract shale gas at reasonable cost.[9]. See figure 2.1.

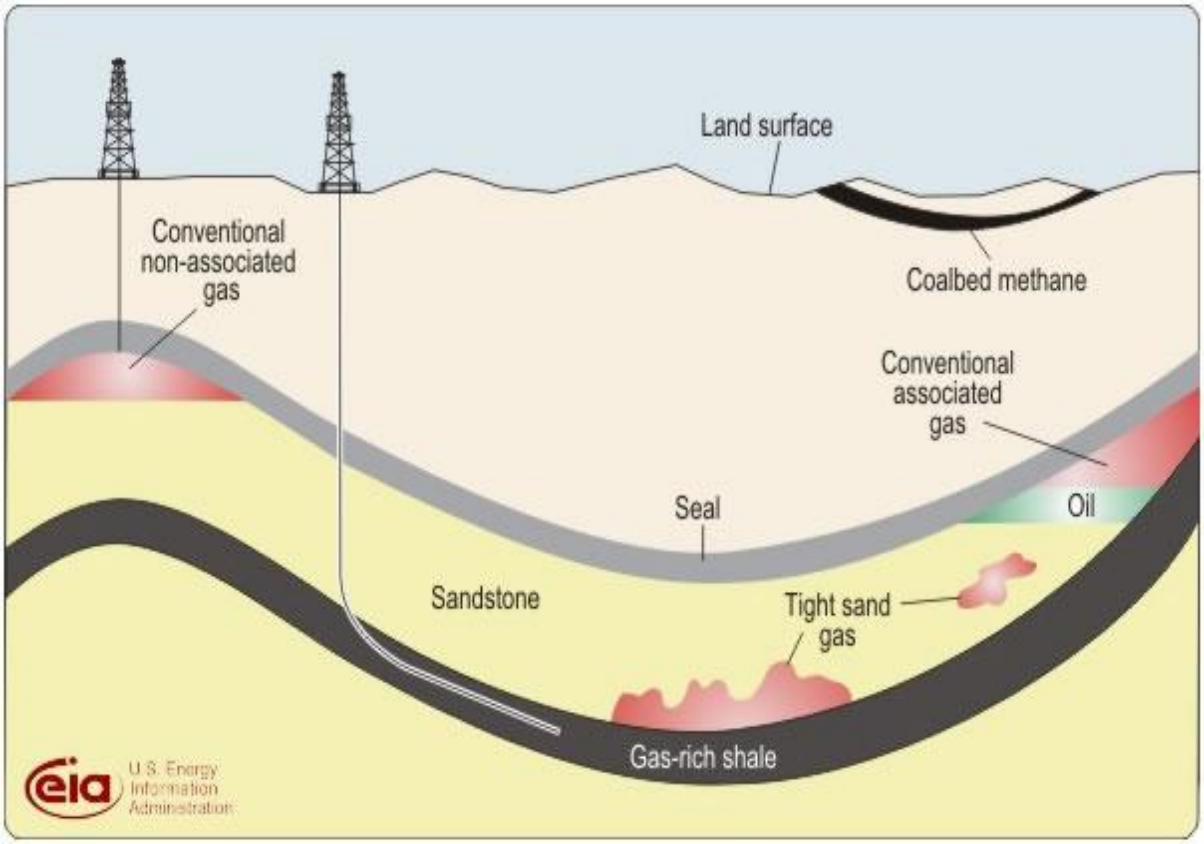

Figure 2.1. Sample diagram sourced from USA-EIA (2010)[10]

The USA has approximately 110 years sufficiency build up plan for consumption of natural gas. The country process about 2552 trillion cubic feet (Tcf) of natural gas potential with about 90 percent consume domestically. thus, supply of gas in the US is locally sourced and produces and not dependent on foreign investors like crude oil supply , making the delivery process less subject to interruption and price manipulation. The availability of large quantities of shale gas will further allow the United States to consume a predominantly domestic supply of gas. The US Shale

[8] Geoscience News and Information (2015), Directional & Horizontal Drilling in Oil and Gas wells.
[9] EIA (2014), Hydraulic Fracturing of Shale Gas.
[10] USA EIA (2014) Natural Gas Diagram formations.

gas resource and production is projected to increase significantly between year 2015 and year 2016 as alternative energy source given the continuous down ward slide in global crude oil supply, demand and pricing.[11]

Unlike the United States high consumption profile, Nigerian with about 187 trillion standard cubic feet (Tscf) of gas reserves, is still yet to come to term with the existing and huge potential associated with gas market in Nigeria as consumption and awareness pattern is still very incommensurate with that of crude oil business.

