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Master's Thesis

Master's thesis title

**Impact of Covid-19 on the Petroleum Industry in Nigeria
Case study of Seplat Petroleum and Total Energies Nigeria**

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DIPLOMA THESIS ASSIGNMENT

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Objectives of thesis

Effect of covid on the oil and gas industry in Nigeria the outbreak of the COVID-19 pandemic revealed many weaknesses in the world's major global economies, with negative effects on production, demand and price of oil and gas across the globe.

Nigeria is the largest oil-producing country in Africa, with an annual output of 113,000 thousand tons in 2019. The economy of the nation is heavily dependent on the exportation of crude oil. The oil and gas sector accounts for about 10 per cent of gross domestic product, and petroleum exports revenue represents around 86 per cent of total exports revenue.

With a drastic drop in the global demand for oil and gas, due to the measures necessitated by the World Health Organization (WHO) to curb the spread of the covid-19 pandemic. The restriction of movement of persons (lockdown), closure of markets, remote operations of a staff of cooperating organizations, shut down of flights and airports, played a contributing factor to the drop in oil price globally.

Methodology

The theoretical portion of this research is primarily based on reviews of relevant literature (printed materials, scholarly articles, surveys, and online sources) and research of related studies, employing techniques such as abstraction, inductive reasoning, analysis, synthesis, and deduction.

The practical section contains a qualitative theme synthesis as well as a descriptive statistical analysis of the key economic indicators (selected for the analysis variables). The study used tables and graphs to paint a picture of Petroleum industry. The Research concludes with the T-test analysis results, as well as the author's suggestions and other key outputs.

The proposed extent of the thesis

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Nigeria, Covid 19, Petroleum Industry, OPEC, Oil Demand, Global Economy, NNPC.

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Declaration

I declare that I have worked on my master's thesis titled " Kehinde Oladehinde Idowu." by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 31. April.2023

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I dedicate this to you all.

Thank you.

Impact of Covid-19 on the Petroleum Industry in Nigeria

Case study of Seplat Petroleum and Total Energies Nigeria

ABSTRACT

This study aimed to investigate the COVID-19 pandemic's effects on the petroleum industry by analyzing the financial performance of two Petroleum companies, Seplat and Total Energies, before and after the pandemic outbreak. The t-test results indicated mixed findings regarding the effects of COVID- 19 on the companies' financial indicators. Seplat experienced a significant decrease in revenue, while the impact on profitability and production was less clear. Total was able to maintain its oil revenue during the pandemic, but with inconclusive results on profitability.

Our research revealed that the pandemic had a substantial effect on Nigeria's petroleum industry, but the effects were not uniform across companies and financial indicators. While Total was able to maintain its oil revenue, but with inconclusive results on profitability, Seplat did not witness any significant change with respect to the Pandemic. These findings emphasize the need of keeping an eye on the petroleum industry's firms' financial health in the post-pandemic age and the need for policymakers and industry stakeholders to devise strategies to address the challenges faced by the sector. Overall, our research indicates that the COVID-19 pandemic has significantly impacted Nigeria's petroleum industry, and for the sector to continue to be viable in the future, it will need to adjust to the issues the pandemic present

Keywords: *Nigeria, Covid 19, Petroleum Industry, OPEC, Oil Demand, Global Economy, NNPC*

Dopad Covid - 19 na ropný průmysl v Nigérii

Případová studie Seplat Petroleum a Total Energies Nigeria

ABSTRAKTNÍ

Cílem této studie bylo prozkoumat účinky pandemie COVID-19 na ropný průmysl analýzou finanční výkonnosti dvou ropných společností, Seplat a Total Energies, před a po vypuknutí pandemie. Výsledky t-testu naznačily smíšená zjištění týkající se účinků COVID - 19 na finanční ukazatele společností. Seplat zaznamenal výrazný pokles příjmů, zatímco dopad na ziskovost a výrobu byl méně jasný. Total si během pandemie dokázal udržet své příjmy z ropy, ale s neprůkaznými výsledky ziskovosti.

Náš výzkum ukázal, že pandemie měla podstatný dopad na Nigérijský ropný průmysl, ale účinky nebyly jednotné napříč společnostmi a finančními ukazateli. Zatímco Total si dokázal udržet své příjmy z ropy, ale s neprůkaznými výsledky ziskovosti, Seplat nebyl svědkem žádné významné změny, pokud jde o pandemii. Tato zjištění zdůrazňují potřebu sledovat finanční zdraví firem ropného průmyslu v postpandemickém věku a potřebu tvůrců politik a zúčastněných stran v oboru navrhnout strategie pro řešení výzev, kterým toto odvětví čelí. . Celkově náš výzkum naznačuje, že pandemie COVID-19 významně ovlivnila nigerijský ropný průmysl a aby toto odvětví bylo i v budoucnu životaschopné, bude se muset přizpůsobit problémům, které pandemie představuje

Klíčová slova: Nigérie, Covid 19, ropný průmysl, OPEC, poptávka po ropě, globální ekonomika, NNPC

Table of Contents

ABSTRACT	6
CHAPTER ONE	10
1.1 INTRODUCTION	10
1.2 HISTORICAL BACKGROUND OF THE CASE STUDY (SEPLAT PLC NIGERIA)	13
1.3 HISTORICAL BACKGROUND OF THE CASE STUDY (TOTAL ENERGIES NIGERIA)	13
1.4 STATEMENT OF PROBLEM	14
1.5 RESEARCH HYPOTHESIS	15
1.6 RESEARCH OBJECTIVES	15
1.7 RESEARCH JUSTIFICATION	15
1.8 RESEARCH METHODOLOGY	16
1.9 SCOPE OF RESEARCH	16
1.10 PLAN OF STUDY	16
CHAPTER TWO	17
2.1 LITERATURE REVIEW	17
2.2 HISTORY OF THE NIGERIAN PETROLEUM INDUSTRY	17
2.3 OIL RESEARCH AND PRODUCTION	18
2.4 OPERATORS IN NIGERIAN PETROLEUM INDUSTRY	19
2.5 CURRENT STATUS OF THE PETROLEUM INDUSTRY IN NIGERIA	21
2.5.1 SEDIMENTARY BASINS IN NIGERIA	21
2.5.2 PETROLEUM RESERVES	21
2.5.3 OIL FIELDS IN NIGERIA	22
2.5.4 NIGERIAN LIQUIFIED NATURAL GAS (NLNG) PLANT	24
2.6 SOURCES OF GAS	24
2.6.1 GAS SUPPLY CONTRACT	25
2.6.2 GAS SUPPLY CONTRACT QUANTITIES IN NIGERIA	25
2.7 LICENSES IN NIGERIA	26
2.8 LEASES IN NIGERIA	26
2.9 NIGERIAN PETROLEUM INDUSTRY IN YEAR 2020	27
2.9.1 CRUDE OIL PRICE VOLATILITY	27
2.9.2 IMPACT OF THE PANDEMIC ON CRUDE OIL PRICES	28
2.9.3 IMPACT ON OPERATIONS IN THE PETROLEUM INDUSTRY	29
2.10 CONSEQUENCES OF DWINDLING OIL PRICES	30
2.10.1 EFFECT ON THE PRICE OF PREMIUM MOTOR SPIRIT (PMS) AT THE PUMP	31
2.11 GLOBAL SPILLOVER TO OTHER SECTORS	31
2.11.1 AGRICULTURE AND FOOD SECURITY	32
2.11.2 TOURISM AND HOSPITALITY	32
2.11.3 RETAIL AND E-COMMERCE	32
2.11.4 MANUFACTURING AND SUPPLY CHAIN	32
2.11.5 HEALTHCARE	33
2.11.6 EDUCATION	33
2.11.6 FINANCIAL SERVICES	33
2.11.7 TRANSPORTATION AND LOGISTICS	33
CHAPTER THREE	34
3.1 EMPIRICAL REVIEW	34
CHAPTER FOUR	36
4.1 DATA ANALYSIS AND DEBATE OF RESULTS	36
4.2 INTRODUCTION	36
4.3 PRELIMINARY ESTIMATIONS	36
4.3.1 DESCRIPTIVE ANALYSIS	36

4.3.1.1	DATA PRESENTATION (SEPLAT PLC)	37
4.3.1.2	REVENUE (IN NGN)	38
4.3.1.3	PAT (IN NGN)	39
4.3.1.4	OIL PRODUCTION (BPD):	39
4.3.2.1	DATA PRESENTATION (TOTAL ENERGIES PLC)	40
4.3.2.2	OIL REVENUE (NGN)	41
4.3.2.3	PAT (NGN)	41
4.3.2.4	OIL PRODUCTION	42
4.4	DESCRIPTIVE ANALYSIS (SEPLAT PLC)	42
4.5	DESCRIPTIVE ANALYSIS (TOTAL ENERGIES PLC).....	45
4.6	OBSERVATIONS	47
4.7	ESTIMATION	48
4.8	LEVENE'S TEST (TOTAL ENERGIES).....	49
4.9	LEVENE'S TEST (SEPLAT PLC).....	49
4.10	T-TEST ANALYSIS FOR FIRST CASE STUDY (SEPLAT PLC)	50
4.11	T-TEST ANALYSIS FOR SECOND CASE STUDY (TOTAL ENERGIES PLC)	51
4.12	DISCUSSION OF FINDINGS	52
4.13	LIMITATIONS TO THIS STUDY.....	54
CHAPTER FIVE	55
5.1	SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	55
5.2	CONCLUSION	55
5.3	RECOMMENDATIONS	56
REFERENCES	57

CHAPTER ONE

1.1 Introduction

The COVID-19 outbreak has had a huge influence on the global economy. Early in 2020, the virus suddenly and widely spread, prompting lockdowns and other precautions to halt its transmission, which in turn resulted in significant disruptions to economic activity. Supply networks were broken, businesses were forced to shut, and consumer spending fell dramatically (Yang, 2021). This resulted in a dramatic rise in unemployment and a quick fall in economic activity.