There is growing concern on new discoveries of natural gas in deep offshore being made in Nigeria in recent times, as against the old discoveries in Akpo, Erha, Bonga, Egina, Agbami, Usan and others in the South-South region of the country. However, lots of new discoveries and exploratory programmes are ongoing. For instance, high pressure drilling and high temperature deep drilling exploration by Shell is currently on at the moment in Nigerian. This is with a view to explore existing potentials to enrich its socioeconomic environment of the nation.

With high determination of natural gas exploration, the country is hoping to be one of the most sought for gas market in Africa as the expectation on deep-water and offshore deeper drilling may lead to discovery of more hydrocarbons. The expectation and stake is quite high in this regard.

The current quest for alternative source of energy is to empower power electricity in the country has been a driving force for more gas rather than petroleum products. Thus, the 2020 projection for gas for all Nigerians might just come to pass with ongoing determination for gas exploration and utilization awareness programs by government and NGOs for domestic and industrial consumption might just be socioeconomic revolution the country is waiting for. The awareness on Liquefied Petroleum Gas (LPG) consumption has created very strong domestic and international market awareness. Suffices to say unequivocally, that Nigeria has abundance of gas than crude oil, thus, government is determined to use gas to generate electricity in the country.[12]

2.2. Commercialization of Oil and Gas Section

The present state of Nigerian oil and gas industry and its achievements made are of great concerns to Nigerians. Hence, the government charted a new roadmap with a view to reposition the sector for better efficiency as earlier discussed in this study. The roadmap objective is making and reorganizing the sector to favourably compete with global oil and gas industry, while remaining as the mainstay of the country's economy activities in terms of export and foreign exchange earnings. Although subjected to the menace of pipeline vandalism for decades now, but, in the last few years it has become much more preventive. In

2013 alone, major transmission export pipeline systems, including: Obabgbiri, TimmDaba-Brass, Trans-Forcados Line; Nembe Creek Trunk line, and Trans-Niger

[11] EIA Annual Energy Outlook (2011), Today in Energy

[12] Oboarekpe (2014), Shale Gas is a Threat to Nigerian Crude Oil Export

Pipeline have relentlessly been vandalized. The pipelines that transmit crude oil from Escavoe and Bonny to Nigerian National Petroleum Corporation (NNPC) refineries were sabotaged. This impact trickled down significantly as economic losses, for the sector and country. These losses are not only interim of financial, also on indirect and direct cost for provision of security, petroleum products and crude oil and losses, loss associated with environmental pollution, production degradation and associated remediation costs and resulting in escalation of project implementation costs.

These losses reversely pressurise the adequacy of the budgetary provision for projects of the sector. Despite these challenges, the sector has consistently maintained average crude oil production of about 2.3 million barrels per day (bpd) in 2013 for the country, with an estimated deferred production of about 300,000 barrels. Nigeria is Africa's biggest crude oil and gas producer with a production capacity of over 3 million barrel per day (bpd) from renewed operations in divested assets and planned deep-water projects. While there were divestments by oil trans-national corporations in shallow waters and onshore assets, whereby creating opportunities for indigenous operators to participation into oil and gas business.

Despite security challenges, the industry had suffered institutional capacity deficiency, high technical cost, obsolete legal framework, outdated fiscal regime, poor funding on investments, and infrastructural constraints, with particular respect to gas market liberalization. In aspect of institutional capacity, it is obvious that existing petroleum laws in the country was designed for petroleum oil production, without projecting gas legal framework (law). This implies as it were, that gas products is being less fungible compared to oil, requires complex commercial and technical regulations, designed to ensure its commercialization. Furthermore, Nigerian decision to liberalizing the oil and gas sector motivated indigenous and foreign participation to invests in the sector, and for the sustainability of these investment, new code of conducts are required to regulate the activities. While the gas sector requires capacity enhancements in open access regimes, codes and tariff methodology for oil terminals, there is the need to establish oil and gas infrastructure protection squad with responsibility for dealing with industrial vices associated with crude oil theft, sabotage, vandalism, and other criminality, which have bedevilled and cost the sector about N250 billion crude oil product losses.

However, through NNPC subsidiary, Products Pipelines Marketing Company (PPMC) has about 5,120 kilometres of oil and gas pipelines across Nigeria. These include about 4,315 kilometres of multi-product pipelines and 666 km of crude oil pipeline. While, the Nigerian Gas Company (NGC) has about 1,100

Kilometres of gas pipelines, stretching diameter between 4 and 36 inches respectively. The entire gas operations has a total transport capacity of about 2 billion cubic feet of gas daily (Bcf/d), and 14 compressor stations, including 13 metering stations. Example is; the Escravos /Lagos domestic gas consumption

Pipeline System (ELPS), established in 1990. However, new pipelines continue to spring up due to oil and gas potentials in the country.[13]

These pipelines were established decades ago and have become obsolete and depreciated and unusable. This situation influenced cost of product supply and distribution negatively, tripled the cost of pipeline maintenance and environmental remediation cost was frequent and expensive. Moreover, since 211 to date, the petroleum sector has witnessed a tremendous improvement in performance levels, which placed the industry on a renewed path of growth and sustained development. Some of the remarkable achievements within this period include, ensuring annual average crude oil production of about 2.4 million barrel per day (bpd) of crude oil, an increased gas production from about 6.6 to about 8.5 billion cubic feet (Bcf), in 2013, despite incessant chokings as earlier mentioned, the sector has unprecedentedly stabilized its distribution and supply network of petroleum products across the country, until the very recent when the country begin to experience products shortages created by supply glitches panic buying, hoarding and diversions engendered by rumours of increase in the price of petroleum products.[14]

3.0. GENERAL ANALYSIS

The general analysis of this study is to systematically analyse, terms and activities of global oil and gas industry, with a broader understanding to the Nigerian concept, and origin of crude oil and natural gas potentials. Nigerian first commercial activities in the petroleum industry, its socioeconomic benefit to the economy, and the structural disposition of oil and gas activity management in the Nigerian as a reference point.

3.1. Oil and Gas Reserves around the World

Studies revealed, that most global oil and gas reserves are stock in Middle East, and strategically located in countries like; Italy, Australia, New Zealand and Malaysia. OPEC leading giants include Iraq, Saudi Arabia, Iran, United Araba Emirate and Kuwait. Canada, Russia, China, Venezuela, Brazil, Mexico, Norway, Great Britain, Texas in United States, and Nigeria, California, Louisiana, Kansas, Oklahoma, and Alaska produces oil and gas also. Recent discovery shows that North Sea, South America, Africa and the Gulf of Mexico have large offshore reservoirs. [15]

A Nigerian current estimated proven crude oil reserve is about 32 billion barrels (Bb). Bulk of these reserves is sighted in relatively simple geological structures along

[13] NNPC (2010), NNPC: a pipeline of opportunities

[14] Ogodo Douglas (2014), Nigeria's Oil industry: Moving it to the Next level

[15] John Mossesso .J. (2014), Origin of Oil & Gas National Biological Information Infrastructure (NBII)

Niger Delta coastal area of Nigeria. And it has continued to gravities ranging from 21º API to 45º API base on new discoveries of reserves in the deep off shore. Furthermore, about 65 percent of Nigerian cruel oil production specification is crude light with 35º API or higher and crude sweet with low sulphur content. These two specifically of crude oil has been judge one of the best in world crude oil market. Between year 2002 to year 2003, Nigeria crude oil averagely produced about 4.136 million barrels per day (Mbpd). This attracted a subsequently reduced Nigeria's quota to about 2.020 million barrels per day (Mbpd) in anticipation of returning Iraq back to the market.[16]

However, due to incessant insecurity by the Niger Delta militant on the attack on oil and gas installations in that region, the OPEC designated 1.67 million barrels per day (Mbpd) production quotas could not be attained. But OPEC is determined not to further cut production quota of the country to avoid negative impact on nation's oil production.[17]

In year 2011, the country's production was about 2.6 million barrels of crude oil per day (bpd), which amount to about 650, 000 barrels above OPEC expectation of 1.67 million barrels per day (Mbpd) quota as integrity work on pipelines is still ongoing, after years of militant attacks. The situation gave a ray of improvement from 1.3 million barrels per day (Mbpd) in 2008 to 2.6 million barrels per day (Bbpd) in 2011, as a result to the restoration of system 2C, which supplies crude oil to Warri and Kaduna refeneries. There was a sharp upward movement in crude oil reserves to about 31.218 billion barrels per day (Bbpd), barrels of condensate reserves increased to about 5.314, gas reserves was standing at 187.6 trillion standard cubic feet (Tscf), associated gas stood for about 92.945 barrels per day (bpd), and non-associated gas was 89.871 barrels per day (bpd) respectively. Although the current gas production in 2011 was about 6.8 billion cubic feet per day (Bcfpd), while about 1.4 billion cubic feet (Bcf) is still being flared on a daily basis. Hence, government determination to achieve growing reserves of about 45 billion barrels with an increase production of 4 million barrels per day (Bbpd), through aggressive exploration activities.[18]