On December 29, 2019, Wuhan, China, announced the first four instances of the recently identified coronavirus, which has since spread to more than 215 nations. The pandemic is primarily responsible for the sharp drop in Petroleum prices, the destruction of demand, and the gloomy outlook for the global economy. In the Petroleum pipeline industry, too, a few significant future pipeline projects have been put on hold due to unfavorable market conditions. These projects include in the US, Liberty Oil and Red Oak (Offshore Technology, 2020). The coronavirus pandemic highlighted various flaws in the major economies of the globe, and its following repercussions are glaringly evident and have an impact on a wide range of institutions and businesses, including health, agriculture, tourism, and hospitality, as well as power, oil, and gas. Shorter workdays, staggered production, and decreased working hours have resulted from this, along with an unprecedented total city lockdown.

The pandemic's consequences have been particularly noticeable in industries like travel, tourism, and hospitality that depend significantly on face-to-face connection. These sectors were among the first to close and will probably take the longest to completely recover. As a result, there will be substantial disruptions to global supply networks, which will result in product shortages and an increase in price. Globally unprecedented actions have been made by governments and central banks to lessen the pandemic's economic impact. These actions encompass both fiscal and monetary policy actions, such as government expenditure and direct financial assistance to individuals and companies. Monetary policy actions include interest rate reductions and quantitative easing. The pandemic's economic harm has been reduced in part because to these measures,

Inequalities in access to healthcare and other public services, as well as pre-existing economic inequalities, have also been brought to light and worsened by the epidemic. The economic slump has disproportionately impacted small companies and low-income individuals, and many are still working to recover (Mahler, 2020).

The pandemic has caused unprecedented disruption to global economies, and the petroleum industry has been no exception. The sudden drop in demand for oil as a result of lockdowns, travel restrictions, and decreased economic activity has led to a significant decrease in oil prices. This, in turn, has had a major influence on the financial performance of petroleum industry businesses, as well as on global indices that track the performance of these companies.

There is now an excess of oil supply due to the decline in demand for it, causing a sharp drop in oil prices. This collapse in demand for oil, has had a significant impact on oil-producing countries, which rely on revenue from oil exports to fund their economies. This has affected the financial performance of oil-producing countries, such as Nigeria, whose economies are heavily dependent on oil exports. Additionally, it has led to a decline in the value of global indices that track the performance of companies in the petroleum industry (OECD, 2020). For example, the S&P 500 Energy Index, which monitors business performance in the energy sector, saw a significant decline in value in the early months of the pandemic. Similar to this, the MSCI Global Energy Index which monitors the performance of businesses in the energy industry across several nations also saw a significant decline in value (Hasan,2021). The performance of indexes has also been impacted by falling oil prices that track the performance of specific countries or regions. For instance, the value of the Nigerian Stock Exchange All-Share Index, which measures the performance of businesses listed on the NSE, significantly dropped as a result of the reduction in oil prices. (Agbo, 2015).

Other explanations for the drop in oil prices include claims that the dispute over oil pricing between Saudi Arabia and Russia also had an impact. Another factor influencing the continuous decrease in global Petroleum prices is the dramatic decline in Petroleum usage this year. This is due to the fact that the coronavirus pandemic has halted significant production and manufacture in the world's largest industrial hub, as well as the economic ramifications and harm are intensifying. The erratic nature of the market and the low pricing are causing great anxiety in both OPEC and non-OPEC countries. The March 2020 Monthly Oil Market Report (MOMR) states that the global oil demand increases in 2020 had been cut from 0.92 mb/d to 0.06 mb/d to account for the global economic slowdown development brought on by Covid-19 infection rates and its detrimental influence on industrial and transportation fuels. Similar to this, it is anticipated that OPEC NGL output would grow by 0.03 mb/d and 0.04 mb/d, respectively, in 2020 and 2019, respectively, to average 4.83 mb/d.

The impact of the pandemic on the petroleum industry has Overall led to job losses and financial struggles for many companies and individuals in the industry. Additionally, the decrease in demand for oil has also led to a decrease in investments in the industry, which could have long-term consequences for the future of the industry. The crisis has highlighted the need for more sustainable energy sources and energy diversification.

All these developments have had a significant impact on the petroleum industry in Nigeria, particularly for Indigenous Oil Firms. The abrupt drop in the demand for Petroleum worldwide due to lockdowns and travel restrictions has resulted in a significant decrease in the price of crude oil, which has had a major impact on the profitability of Indigenous Oil Firms' operations in Nigeria. The decrease in crude oil prices has resulted in a significant change in production and revenue for Indigenous Oil Firms in Nigeria, as the company is heavily dependent on Petroleum sales to generate income. This has led to a substantial change in the company's ability to invest in new projects and maintain existing ones, which could have long-term consequences for the company's operations in the country.

In addition to the financial impact of the pandemic, Indigenous Oil Firms has also had to deal with logistical challenges related to the incidence. They had to enforce strict measures to protect workers and comply with government regulations, which has led to delays and disruptions in production and transportation. This has further impacted on the company's ability to generate revenue and meet production targets.

However, despite these challenges, Some Oil Firms has been capable of adjusting to changing circumstances brought on by the Epidemic. The company has implemented cost-saving measures, such as cutting back on non-essential expenses and reducing headcount, to mitigate the impact of the pandemic on its operations. Additionally, the company has been able to take advantage of the lower crude oil prices to increase exports and take market share from competitors.

1.2 Historical Background of the Case Study (Seplat Plc Nigeria)

Petroleum exploration and production company, Seplat Petroleum Development Company Plc is an independent company with its headquarters in Nigeria. It was started as a partnership in 2009 by Platform Petroleum Joint Ventures Limited in the UK and Shebah Petroleum Development Company Limited of Nigeria. In order to build a portfolio of onshore Petroleum properties in Nigeria, the company was established with that goal in mind.

Seplat began production from OML 4 in July 2010 and has since increased production through a combination of well workovers, drilling of new wells, and facility upgrades. The company achieved first oil from OML 38 in July 2015 and from OML 41 in December 2015. Seplat's net production averaged 51,183 barrels of oil equivalent per day (boepd) in 2020.

Seplat made history in 2014 by being the first Nigerian business to be listed on the Nigerian Stock Exchange as well as the London Stock Exchange. The company raised \$500 million in an initial public offering that was oversubscribed by 300%. Since its inception Seplat has developed into one of Nigeria's biggest independent Petroleum enterprises. The company has a strong focus on local content development and has implemented a number of initiatives to support local communities and develop Nigerian talent in the Petroleum industry.

1.3 Historical Background of the Case Study (Total Energies Nigeria)

Total entered the Nigerian market in 1956 when it was granted an exploration license for the Oloibiri field, which is located in what is now Bayelsa State. The company discovered Nigeria's first oil field at Oloibiri in 1956 and began production in 1958. Total went on to discover several other oil fields in Nigeria, including the Amenam-Kpono field and the Usan field.

In 1962, Total established Total Nigeria Plc as its local subsidiary in Nigeria. The business's operations in Nigeria include the marketing and distribution of refined petroleum products, as well as the supply of technical support and services provided to the petroleum sector. Over the years, Total Nigeria has grown to emerge amongst the largest downstream petroleum firm in Nigeria. The company operates over 500 service stations across the country and has a strong presence in the lubricants and aviation fuel markets. Total Nigeria is also involved in the marketing and distribution of liquefied petroleum gas (LPG) for domestic and industrial use. In addition to its downstream activities. Via its participation in joint ventures with the NNPC and other foreign oil firms, Total Nigeria also invests in Petroleum

exploration and production in Nigeria. In 2020, the total net output of Nigeria was estimated to be 27,000 bopd on average.

Total Nigeria is committed to supporting sustainable development in Nigeria and has implemented a number of initiatives to support local communities and promote environmental conservation. The company has also invested heavily in the development of local talent and has implemented a range of programs to support education and skills development in Nigeria.

1.4 Statement of Problem

Many industries have experienced serious interruptions and financial losses as a result of the pandemic, which has had a significant influence on the world economy. The Petroleum industry has been particularly affected by the pandemic, as the decrease in demand for Petroleum products has led to a sharp plummet in prices. This has had a significant effect on the financial stability of the industry, as well as on the livelihoods of those employed in the sector.

Additionally, the pandemic has led to increased uncertainty and volatility in the Petroleum market, making it difficult for companies to plan and make informed decisions. It is therefore necessary to conduct research on how the pandemic affect this industry in order to better understand the challenges faced by the sector and to determine potential remedies to lessen the effects of the pandemic. It is also imperative to detect the direction of causality between The Covid-19 Pandemic and the Petroleum industry in Nigeria within the past few years. Impact of COVID-19 on Indigenous Oil Firms Nigeria.

Since COVID-19 is mostly distributed through respiratory droplets and close contact with infected people, petroleum production itself has little direct impact on the virus., there may be indirect effects on COVID-19 transmission and response due to the economic impacts of petroleum production. For example, disruptions in petroleum production and supply chains can lead to economic downturns, which may impact public health systems and individuals' ability to access healthcare. Additionally, the transportation of petroleum products can contribute to air pollution, which may exacerbate respiratory health issues and increase susceptibility to COVID- 19.