Despite the current global oil prices glut, OPEC Members resolved to maintain the supply of crude oil on designated current production quotas for Member Countries. In the mid-2014 and early 2015, there was unprecedented decline in global crude price, which had a negative impact on Nigerian economy. Since administration of her domestic economy is largely dependent on export earnings from crude oil. An OPEC 12 basket of crude averaging about $100 per barrel at the wake of year 2015, astronomically declined to about $75 per barrel and subsequently declined further to about $55 per barrel shortly afterword's.

[16] Ogodo .D. (2014), Nigeria's Oil industry: Moving it to the Next level

[17] Guardian News Paper (2014), Security Issue Stalls Nigeria's OPEC Quotas Target.

[18] Ejiofor .A. (2011)Crude Oil: Why Nigeria's Output Exceeds OPEC Quota

This unprecedented oil famine, gave the Nigerian government another think cap, that gave rise to ‘‘Gas to Earth Initiative’ ’project that is currently ongoing. Objective is awareness of gas utilization, with a view to reposition the gas sector as alternative to crude oil.[19]

In funding of crude oil operations in Nigeria, ChevronTexaco, Shell, ExxonMobil, ENI – Agip and TotalFinaElf, all have a joint ventures account with NNPC for about 95 percent of Nigerian crude oil. Other arrangement for funding the oil operation in Nigeria are through production sharing contract, under which the companies fund the operations and the profits are shared according to the agreed formula after the company has recouped its expenditure. Furthermore, government over time has created various forms of investment incentives, such as tax holidays and a stable relationship to investor with a view to encourage indigenous and foreign investment drive in oil and gas industry.[20]

The petroleum sector is the biggest industry in Nigeria contributing approximately about 88 percent of foreign exchange earnings and about 85 percent of government revenue growth rate to gross domestic product (GDP). Since the discovery of large commercial quantity of crude oil by Royal Dutch Shell in year 1950, at Oloibiri, Nigeria. The sector has been characterized by political and economic uncertainty largely due to mal-administration, poor policy direction, corruption and activities of Six Transnational Oil Corporations; Shell, Elf, Agip Mobil, Chevron and Texaco monopolized oil and gas industry in Nigeria holding about 8.55 percent property equity share in the business oil and gas.

Nigerian oil and gas consist of seven major stakeholders; Nigerian National Petroleum Corporation (NNPC), Federal Government represented by the Ministry of Petroleum Resources, Directorate of Petroleum Resources (DPR) upstream regulator, Petroleum Products Pricing Regulatory Agency (PPPRA) a regulator on downstream activities of the sector, Petroleum Equalization Fund & Board (PEFB) equalizes petroleum products bridging payment through trucking, from one end of the country, Petroleum Technological Development Fund (PTDF) responsible for manpower development of industry personnel and Petroleum Training Institute (PTI) and oil and gas training institute for young Nigerians to acquire skills in oil and gas activities.[21]

The policy guidelines of petroleum activities in Nigeria is solely decided by government via NNPC; that is, initiate and implement oil and gas policy direction in the sector. Nigerian oil and gas industry legal framework is currently obsolete, hence, the current Petroleum Industry Bill (PIB) reform, awaiting ascent from legislatives arms (National House Assembly) of government, updating its status to

[19] Bassey UDO (2014), OPEC Retains oil Quotas Despite oil pric Crash.
[20] NNPC (2015). Investment Opportunity in the Downstream Sector.
[21] Baghebo .M. & Timothy Okule. A. (2012), The Impact of Petroleum on Economic Growth in Nigeria

global standard. Although, several bills have been enacted to chart sustainable roadmap on oil and gas activities; exploration, refining and marketing in the past, these include: 1969 Petroleum Act know as CAP 350, 1966 oil pipeline Act, 1978 land Use Decree, the Indigenization Decrees of 1970, and the current ongoing Petroleum Industry Bill (PIB) of 2012. The bill when passed will reposition the entire oil and gas sector for optimum efficiency, that will enable conducive business environment, energise domestic gas utilization for power generation and industrial growth, enable a process that will encourage fiscal framework for investment, while ensure return on investment for operators, a very strong commercial portfolio in downstream and upstream industry and finally, it will boost local content efficiency that will subsequently promote growth and development of the country's economy.[22]

3.2. Oil & Gas Benefits to Nigerian Economy

Though the nation at independence inherited sophisticated nationalists, politicians and statesmen, its economy was still profoundly underdeveloped, based solely on export-driven agricultural products, petty trading and small and medium scale manufacturing activities. These economic activities were specifically designed to generate agricultural products, such as cocoa, palm- kernel, cotton and groundnuts. With a view to supply its raw materials to industries in the United Kingdom and other parts of Europe. The trade sector was dominated by a number of British multi-nationals who engaged in buying and selling of finished goods from Africa Countries to Europe. This situation led to post-independent economic set back in Nigerian economy, particularly from the late 1980.[23]

The genesis of economic crises in Nigeria is traced back to structural deficiency during pre and post-independence era. Between year 1962 and year 1985, four national 'Development Plans were implemented. First, is from year 1962 to year 1968, second Plan was in year 1970 to year 1974, the third Plan took place from year 1975 to year 1980, and the fourth national plan was from year 1981 to 1985. There was also the first National Rolling Plan of year 1980 to year 1992 as part of economic projection plan to develop the country's economy. The objectives of these plans include the following:

- Increase real income of average citizens;
- Equitable distribution of income among individuals and socioeconomic groups;
- To reduce unemployment to its barest minimum;
- Increased manpower development;

[22] The Petroleum Industry Bill (2012), Nigerian Oil and Gas Legal Framwork.

[23] Ikpamejo .A. (2011), The Issue of Corruption on Economic and Political Development in a Developing Economy: The Way Forward.

- To increased sectorial and regional balanced development;
- To increased Nigerians participation in ownership and management of production and enterprises;
- To be self-sustaining economy through dependence on local content development process; and
- To maintain macroeconomic stability.

In the light of the foregoing, the nation's economy is very much undeveloped, likened to Neolithic era. Bedevilled by unprecedented poverty; high executive corruption among military elites, industry stakeholders and smaller group (oligopolistic) of Nigerians. Other negative feature includes; unfavourable practices of mono-economic policy (total dependence on petroleum); lack of executive capacity; and the dependency theory (massive importation of goods and services) without domestic equilibrium measures taken.[24]

At the wake of oil boom in 1970, there were fundamental changes in the Nigerian economy that strengthened her diplomatic role in the International Community. The period experienced economic boom which triggered real GDP growth in all sectors of the economy. Examples are: infrastructural development improved, foreign earnings increased, attraction of expatriate into country for skill transfer and technological acquisition, improved in per capital income of an average Nigerian, and economic viability went on pretty well until mid-1984 when corrupt military elites forcefully took power from a civilian democratic elected government. From that time till now, the expected benefit of crude oil and gas is remains an illusion.

Prior to the year 1986, Nigerians begins to witness a traumatic economic crisis. That is, there was heavy dependence on crude oil export as the main source of foreign exchange earnings and government national budgetary projection. However, in 1980 the sector could only account for about 22 percent of the country's GDP, 80 percent of government revenue and 96 percent of earnings to encourage structural policy incentives and controls the influxes of import oriented products with little incentives for non-oil exports. This situation eroded the high competiveness recorded in agricultural sector in the 1960 including, over-value Nigerian naira exchange rate in world market; inappropriate pricing of Nigerian crude oil in the international market; rural-urban migration and colossal waste emanating from the wind-fall from oil in 1970 had a trickle down negative impact on the economy.

Furthermore, the inappropriate and ineffective policy of the past, such as the Economic Stabilization policy of year 1982 and Economic Emergency Measures of 1985 and depletion on oil prices aggravated the economic quagmire giving corruption a sky-space encouragement. As result, these measures drastically decreased supply of raw materials and spare parts to import dependent industrial

[24] Lawal .T. and Oluwatoyin .A. (2011), National development in Nigeria: Issues, challenges and prospects.

sector in the county, forcing these sectors to liquidate, substantial drop in capacity utilization and the down-sizing and right-sizing of huge work force. Thus, at the end of mid-1980, real per capita income and consumption level fell simultaneously with the total elimination of the middle-class structure, creating internal and external imbalance in receipt of payment, while external debt services rose to about 45.07 percent in 1985, and between 60 to 70 percent in 1990 respectively.[25]

The Nigerian economy is faced with diverse challenges and opportunity. Yet, its crisis seems to occur about every decade at the instance of crude oil price fluctuation in the international market. As exporter of crude oil, international price volatility will obviously have a negative impact on the domestic economy, both at short and medium term. Given that crude oil reserves are relatively depleting in previous years. In 2014, reserves depleted to about 23.1 percent as against 35.2. Billion barrels (Bb) in 2013. This supposedly infers that Nigeria imports refined petroleum products and subsidises its retail cost to consumers. This in the long run had a negative impact on government expenditures. Further decline of prices of petroleum products attracted other negative challenges to economy. The situation subsequently widened supply gap in foreign exchange market, astronomical imbalance in demand for dollar, as dollar outweigh supplies, thereby disvaluing Nigeria naira downward, and making our export crude price irrelevant in global market. This situation subsequently deepened and depleted the existing crude oil reserves.