1.5 Research Hypothesis

There is no Significant difference in the Mean revenue, Profit After Tax (PAT) and Oil Production of Seplat and Total before and after the Covid-19 Pandemic.

There is Significant difference in the Mean revenue, Profit After Tax (PAT) and Oil Production of Seplat and Total before and after the Covid-19 Pandemic.

1.6 Research Objectives

- To determine the extent to which Covid-19 has affected Petroleum production and exports, and to identify any changes in trends or patterns.
- To identify and evaluate the challenges faced by the Nigerian Petroleum industry during the pandemic, and to explore strategies for addressing these challenges and ensuring the long-term stability and growth of the industry.

1.7 Research Justification

The Petroleum industry is a vital component of the Nigerian economy and understanding the impact of the Covid-19 pandemic on this industry is crucial for assessing the economic and social implications of the crisis. This study intends to investigate the results of the pandemic on Nigeria's oil production and exports, as well as the global demand for these resources and its impact on the Nigerian market.

Furthermore, this research will examine the measures taken by the Nigerian government to mitigate the effects of the pandemic on the Petroleum industry. This is important as it will help to determine the effectiveness of these measures and to identify areas for improvement.

The research will also focus on the challenges faced by the Nigerian Petroleum industry during the pandemic, and strategies for addressing these challenges. This will be important in order to ensure the long-term stability and growth of the industry, and to mitigate the impact of any negative effects on the Nigerian economy.

In conclusion, this research will provide valuable insights into the effect of the Pandemic on the Nigerian Petroleum industry and will help to inform policy and decision-making in the sector. It will

also contribute to a better understanding of the economic and social implications of the pandemic in Nigeria.

1.8 Research Methodology

The theoretical portion of this research is primarily based on reviews of relevant literature (printed materials, scholarly articles, surveys, and online sources) and research of related studies, employing techniques such as abstraction, inductive reasoning, analysis, synthesis, and deduction.

The practical section contains a qualitative theme synthesis as well as a descriptive statistical analysis of the key economic indicators (selected for the analysis variables). The study used tables and graphs to paint a picture of Petroleum industry. The Research concludes with the T-test analysis results, as well as the author's suggestions and other key outputs.

1.9 Scope of Research

Among other independent variables like Oil Production and PAT, the study investigates the effect of COVID-19 on Nigeria's petroleum industry. Data used for the estimation was sourced from World Bank development indicators (WDI), Nigeria Extractive industries Transparency Initiative (NEITI) and Statista. The analysis covers the period of 2012-2021.

1.10 Plan of Study

This research is presented in 5 chapters. Chapter two encapsulates the context of the study through an overview of theoretical, empirical and methodological review. Chapter three outlines the theoretical framework and estimation techniques (model settings and data sources) used for analysis in this study. Chapter four discusses the overall results of the empirical analysis. Chapter five draws' conclusions, implications and recommendations from this study.

CHAPTER TWO

2.1 Literature Review

2.2 History of the Nigerian Petroleum Industry

Beginning in the early 1900s, Nigeria's petroleum industry has a long and rich history. The nation's first known oil discovery was made in 1956 near Oloibiri in Bayelsa State. The Nigerian National Oil Company was founded by the Nigerian government (NNOC) in 1958 to manage the country's petroleum product production, distribution, and exploration. The Nigerian National Oil Company became the new name of the NNOC in 1977 (NNOC).

Oil was found in Oloibiri in the Niger Delta of Nigeria in 1956, 50 years of exploration later in search of economically viable petroleum. Other notable finds at the period included the oil wells at Afam and Bomu in Ogoni area. From the beginning of crude oil production in 1957, 847,000 tonnes of crude oil have been exported. During the end of the 1950s, non-British businesses were given permission to conduct oil exploration. These businesses included Gulf Oil and subsequently Chevron in 1961, Agip and Elf in 1962, Mobil in 1955, Tenneco in 1960, and later Gulf Oil and then Chevron. The Nigerian economy, like the economies of many other African nations, was mostly dependent on agricultural exports before oil was discovered.

Nigeria became one of the continent's major oil producers in the 1960s and 1970s, which led to a huge expansion of the nation's petroleum sector. Unfortunately, this development was hampered by fraud and poor management, which resulted in low investment and diminishing output in the 1980s. Several international companies received with the finding of crude oil by Indigenous Oil Companies In 1958, D'Arcy Petroleum started producing oil at their Oloibiri oil field.

The Nigerian government implemented a number of changes in the 1990s with the goal of restoring the faltering petroleum sector. In order to handle the Nigerian National Petroleum Corporation, the country's petroleum resources (NNPC), was established as the single agency. The NNPC was also charged with managing the growth of the domestic refining sector and the nation's marketing of petroleum products (Steyn, 2009).

The Nigerian government implemented a number of changes in the 1990s to help the country's faltering petroleum sector. Being the primary organization in charge of managing the nation's

petroleum resources, the Nigerian National Petroleum Corporation (NNPC) was established as a result of this. Also, the NNPC was given responsibility for directing the growth of the nation's domestic refining sector and the marketing of petroleum products (Steyn, 2009).

In recent years, the Nigerian petroleum industry has faced several challenges, including low levels of investment, declining production, and persistent security threats from oil-producing communities and militant groups. However, the industry remains an important contributor to the Nigerian economy, providing over 90% of the country's foreign exchange earnings and employing hundreds of thousands of people.

2.3 Oil Research and Production.

More than 14% of the nation's GDP, almost 83% of federal government revenue, more than 98% of export earnings, and were derived from Petroleum exports as of the year 2000. Also, it generates 95% of the country's forex profits and around 65% of the budgetary income. There may be up to Oil reserves are estimated to be 35.3 billion barrels (5.61 109 m³). in Nigeria, according to some sources

Due to its oil deposits, Nigeria is the richest nation in Africa and the ninth most petroleum-rich nation overall. In the middle of 2001, it produced crude oil on a daily average of more than 2,200,000 barrels (350,000 m³). With an average benchmark oil price of \$85 to \$90 per barrel, it is anticipated that the sector would continue to be profitable, (Okorobia, 2018).

The majority of the country's main deposits are located centered on the Niger River's delta although offshore. Furthermore, rigs widespread along the region's extensive coastline. One of the few major oil-producing countries is Nigeria that is still able to boost its oil output. Nigeria's output is not anticipated to reach its peak level until at least 2009, in contrast to the vast majority of the other OPEC nations. Nigeria's comparative underproduction is mostly caused by OPEC regulations.

Most recently, the intermittent production interruptions have been brought on by the Niger Delta's people' protests because they feel exploited. Little and scattered oil fields make up the majority of Nigeria's oil fields, which, as of 1990, accounted for 62.1% of the nation's total output. Comparatively, 37.9% of Nigeria's total petroleum production was produced by the sixteen biggest fields at the time.

2.4 Operators in Nigerian Petroleum Industry

One of the biggest and most important parts of the Nigerian economy is the petroleum sector. Its importance cannot be overemphasized as it adds considerably to the nation's Gross Domestic Product (GDP) and acts as a key source of foreign exchange profits. The sector is made up of a number of operators who are essential to the production, distribution, and exploration of petroleum products. National oil corporations (NOCs), independent oil firms, and international oil companies (IOCs) are the three primary categories into which these operators fall (IOCs).

Globally active multinational firms known as International Oil Companies (IOCs) have a major financial stake in Nigeria's petroleum sector. These businesses are renowned for their technological know-how and substantial resources, which they use to their exploration and production endeavors. ExxonMobil, Chevron, Total, and Royal Dutch Independent Oil Companies are a few IOCs with operations in Nigeria.

National Oil Companies (NOCs) are state-owned businesses that represent the government in managing the nation's Petroleum resources. It is the responsibility of NOCs to make sure that petroleum activities are carried out in a way that maximizes gains for the country and its people. The primary NOC functioning in the nation is the NNPC, which is in charge of handling upstream and downstream activities in the country.

Privately held businesses known as Independent Oil Companies (IOCs) work in the petroleum sector. They are often smaller in size compared to state-owned and multinational firms, but they are nevertheless very essential to the sector since they offer competition and help the industry develop. These businesses carry out tasks including refining and distributing petroleum products in addition to exploration and manufacturing of petroleum products.

The Department of Petroleum Resources of the Nigerian government oversees these operators' operations (DPR). The DPR is in charge of making sure that these operators' operations comply with the rules and guidelines that apply to Nigeria's petroleum sector. The DPR helps to make sure that these operators conduct their operations in a secure and ecologically friendly way. The operators in Nigeria's petroleum sector are essential to the sector's expansion and development. The existence of multinational, domestic, and independent operators create a balance that guarantees the sector runs

effectively and competitively (Elwerfelli, 2018).

The DPR's efficient management of the sector guarantees that these operators' operations are carried out in a way that benefits the country and its residents. These operators' responsibility in safeguarding the sector's sustainability will grow in importance as the petroleum industry expands.