However, while development do pose challenges, government reactiveness in anticipation, formulated policies that with address future negative price shock of crude oil prices some of which had been rolled out in the current year of 2015 budget presentation; shoring up non-oil revenues by increasing the tax base, while cutting down government expenditures. Although, global crude oil price shocks which resurfaced mid-2014 and spilled to current year 2015, had a declining negative impact on government expenditure on development of social infrastructure of the country. Having, a negative multiplier effects on other sectors of the economy as a result of insufficient funds. Thus, government prioritization of infrastructure development; roads and power are likely to remain top most agenda, based on projection and expectation of an increase in oil and gas revenue by mid-2015 of about 5.6 percent, as non-oil sector of the economy is projected to energise growth. While between 2015 through 2017 period, growth is expected to average 5.7 percent respectively. See figure 3.1.

[25] Middleton .P. (2007), The End of Oil: the Gulf, Nigeria and Beyond

YEAR	2011	2012	2013	2014	2015	2016	2017
GDP DEVELOPMENT	5.31	4.21	5.49	6.23	5.54	5.78	5.80
INFLATIONARY TREND	10.83	12.22	8.50	8.05	8.78	8.10	7.52
SUMMATION	49.21	-4.30	-24.26	18.40	9.66	2.48	3.01

Figure 3.1. source: National Bureau of Statistics (2014).

Political economists have speculated further pressures on crude oil prices as a result of political uncertainty and insecurity in Nigerian environment as it were in previous years of 1999, 2003, 2007 and 2011 respectively, witness only one year that had an increase in inflation index. An upward pressure on inflation rates depreciated the Naira as inflation rose to 8.8 percent in first quarter of 2015, and expected to remain moderately stable at 8.13 percent by the end of 2015 to 2017 periods. However, the decline in crude oil prices had its toll on the value of oil exports, while the continued depreciation of the local currency is expected to promise well for non-oil exports goods. The depreciation also implies that imports are likely to be more expensive and likely to slow down importations activities. Thus, value of total trade was therefore projected to increase by 9.66 percent in year 2015, an average of 5.05 percent over the forecast period.

In 2014**,** Gross Domestic Product growth was about 5.59 percent in the first quarter of 2014, a rate that was 0.54 percent lower than that of preceding quarter; yet, it was about 1.76 percent greater than was recorded in the corresponding quarter of year 2013. At 6.54 percent in the second quarter growth was 0.33 percent higher than that of first quarter. This was also over a percentage point greater than the rate of 5.40 percent recorded in previous year. The third quarter was relative to the second quarter, which saw a slight downward growth, of about 0.32 percent to 6.2 percent. Not with standing, this remained 1.06 percent greater than the year on year rate of 5.17 percent recorded in 2013.[26]

Real gross domestic product (GDP) was about N15, 438,679.50 million in first quarter of 2014, a quarter rise of 9.88 percent from N17, 132,164.77 million recorded in the fourth quarter of 2013. The Nigerian economy gained growth in the second and third quarters of 4.18 percent and 8.67 percent respectively.

There was a steady decline in the average growth of crude oil and gas output in year 2014. In first quarter 2014; crude oil production was about 2.26 million barrel per day (Mbpd), valued at about N2, 612,066.21 million in nominal terms. The second quarter of 2014 experienced a decrease of about 2.21 million barrels per day (Mbpd), totally about N2, 633,328.61, of 7.6 percent increase with an average dollar price of crude oil from $104.31 to $112.25. The third quarter experienced decline in

[26] National Bureau of Statistics (2014).

production of crude oil of about 2.15 million barrels per day (Mbpd), valued about N2,328,257.79 million in nominal terms.

The oil sector real growth stood at about -6.60 percent in the first quarter of 2014. This implies a 2.76 percent increase from the -9.36 percent growth recorded at the end of 2013. That is about 4.79 percent greater than -11.40 percent earlier attained in 2013. The sector subsequently picked up in the second quarter, increasing to about 5.14 percent in second quarter; and further increased by 21.57 percent from 2013 and decreased by -16.42 percent recorded in the corresponding quarter of that year. Nonetheless, this growth was short lived and, by the third quarter slipped back into the negative at -3.60 percent, an 8.74 percent decline from that of second quarter, but moved up to 11.12 percent towards the end of 2013.

The non-oil sector of the economy has contributed in sustaining growth of Nigerian economy in 2014. At the first quarter of the same year, the non-oil sector growth was at about 8.21 percent, despite being 0.57 percent lower in the previous year of 0.76 percent of 2013. By second quarter of 2013, there was a downward movement in the growth rate of about 1.49 percent from the opening quarter of the year to about 6.71 percent greater than 2.17 percent points below that of second quarter of 2013. The third quarter recorded an upward movement real growth, from about 0.79 percent to about 7.51 percent yet; lower than that of 8.46 percent growth rate recorded in the third quarter of 2013, as well as being lower than the 2014 peak of 8.21 percent. However, year 2014 generally experienced decline in non-oil growth due to slowdown in growth of service sector.

In year 2014, agricultural sector contributed about N3, 033,970.43 million to real gross domestic products (GDP) in the opening quarter of 2014, which is about 19.65 percent of the quarterly total. It further increased to about N3,360,450.48 million of 20.89 percent of the total amount in the second quarter of same year, and remitting about 4, 655,322.16 million in third quarter, with 26.63 percent of Nigeria's real GDP. Agriculture sector comprised of four divisions; Crop Production, Livestock, Forestry and Fishing. The biggest of these divisions is Crop Production. A major driver of growth of agricultural sector, contributing about 85.91 percent and 90.13 percent growth in first, second and third quarters of 2014 respectively. Fishing division is the fastest growing of the sector, exhibited a growth of about 8.40 percent in the first quarter of 2014, declined to about 4.89 percent and subsequently increased to 6.72 percent growth in the third quarter of year 2014.[27]

From the above scenario, there is a very strong indication that, oil and gas industry remain a major economic determinant to economy growth irrespective of contributions of other sectors in revenue generation. The oil and gas industry has two major sector; upstream and downstream sectors. The Upstream refers to activities such as exploration, production and delivery to export terminal of crude oil

[27] National Bureau of Statistics (2014), Nigeria in 2014: Economic Review and 2015 – 2017 Outlook.

or gas. The Downstream compresses of commercial activities; logistic facilities, marketing, refining, supply and distribution of petroleum. Previous studies on Nigeria economy in the last decade show that the petroleum industry has been playing important role and dominates strategic position in the economic growth and development of Nigeria

4.0. THEORETICAL FRAMEWORK

This study provides a summary of the theoretical analysis on the origin of crude oil and gas, its economic relationship to socio-political development of Nigeria. The purpose is to first initiate a theoretical perspective on the issue of economic management and progress; various mediums through which oil and gas may impact growth and development follow each perspective. The study has shown valuable hypothesis that there is significant positive relationship between oil and gas economy and economic growth in Nigeria.[28]

Conventional saying before late 1970 was that natural oil and gas activities had positive impact on growth. This view was shared by some school of thoughts; political economists and neo-liberal economists who still holds such view, that emergence of crude oil and natural gas in Nigeria has greatly positive impact on the country's foreign policy among committees of nations due to her economic strength. The Neolithic school of thought posited that, abundance of a country's natural resources well harnessed and managed, is the only sure way to growth and development. However, the mediums through which oil gas sector could contribute to economic wealth of scale in oil producing countries have been identified: generates huge revenues base that enables governments' capital projects and create employment opportunity for her citizens, based on expected investment projection without recourse to taxation. On the issue of revenues generation, petroleum industry tripled other sectors of the economy on revenue earnings as oil producing nation. The little worries over the years; is leadership lapses and sectorial corruption in the oil and gas industry, this has retrogressively taken the country backward, thereby denying her of steady growth and development like other progressive developing economy of the world.

Furthermore, Nigeria derives huge foreign exchange earnings from export trade of crude oil, despite its huge demand on domestic consumption, its proceeds are used to import other capital goods, such as raw material used by indigenous manufacturing sectors. Another benefit of the oil and gas sector on the economy is the huge reserves base of the country capable of attracting huge investment seeds.

[28] Akinyele Samuel .T. (2000), Srategic Marketing Management in the Oil and Gas: A Theoritical Framework.

That can be seen as a self-insured strategy against weakness of domestic and foreign shocks exchange market. Oil and gas industry of any economy is the economic spring board for development.