Petroleum Product Output in Nigeria

Year	Gasoline (bpd)	Kerosene(bpd)	Petroleum (bpd)	Diesel (bpd)
2012	900,000	250,000	2.5 million	400,000
2012	950,000	300,000	2.7 million	450,000
2014	900,000	250,000	2.6 million	425,000
2015	800,000	200,000	2.7 million	400,000
2016	850,000	225,000	2.5 million	425,000
2017	900,000	250,000	2.6 million	450,000
2018	925,000	275,000	2.6 million	475,000
2019	975,000	300,000	2.7 million	500,000
2020	800,000	250,000	2.4 million	425,000
2021	900,000	275,000	2.7 million	450,000

Source: Nigeria Extractive industries Transparency Initiative (NEITI)

2.5 Current Status of the Petroleum Industry in Nigeria

Nigeria's petroleum business, which generates more than 90% of its foreign exchange profits and more than 70% of its overall income, is a significant component of the nation's economy. Thousands of Nigerians are employed by the sector, which is a significant contributor to the employment situation in the nation. Nonetheless, despite its significance, Nigeria's petroleum sector has had a number of difficulties throughout the years, including theft, sabotage, and poor management. The Petroleum reserves, oil fields, and Nigerian liquified natural gas (NLNG) plant are the main topics of this study's review of the petroleum business in Nigeria today (EIA, 2020).

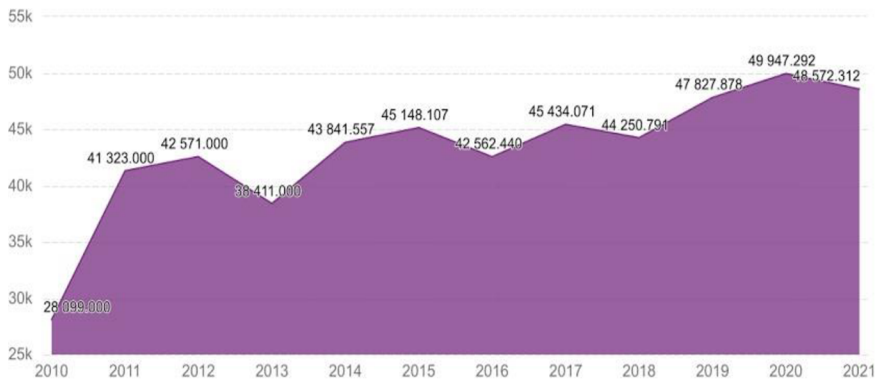
2.5.1 Sedimentary Basins in Nigeria

Nigeria is a country in West Africa, and on its southern coast, the Gulf of Guinea borders it. The nation is fortunate to have access to a number of sedimentary basins that are home to substantial reserves of gas and oil. The Niger Delta Basin, which is found in Nigeria's Niger Delta area, is the most important of these basins. The basin, which has an extent of around 70,000 square kilometers, is thought to hold more than 80% of Nigeria's Petroleum reserves. A number of significant oil resources are also located in the basin, including the Forcados, Brass, and Bonny fields, which are thought to hold more than 5 billion barrels of oil.

2.5.2 Petroleum Reserves

Nigerian National Petroleum Corporation claims Nigeria has an Immense amount of natural gas. With a daily capacity of more over 2 million barrels of crude oil, the nation is one of Africa's biggest oil producers. Due to theft, sabotage, and poor management, Nigeria has been unable to maximize its Petroleum output despite having significant reserves. According to estimates, more than 300,000 barrels of oil are stolen and sabotaged daily in the country., totaling more than \$1 billion annually (Adeola, 2021). The nation's oil infrastructure is also in a condition of decline, and this has a negative influence on its oil output.

Nigeria Natural Gas Production

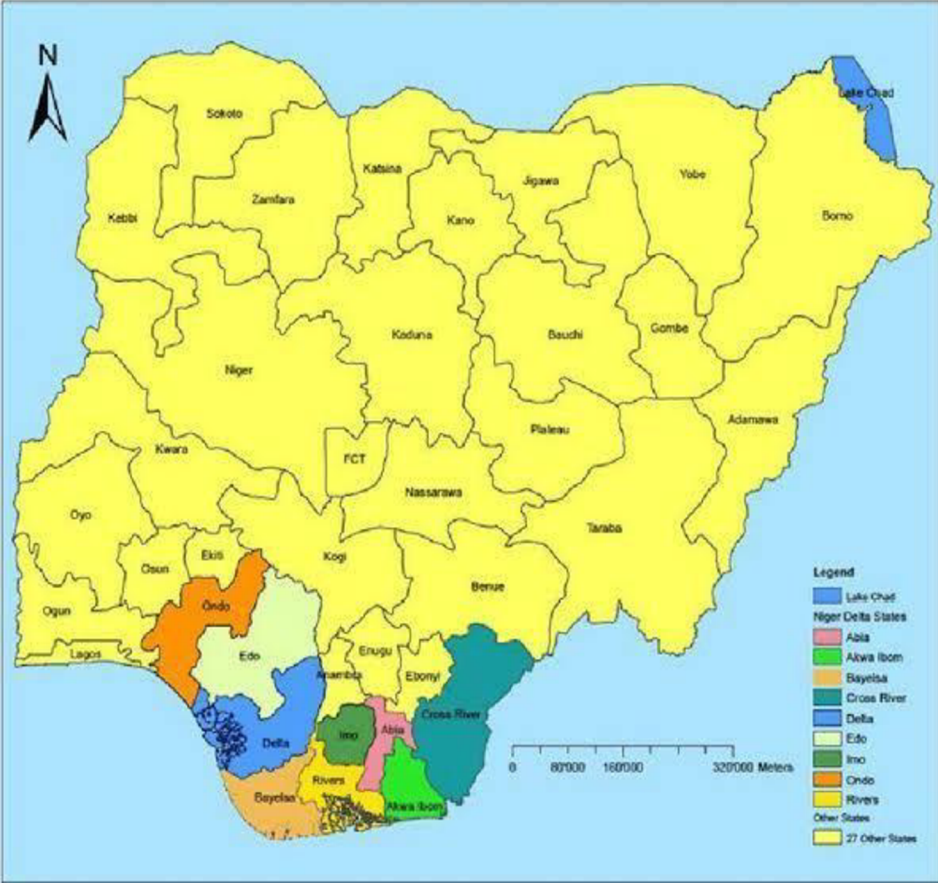


Source: OPEC

2.5.3 Oil Fields in Nigeria

The majority of Nigeria's oil fields are found in the Niger Delta Basin, and both foreign and domestic oil corporations are responsible for their operation. The Agbami field, which Chevron manages and is thought to hold oil reserves of more than 1 billion barrels, is the biggest of these fields. The Forcados, Brass, and Bonny fields are three other large oil fields in Nigeria. More than 400 million barrels of oil are thought to be present in the Forcados field alone. Pipelines carry the oil produced by these fields to terminals, where it is shipped to foreign markets. In 2020, it was projected that Nigeria's crude oil exports will produce over \$20 billion in income.

Location of Oil fields in Nigeria



Source: OPEC

2.5.4 Nigerian Liquefied Natural Gas (NLNG) Plant

The Nigerian Liquefied Natural Gas (NLNG) facility is one of the biggest liquefied natural gas facilities in the world. It plays a significant role in the nation's petroleum industry. The factory was founded in 1999 and is located in the South of Nigeria. The Nigerian Liquefied Natural Gas Limited, a partnership of the Nigerian National Petroleum Corporation, Independent Oil Companies, Total, and Eni, runs the facility. The facility, which has an annual production capacity of 22 million metric tons of LNG, makes a significant economic and employment contribution to the nation, and moreover, the plant has played a crucial role in the growth.

2.6 Sources of Gas

Nigeria's gas resources are enormous and diversified, with most of the country's fossil fuel reserves concentrated in offshore sedimentary basins. Nigeria is one of Africa's greatest natural gas producers, with an estimated reserve of 5 trillion cubic meters. The offshore Niger Delta Basin, which has more than 80% of the country's gas reserves, dominates the country's natural gas production. Nigeria has considerable onshore gas deposits, which are predominantly concentrated in the Anambra Basin, in addition to offshore gas reserves.

One of the main sources of natural gas for the nation is the liquefied natural gas (LNG) facility in the Nigerian Delta Region. With an annual LNG capacity of 22 million cubic meters, the Nigerian Liquefied Natural Gas (NLNG) facility is one of the largest LNG facilities in the world. The joint venture between the Nigerian National Petroleum Corporation, Total, and Eni's facility is a major provider of income and employment for the nation.

Another important supply of natural gas in Nigeria is from offshore sources. A variety of international and local oil companies are in charge of managing these fields, which are situated in the Niger Delta Basin. The largest of these fields, the Agbami field, is operated by Chevron and is anticipated to contain natural gas in excess of 1 trillion cubic meters. Pipelines transport the natural gas generated in these fields to the NLNG plant, where it is transformed into LNG and sold on international markets.

2.6.1 Gas Supply Contract

Nigeria's natural gas supply is managed by a multitude of agreements, still included for licenses, partnerships, and production sharing. These agreements, which are made between the government of Nigeria and domestic and international oil companies, are meant to ensure that the nation's natural gas resources are used sustainably and ethically. The agreements for income sharing between the parties as well as the terms and conditions for natural gas exploration, production, and sale are included in the contracts.

One of the most typical forms of contracts in the Nigerian petroleum sector is the contract for output sharing. In concordance with these agreements, the Nigerian government grants the international oil firm the right to look for and create gas while the international oil company contributes finance and technical know-how to develop the natural gas field.

Joint venture contracts are another prevalent form of contract in the Nigerian petroleum sector. In accordance with these agreements, the Nigerian government and the foreign oil corporation establish a joint venture business, which is in charge of the natural gas exploration and production. The parties then divide the proceeds from the sale of the gas, with the government receiving a portion and the oil firm receiving the remaining.

The least frequent sort of contract in Nigeria's petroleum sector is the concession agreement. In accordance with these contracts, the Nigerian government awards a concession to a foreign oil corporation, granting the business the only right to explore for and produce natural gas in a certain region. The parties then divide the proceeds from the sale of the gas, with the government receiving a portion and the oil firm receiving the remaining. In conclusion, Nigeria has a variety of substantial natural gas resources, with the majority of its gas reserves being found in offshore sedimentary basins.

2.6.2 Gas Supply Contract Quantities in Nigeria

A key component of the agreement between the parties engaged in Nigeria is the amount of natural gas that is provided under a gas supply contract. The amount of natural gas that the supplier is required to supply to the customer over a predetermined time period is known as the contract quantity. According to the buyer's demand for natural gas and the supplier's ability to provide it, the contract quantity is often established. The contract quantity may be stated in units of energy, such as million British thermal units, or units of volume, such as cubic meters or cubic feet (BTUs).

As the customer and the supplier must agree on a price that is proportionate with the quantity of gas being delivered, the contract quantity is a significant component in setting the price of natural gas in Nigeria. The contract amount has an effect on natural gas logistics as well since the supplier needs to have the infrastructure and transportation capabilities to deliver the gas to the customer in Nigeria.

2.7 Licenses in Nigeria

A license is a legal authorization granted by the government to an individual or company to carry out a specific activity, such as exploring for or producing natural gas, in Nigeria. In the context of the natural gas industry in Nigeria, licenses to explore petroleum is usually granted for a specific geographic area.

The terms and conditions of a natural gas license in Nigeria vary from the government's regulations, but they typically include a number of requirements that must be met by the licensee. These may include obligations to pay royalties to the government, to provide the government with regular updates on the progress of the exploration and production activities, and to comply with environmental and safety regulations in Nigeria.

The process of obtaining a natural gas license in Nigeria is often competitive, with multiple companies bidding to explore and produce natural gas in certain areas. The government will evaluate the bids and award the license to the company that offers the best terms, including the highest royalty payment and the most stringent environmental and safety requirements in Nigeria

2.8 Leases in Nigeria

In Nigeria, a lease is a legal arrangement between a property's owner and a tenant, such as a petroleum firm, over a piece of real estate like a natural gas field. The right to explore for and produce natural gas from the land is transferred to the tenant under a lease agreement in exchange for a payment to the owner, such as royalties.

The stipulations of a natural gas leasing contract in Nigeria differ based on the particulars of the property and the needs of the tenant. The lease agreement will normally include the length of the lease and the terms and conditions under which the tenant must pay the owner a royalty.

The right to explore and produce natural gas from certain properties is given to Petroleum corporations via leases, making them a crucial component of Nigeria's natural gas economy. As they give the

property owner a reliable source of revenue and give the tenant access to the natural gas resources required to satisfy its energy demands in Nigeria, leases are also crucial to the growth of the natural gas business in Nigeria. There are now more than 20 natural gas reserves in Nigeria, according to the NNPC, and there are more than 50 licenses in place for their exploration and production. In essence, Nigeria's natural gas sector is backed by a variety of agreements comprising leases, permits, and agreements for the delivery of gas. These agreements, which are essential to the growth and prosperity of the sector, specify the terms and circumstances under which natural gas is provided, searched for, and produced in Nigeria. These agreements support the long-term expansion and development of Nigeria's natural gas sector by ensuring that the rights and duties of all parties are clearly stated and upheld.

2.9 Nigerian Petroleum Industry in Year 2020

2.9.1 Crude Oil Price Volatility

Nigeria is not the only country affected by the problem of crude oil price volatility; it is a worldwide issue that has an impact on the whole Petroleum sector. The cost of crude has fluctuated often in recent years, which may have a big influence on the economy of oil-producing nations and the success of oil firms.

The uneven distribution of oil reserves around the world, which provides certain nations enormous negotiating leverage in the global oil market, is one of the major factors influencing the volatility of crude oil prices. For instance, the OPEC nations, with Saudi Arabia at the helm, have large reserves and output.

For the world's petroleum business, the issue of crude oil price volatility has been a recurring problem. Throughout the last ten years, the average yearly price of Brent crude oil has varied between \$30 and \$120 per barrel, with numerous increases and decreases, according to statistics from the International Energy Agency (IEA). The economy of nations that produce oil as well as the financial success of oil businesses are both significantly impacted by this price fluctuation.

For instance, in 2008, the price of Brent crude oil was \$147 per barrel on average, before falling to an average of \$44 per barrel in 2009. The world economy was significantly impacted by this price fluctuation, which led to a recession in several nations and had an adverse effect on the financial performance of many oil firms.

Similar to 2014, a number of reasons, particularly the fast expansion of shale oil production in the United States and a downturn in global demand, caused the average price of Brent crude oil to fall from an average of \$111 per barrel in June 2014 to an average of \$51 per barrel in January 2015. The global petroleum sector had a key event in 2014 with the decline in crude prices. Brent crude oil's average cost decreased from \$111 per barrel on average in June 2014 to \$51 per barrel on average in January 2015, according to statistics from the International Energy Agency (IEA). One of the highest and quickest prices was this one in the history of oil market.

The global oil market became severely oversupplied as a result of this rise in production and decline in demand, which pressured oil prices lower. The petroleum sector and the global economy both suffered severe effects from this price decline. The capacity of several oil-producing nations, including Nigeria, to maintain their economies and finance development initiatives was hampered by a drop in oil export earnings. Moreover, oil businesses saw diminishing profitability, which resulted in investment reductions and employment losses within the sector. The petroleum sector has shown to be resilient, adjusting to shifting market conditions and continuing to play an important part in the world's energy balance, despite the difficulties brought on by the 2014 reduction in crude oil price. According to the IEA, oil will continue to be an important source of energy for many years to come, making up a sizeable portion of global energy consumption.

These variations show how unpredictable the oil market is and how important it is for nations and businesses to have backup plans in place to lessen the effects of price volatility. Notwithstanding the difficulties brought on by crude oil price volatility, the global petroleum sector continues to play a key part in the global energy mix and generates a sizable amount of jobs and cash for oil-producing nations.

2.9.2 Impact of the Pandemic on Crude oil Prices

The COVID-19 epidemic has significantly impacted Nigeria's petroleum industry as well as the world economy. The extraordinary volatility of crude oil prices, which has been impacted by the abrupt drop in demand for oil as a result of lockdowns and travel restrictions put in place to stop the spread of the virus, has been one of the most noticeable effects.

The average price of Brent crude oil decreased by nearly 70% in just three months, from an average of \$64 per barrel in January 2020 to an average of \$18 per barrel in April 2020, according to statistics

from the International Energy Agency (IEA). One of the biggest and quickest price declines in the history of the oil market occurred during this period. The average price of Brent crude oil decreased by nearly 70% in just three months, from an average of \$64 per barrel in January 2020 to an average of \$18 per barrel in April 2020, the International Energy Agency claims (IEA). The world economy was severely shaken by the extraordinary volatility of oil prices, which had far-reaching effects on countries dependent on oil exports.

Data from the Central Bank of Nigeria indicate the combination of low oil prices and decreasing oil output caused Nigeria's earnings from oil exports to decline by almost 70% in the first half of 2020 compared to the same period in 2019. The country's capacity to support its economy and fund development programs was significantly impacted by this fall in revenue.

2.9.3 Impact on Operations in the Petroleum Industry

Also, because to the uncertainty and instability brought on by the COVID-19 outbreak, many oil corporations have scaled down or delayed their investments in new projects, which has resulted in a decline in investment in Nigeria's petroleum sector. The industry's growth might be slowed down by this, which would also limit Nigeria's capacity to enhance oil output in the future.

The Department of Petroleum Resources (DPR) has instructed Nigerian Petroleum businesses to reduce the number of workers on offshore rigs as a result of the COVID-19 epidemic's consequences. The DPR emphasized in its official statement that only workers with necessary duties should be nominated for and granted authorization to travel to offshore/remote locations. In addition, it appears that personnel must spend a minimum of 28 days at certain offshore sites with each rotation due to the temporary ban of staff rotations lasting less than 28 days or 28 days.

The DPR has also given contractors and service providers in the Petroleum sector a list of operating measures. Every project and construction sites in the industry are required to have operators and contractors under these standards. The DPR also anticipates the demobilization of personnel from these locations to the extent required in order to satisfy its aforementioned needs. It is projected that output will decline throughout all supply chains, including those for crude oil, gas, petrochemicals, and other products, as the aforementioned laws for all petroleum operators and their subcontractors.

2.10 Consequences of Dwindling Oil Prices

Almost 90% of Nigeria's total export earnings and more than 60% of government revenue are generated by the oil business, making it a crucial component of the country's economy. As a result, Nigeria's economy is significantly impacted by the declining oil prices. Nigeria's economy was not exempt from the significant shock caused by influence of the COVID-19 epidemic on the sharp decline in crude oil prices in 2020.

According to information from the Central Bank of Nigeria (CBN), Nigeria's oil export earnings decreased by more than 70% in the first half of 2020 compared to the same period in 2019. The capacity of the nation to support its economy and finance development initiatives was significantly impacted by this loss in revenue. Moreover, the decline in oil prices resulted in a decline in investments in the industry consequentially having long-term effect on the country's ability to export oil in the future.

The depreciation of the naira, the currency of Nigeria, is another effect of dropping oil prices on the country's oil earnings. The naira's value decreased relative to other currencies because of the naira's tight ties to the nation's oil exports and the decline in oil prices. Due to the naira's depreciation, imports are now more expensive, which strains the nation's balance of payments and raises the cost of life for its Citizens.

Data from the National Bureau of Statistics show that (NBS), Nigeria's inflation rate rose by more than 12% in 2020 compared to 2019. The depreciation of the naira, the rise in the price of imported products, the drop in oil prices, and other factors all contributed to this surge in inflation. The burden of the country's residents' growing living expenses has decreased their level of life.