Nigerian oil and gas industry remains a very critical sector for growth and development of the economy. For example, there are bye products from oil and gas that are raw materials to other industries. Such as; petrochemical industries, manufacturing industries, and liquefied natural gas (LPG) provides gas for power generation (electricity).

The potentials of oil and gas industry to development remains an enviable energiser for industrialization, provides goods and services, create employment, open up the economy to small and medium enterprises to grow and in a long run redistribute wealth by gradual elimination of poverty. Oil and Gas sector encourages the inflow of foreign resources through export of crude oil.

Empirically, few studies have provided findings in favour of oil and gas economic potentials, growth and development of producing countries. Some of these studies had not only reported that petroleum resources had positive impact on growth and development but also found that single resource dependence has negative impact on growth if not well managed towards diversification of investment. Several analyses have posited that, petroleum resource null hypothesis; some other reasons why resource-rich countries might suffer resource utilization inefficiency are due to unprofessional human involvement in resource management and investments, and precipitated, that leads to inefficient resource allocation. Empirical data has not been very précised or conclusive in this regards, whether the emergence of oil and gas are economic goods or not. Even among scholars, claimed that economic potentials actually exist with the sector, but there is disagreement on what exactly drives its potentiality in some developed economy like Nigeria. Hence, further studies should be emphases on the relationship between oil and gas potential and its economic policy drive in developing economy. Reiterating the objectives of the petroleum industry bill (PIB), and the oil and gas sectorial re-structuring, one will hope for a better reform programme for that is just what Nigerians need to derive the needed benefit from petroleum resources, but such conclusion might just be hasty generalization, rather, time might just be the healer.[29]

[29] Baghebo .M. & Timothy Okule. A. (2012), The Impact of Petroleum on Economic Growth in Nigeria

5.0. FUTURE SUGGESTIONS AND RECOMMENDATIONS

Studies shows significant impact of the effect of oil and gas sector on the socioeconomic prospect of Nigerian economy, with specific analysis to some salient challenges posed as hindrances to growth and development of oil producing developing countries, like Nigeria.

5.1. Suggestions for Future Study

From the above study, this research has been able to expose some salient challenges confronting the economic potentials of Nigerian oil and gas industry amidst its large advantages to grow the economy. Future area a researcher should concentrate upon is on the policy direction of the Nigerian oil and gas industry and the journey thus far.

5.2. Study Recommendations

- Nigeria should internalise her corporate advantages on the potentials of oil and gas to develop other sector of the economy.
- Government should deregulate the oil and gas industry to attract foreign and indigenous investors,
- Nigerian economic sector should be entrepreneurial drive and heavily competitiveness, rather than government dictating the mode of the economy,
- An urgent passage of petroleum industry bill (PIB) policy into law is imminent, as the current legal framework is obsolete to modern oil and gas operations,
- Manpower development is Key, to national growth and development. Nigerian government should invest heavily on human capital development.
- Nigerian should involve better turn around maintenance in the four refineries for full capacity utilization and for maximum performances.
- Nigerian should explore the alternative sources of revenue generation through agricultural sector. That is, revamping the sector for economic growth.
- The gas sector should be developed as alternative source of energy to petroleum for domestic and industrial usage.

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6.0. CONCLUSION

This study has carefully discussed historical analyses of oil and gas and its potential advantages' to development of Nigerian economy, Its salient challenges hindering the realization of her true potentials among committees of nations, and carefully

outlined its driving forces of growth and development in economy. The study also suggested viable strategies needed to engender sustainable development in oil and industry in Nigeria. Therefore, it is belief, that if these options are faithfully pursued and imbibed, Nigeria will reclaim her position in the global economy ranking and attain her economic expectations by year 2020.

Furthermore, Nigeria should expand her projection on gas utilization through a build-up of her gas reserves into economic wealth. While developing gas master plan project, there is need to creating enabling environment for investment market. On other hand, investment patronage like tax rebate or holiday should be given to potential investor in the agricultural sector to revamp the sector as alternative source for wealth creation. Human capital development is also key to national growth; this has been experienced and demonstrated in other countries of the world. This implies that development depends very much on human knowledge and skills. For development to take place, a country must be determined to have a well-trained, professional, highly educated and skilled human resources to drive the natural resource of nature to economic goods, wealth and growth's needs. Literature on growth and development posited human resource (people) as the driving force for any meaningful development to be actualized in any society. And unless there are quality numbers of suitably qualified people, development could be a mirage.

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