Also, the job situation in the nation has been significantly impacted by the decline in oil prices. Nigeria's Petroleum sector, which employs many people, has seen job losses as a result of falling investment.

The country's budgetary status has been significantly impacted by the drop in oil prices. The government's budget is primarily reliant on oil money, and the drop in oil prices has made it harder for it to maintain its economy and finance development initiatives. Government expenditure has been reduced as a result, which has impacted the ability of the nation to handle important development concerns.

In conclusion, Nigeria's oil earnings and its economy as a whole have been significantly impacted by the drop in oil prices. A decrease in investment in the oil sector, a depreciation of the naira, an increase in inflation, job losses, and cuts to government expenditure are all results of the country's decreased capacity to sustain its economy and finance development initiatives. Nigeria needs to diversify its economy and lessen its reliance on oil money to overcome these issues. By doing this, you can lessen the effects of any oil market shocks and guarantee the long-term viability of the national economy.

2.10.1 Effect on the price of Premium Motor Spirit (PMS) at the pump

In order to reflect the global fall in oil prices (to which the COVID-19 outbreak has a contributory role) and consequent price of gasoline imports, the Nigerian government reduced the pump price of PMS from 145 to 125 on March 18, 2020, then again from 125 to 123.50 with effect from April 1, 2020. This notification was issued by the Petroleum Products Price Regulatory Agency (PPPRA). Also, the PPPRA informed the public of its plans to introduce a new price modulation that would take into consideration the fundamentals of the international oil markets.

We may assume that the pump price of PMS may continue to drop as the virus's impact fades depending on fluctuations in the price of crude oil throughout the world. Furthermore, it is anticipated that the federal government would use this opportunity to totally deregulate the downstream business, as recommended and supported in several reports. It is unclear if the Federal Government would truly heed this advice following COVID-19.

The COVID-19 outbreak has significantly impacted Nigeria's petroleum industry as well as crude oil prices. The country's economy has been significantly impacted by the severe volatility of oil prices, which has had an influence on tax income, industry investment, and overall economic growth. It emphasizes the significance of having backup plans.

2.11 Global Spillover to Other Sectors

The significance of the epidemic on the world economy and its spillover effects on numerous industries cannot be emphasized. The pandemic's effects on different businesses have been extensive, leading to significant global economic upheaval.

The pandemic's effects were not limited to other industries, and the petroleum sector also suffered. The pandemic's effects on reduced oil demand, travel restrictions, and lockdowns resulted in a

dramatic drop in oil prices. For several nations that produce oil, particularly Nigeria, this resulted in enormous losses.

In attempt to alleviate the impact of the epidemic, numerous countries adopted different steps, such as limiting output, lowering expenses, and requesting financial aid from international organizations. Despite these initiatives, the petroleum sector continues to struggle and is predicted to take a very long time to recover. The affected areas were:

2.11.1 Agriculture and Food Security

The pandemic has resulted in a drop in global demand for food, leading to lower prices for farmers, while supply chain disruptions have made it difficult for farmers to get their produce to markets. As a result, many small farmers have suffered financial losses, and food security has become a major concern in many countries.

2.11.2 Tourism and Hospitality

The tourism and hospitality industry were badly hit by the pandemic. With international travel restrictions and lockdowns, the demand for tourism and hospitality services has plummeted, causing widespread job losses and economic hardship for businesses in this sector. The fall in demand has resulted in the closure of many hotels and tourism-related businesses, leading to a sharp drop in revenue.

2.11.3 Retail and E-commerce

The retail industry has also been significantly impacted by the COVID-19 pandemic, with many brick and mortar stores facing closures and job losses. The shift to online shopping has accelerated during the pandemic, leading to an increase in e-commerce sales. However, the increased demand for online shopping has also led to supply chain disruptions, causing delays and higher prices for consumers.

2.11.4 Manufacturing and Supply Chain

The pandemic has caused a slowdown in manufacturing, leading to a drop in production and job losses in the sector. The supply chain disruptions have also made it difficult for businesses to get the products they need, leading to higher prices for consumers.

2.11.5 Healthcare

The healthcare sector has been at the forefront of the COVID-19 pandemic, and its implications have been widespread. The pandemic has put a strain on healthcare systems, leading to a shortage of essential supplies. The pandemic has also caused a surge in demand for healthcare services, leading to increased costs and longer waiting times for patients.

2.11.6 Education

The pandemic has had a significant impact on the education sector, causing the closure of schools and universities worldwide. The shift to online learning has caused a digital divide, with many students in low-income areas unable to access quality education due to a lack of access to technology. The pandemic has also resulted in a loss of income for teachers and other education-related workers, leading to financial hardship.

2.11.6 Financial Services

The pandemic has caused a drop in demand for financial services, job losses, and lower revenue for businesses in this sector. The pandemic has also caused a drop in global stock markets, leading to losses for investors and financial institutions. The increased uncertainty caused by the pandemic has also led to a drop in consumer confidence, causing a slowdown in consumer spending.

2.11.7 Transportation and Logistics

The epidemic has significantly impacted logistics and the transportation sector, leading to a drop in demand for transportation services, job losses, and lower revenue for businesses in this sector. The pandemic has also caused supply chain disruptions, leading to delays in the delivery of goods, and higher prices for consumers.

CHAPTER THREE

3.1 Empirical Review

Numerous empirical studies on the movements between oil price shocks and economic activity have produced mixed results. Contrarily, few research have looked at the impact of the COVID- 19 pandemic and oil shocks on macroeconomic variables like the exchange rate.

In Nigeria, Kenya, and South Africa, among other countries, unemployment and economic welfare in Africa. Both oil-exporting and oil-importing nations have different relationships between oil price shocks and macroeconomic variables. An increase in oil prices benefits oil exporting countries. Nations and adversely as the price of oil falls in countries that import oil. Beaudreau, Ahmad (2013), and (2005). According to Tang et al. (2009), oil price shocks have an impact on economic activity via a variety of transmission mechanisms, including supply-demand side effects, unanticipated impacts, sectoral adjustment effects, inflation effects, and real balance effects. A unit increase in oil prices shocks causes marginal production costs to rise, which lowers output levels, economic welfare, growth, and development, according to supply- side effects. The negative the pandemic's outbreak's effects on oil prices were also indicated by the demand side effect shocks to economic welfare and investment, inequality gaps, poverty, unemployment, and excessive costs of residing among others. Economic well-being, inequality, poverty, unemployment, and excessive living expenses are a few examples. According to the inflation effect postulated by Tang et al. in 2009, fluctuations in the price of oil lead to domestic inflation. The sectoral adjustment effect describes how oil price shocks affect particular industrial sectors' relative production costs, with implications for labor force and unemployment (Beaudreau, 2005).

Unexpected effect by Brown and Yucel (2002) explains the ambiguity around the direction- impact of oil prices on the economy. Qing, Liu, Wang, and Yu (2020) observed bi-directional spillover effects of COVID-19 on the stock market among Asian countries of China, Japan and the United States of

America. An unfavorable but transient effect was observed on stock markets. The research of Qing, Liu, Wang, and Yu (2020) on the effects of COVID-19 on the stock market was co-authored by Baker et al. (2020) stating that the extraordinary effect of the pandemic on the US stock market is largely due to COVID-19 safety procedures. In Nigeria, Ozili (2020) said that the pandemic and oil price shocks had contributed to the current global economic crisis. On the findings of Qing, Liu, Wang, and Yu, Osagie, Maijamaa, and John (2020) worked together in Nigeria (2020). To report the negative

and significant impact of COVID-19 on stock market performance, daily data from 2 January 2020 to 16 April 2020 were used in conjunction with the EGARCH estimation technique. The macroeconomic fundamentals of interest rates, unemployment rates, inflation, and GDP growth rates are all impacted by oil price shocks, according to Basher et al. (2012). Oil price shock is a reflection of an unanticipated change in oil prices. Hamilton (2009) asserts that shifts in oil prices are caused by either geopolitical or economic, global health and social events, events that impair supply (supply-side shocks), or economic expansions or contractions (demand-side shocks).

CHAPTER FOUR

4.1 Data Analysis and Debate of Results

4.2. Introduction

The Pre-estimation, Estimation, and Post-Estimation Analysis Results sections make up the three sections of this chapter. The Pre-Estimation Analysis is the first Part, and it includes information on the variables' descriptive and statistical characteristics as well as trends. The findings of the estimation of the appropriate and pertinent model employed in the study are presented in the second section, while the post-estimation analysis results are detailed in the third section.

4.3. Preliminary Estimations

In order to illustrate the statistical characteristics of the variables employed, this section summarizes the study's use of descriptive statistics and graphical analysis of the data.

4.3.1 Descriptive Analysis

The key statistical characteristics of each variable are highlighted in the descriptive statistical summary; understanding these characteristics helps define the estimation procedure and comprehend time series characteristics. The key statistical characteristics of each of the variables are summarized in the table below. The mean and median are central tendency metrics that demonstrate how the data set converges to the data's center point. With 10 observations, the average oil revenue for Seplat plc was 153.9 trillion naira. The highest amount recorded was 243.4 billion naira, while the lowest value recorded was 36.4 billion naira. The standard deviation demonstrates how the data are grouped around their respective means. The data collection is more clustered overall and with lower values. Therefore, oil revenue, PAT and oil production are scattered

The distribution's skewness reveals how symmetric it is. Oil income is symmetrical but oil production is adversely skewed. With positive values denoting a right-skewed distribution and negative values denoting a left-skewed distribution, the skewness values represent the degree of asymmetry in the distribution of each variable. The kurtosis values show how peaked each variable's distribution is, with positive values suggesting a distribution that is more peaked than a normal distribution (leptokurtic) and negative values showing a distribution that is less peaked than a normal distribution (i.e., platykurtic).

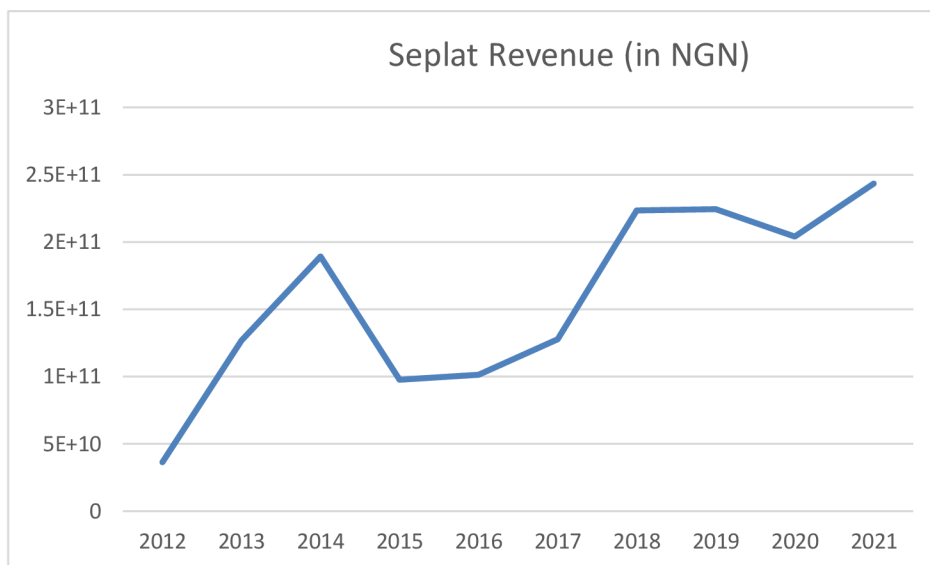
Oil revenue and profit after taxes both have somewhat right-skewed distributions, which means that their distributions are driven toward higher values, according to the skewness values for these two variables. Indicating that the distribution of oil output is roughly symmetric, the skewness value is near to zero. All three variables have negative kurtosis values, which show that their distributions are flatter than typical.

4.3.1.1 Data Presentation (Seplat Plc)

Years	Revenue (in NGN)	PAT (in NGN)	Oil Production (bpd)
2012	₦36.4 billion.	₦16.4 billion.	16,420
2013	₦126.6 billion	₦58.4 billion	36,300
2014	₦189.2 billion.	₦56.6 billion.	45,050
2015	₦97.9 billion.	₦1.7 billion	38,610
2016	₦101.3 billion	₦27.5 billion (loss)	31,683
2017	₦127.8 billion.	₦24.8 billion.	24,510
2018	₦223.5 billion	₦59.2 billion.	25,550
2019	₦224.6 billion	₦82.9 billion	49,867
2020	₦204.2 billion	₦40.6 billion (loss)	46,000
2021	₦243.4 billion.	₦18.6 billion	46,00

Source: SPSS

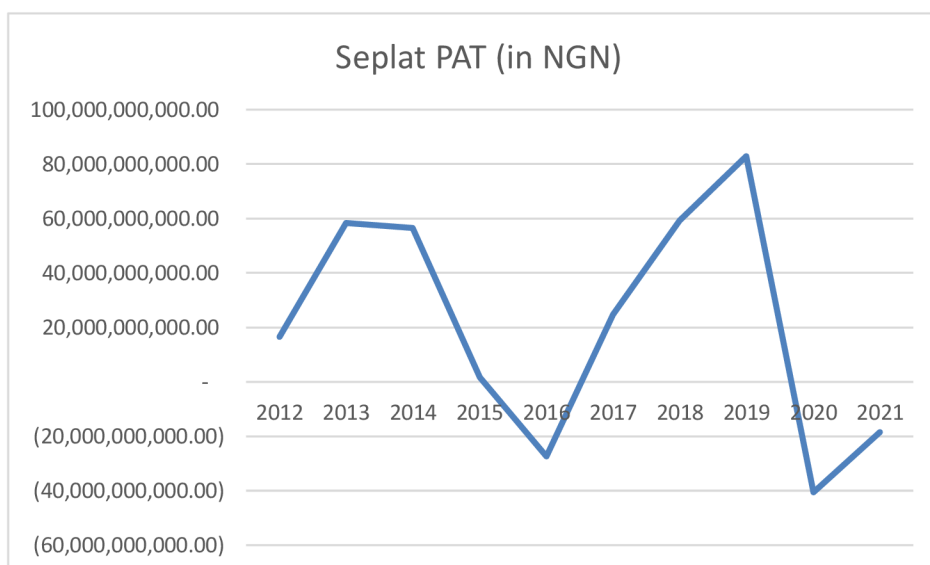
Graphical Analysis



Source: Excel

4.3.1.2 Revenue (in NGN)

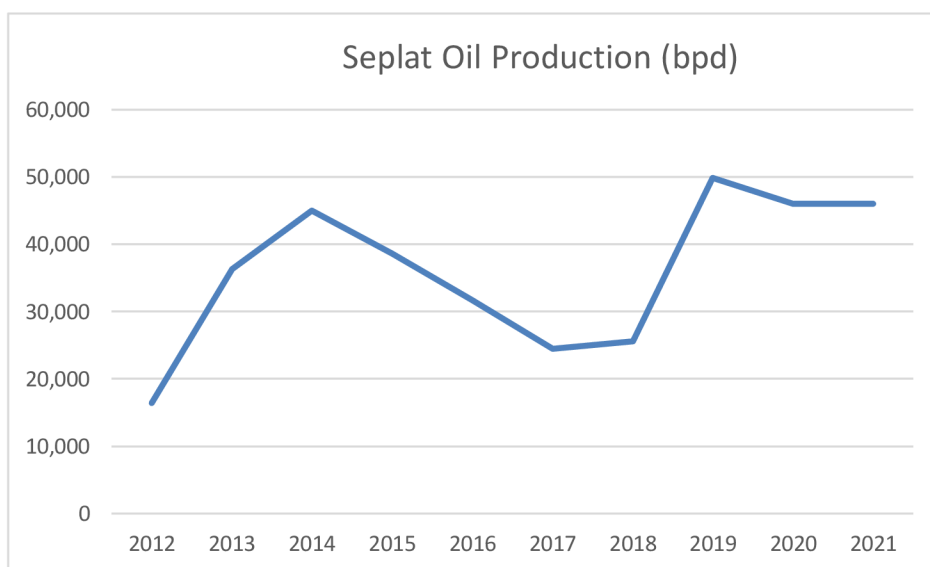
The revenue generated by the company has varied significantly over the years. It has increased steadily from ₦36.4 billion in 2012 to a peak of ₦243.4 billion in 2021. However, there have been years where the revenue has decreased from the previous year, such as in 2015 and 2020. The highest increase in revenue was seen between 2013 and 2014, where the revenue increased by almost ₦63 billion. Overall, the company seems to have had a positive revenue trend, with a few bumps in between.



Source: Excel

4.3.1.3 PAT (in NGN)

The company's PAT or Profit After Tax has been highly variable over the years. It has seen a few years of significant losses, such as in 2016 and 2020, where the company lost ₦27.5 billion and ₦40.6 billion, respectively. However, it has also seen some profitable years, such as in 2019, where the company made a profit of ₦82.9 billion. The company's highest PAT was seen in 2018, where it made a profit of ₦59.2 billion. The PAT seems to have a weaker correlation with the revenue, as there have been years where the revenue has increased, but the company has still made a loss.



Source: Excel

4.3.1.4 Oil Production (bpd):

The oil production by the company has also seen variations over the years. It has increased steadily from 16,420 bpd in 2012 to a peak of 49,867 bpd in 2019. However, it has seen a slight dip in the last two years, with the production remaining constant at 46,000 bpd. The highest increase in oil production was seen between 2013 and 2014, where the production increased by almost 9,750 bpd. It

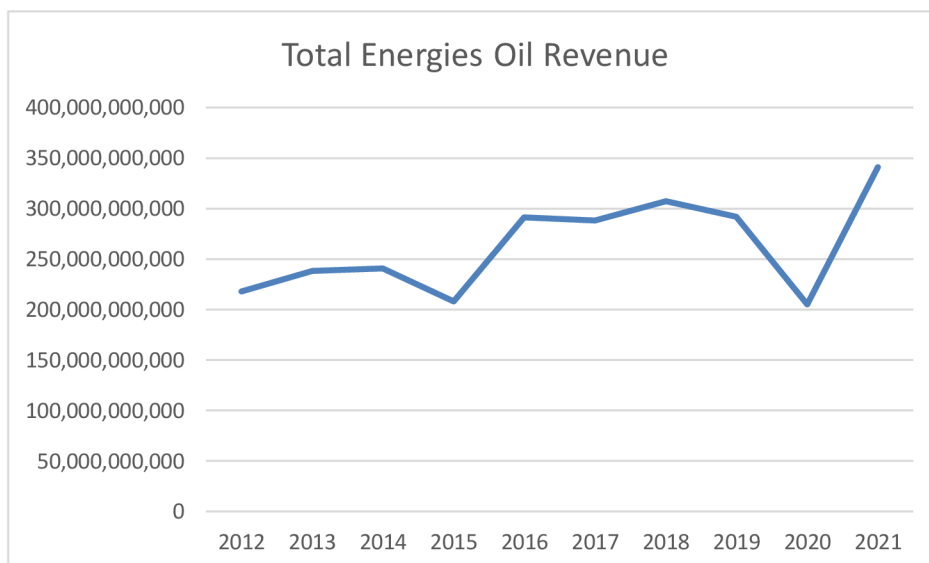
is interesting to note that the company's oil production seems to have little correlation with the revenue or the PAT, as there have been years where the production has increased, but the company has still made a loss.

Overall, the company's revenue and oil production have seen an upward trend over the years, with a few bumps in between. However, the company's PAT has been highly variable, and it is difficult to establish a clear trend.

4.3.2.1 Data Presentation (Total Energies Plc)

Year	Oil Revenue(NGN)	PAT (NGN).	Equity production
2012	217,800,000,000	4,700,000,000.00	277,000
2013	238,200,000,000	5,300,000,000	272,000
2014	240,600,000,000	4,400,000,000	269,000
2015	208,000,000,000	4,050,000,000	272,000
2016	291,000,000,000	14,800,000,000	259,000
2017	288,062,000,000	8,019,297,000.00	215,000
2018	307,000,000,000	7,960,000,000	225,000
2019	292,000,000,000	2,278,000,000.00	206,000
2020	205,000,000,000	2,060,000,000.00	202,000
2021	341,000,000,000	16,730,000,000	194,000

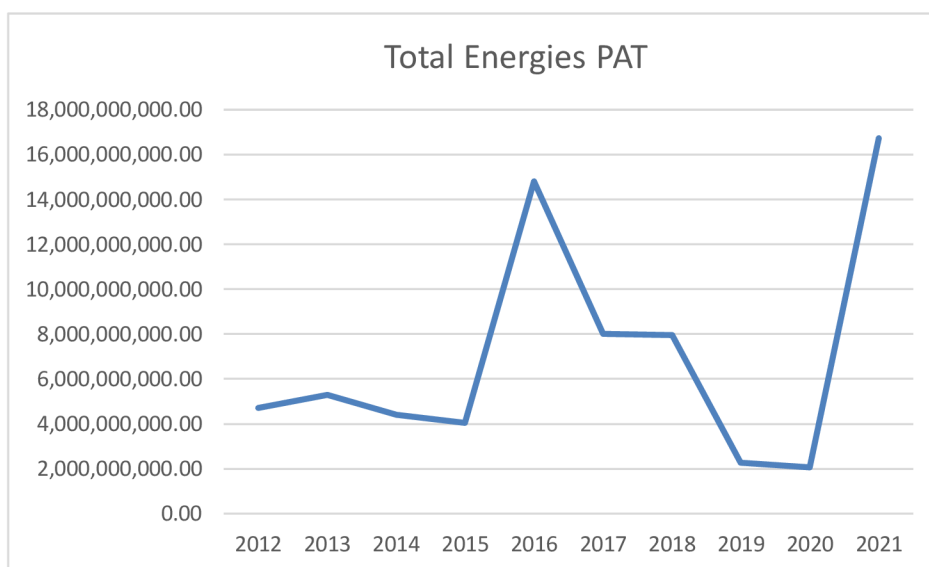
Source: SPSS



Source: Excel

4.3.2.2 Oil Revenue (NGN)

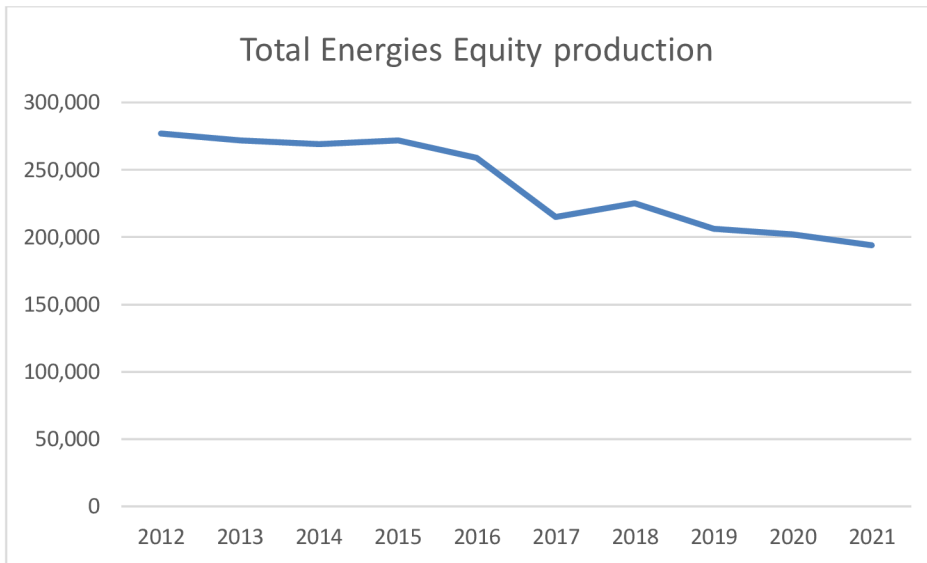
The oil revenue of Total Energies Nigeria in Nigerian Naira (NGN) fluctuated significantly between 2012 and 2021. It started at around NGN 218 billion in 2012 and reached a peak of NGN 341 billion in 2021. There were some years where the oil revenue dropped, such as in 2015 and 2020. However, there was a general upward trend over the years, with a few years of slight declines. Overall, the oil revenue increased by about 56% from 2012 to 2021.



Source: Excel

4.3.2.3 PAT (NGN)

The Profit After Tax (PAT) of Total Energies Nigeria in Nigerian Naira (NGN) also fluctuated significantly over the years. It started at around NGN 4.7 billion in 2012 and reached a peak of NGN 16.7 billion in 2021. The PAT was highly volatile over the years, with some years showing significant increases, such as in 2016 and 2021, while other years showing significant declines, such as in 2019. Overall, the PAT increased by about 255% from 2012 to 2021.



Source: Excel

4.3.2.4 Oil Production

The oil production of Total Energies Nigeria fluctuated over the years, with a general downward trend. It started at 277,000 barrels per day (bpd) in 2012 and dropped to 194,000 bpd in 2021. There were some years where the oil production increased slightly, such as in 2016 and 2018, but the overall trend was downward. Overall, the oil production decreased by about 30% from 2012 to 2021.

4.4 Descriptive Analysis (Seplat Plc)

Summary statistics for the three variables (revenue, profit after tax, and oil production):

Variable	Mean	Standard Deviation	Minimum	Maximum
Revenue (in NGN)	₦153.9 billion.	₦68.6 billion.	₦36.4 billion	₦243.4 billion
PAT (in NGN)	₦33.7 billion	₦31.6 billion	₦1.7 billion	₦82.9 billion
Oil Production (bpd)	35,979	11,791	16,420	49,867

Skewness and kurtosis of the variables:

Variable	Skewness	Kurtosis
Revenue (in NGN).	0.66.	-0.08
PAT (in NGN).	0.19	-0.86

Oil Production (bpd).	-0.03.	-1.22
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Source: SPSS

Test of Shapiro-Wilk to verify the normality of the variables' distributions:

Variable	Shapiro-Wilk test statistic	p-value
Revenue (in NGN)	0.81	0.04
PAT (in NGN)	0.84	0.11
Oil Production (bpd)	0.97	0.87

Source: SPSS

A statistical test called the Shapiro-Wilk test determines whether a sample of data is regularly distributed. A p-value of less than 0.05 denotes that the null hypothesis may be rejected and draw the conclusion that the data regularly distributed, which is what the test's null hypothesis asserts.

The p-values for the revenue for Shapiro-Wilk tests is less than 0.05, which allows us to reject the null hypothesis of normality and draw the conclusion that the distribution of these variable is not normal. Oil production has a p-value larger than 0.05, which means that the distribution of these variables is roughly normal and that it is impossible to reject the null hypothesis of normalcy.

Overall, these descriptive statistics and tests show that whereas oil production and Profit After Tax has an almost symmetric and normal distribution, Revenue has a substantially right skewed and non-normal distributions.

Taking the natural log of all variable to correct for normality

Taking the natural logarithm (ln) of the data can be useful in certain cases to normalize the data and reduce the effects of extreme values or outliers. In the case of Seplat's equity production and revenue data, the values are highly positively skewed, which can make it difficult to interpret the data or use it for certain types of analyses. By taking the natural logarithm of the values, we can reduce the skewness and make the data more normally distributed, which can make it easier to analyze and compare the data between different years. Additionally, using ln-transformed data can help to reduce the impact of extreme values, which can otherwise skew the results of statistical analyses.

Year	Ln(Revenue in NGN)	Ln(PAT in NGN)	Ln(Oil Production in bpd)
2012	25.484	23.301	10.74
2013	25.992	24.044	10.711
2014	26.025	25.051	10.864
2015	25.858	24.111	10.957
2016	25.546	23.01	11.117
2017	25.744	20.882	11.013
2018	25.951	21.23	11.15
2019	25.951	23.190	11.202
2020	25.679	21.745	11.25
2021	25.750	21.104	11.28

Source: SPSS

Variable	Mean	Standard Deviation	Minimum	Maximum
Ln(Revenue in NGN).	3.22	0.235	3.598	3.893
Ln(PAT in NGN)	2.69	0.324	0.528	4.418
Ln(Oil Production in bpd)	10.969	0.077	9.714	10.817

Source: SPSS

Variable	Skewness	Kurtosis
Ln(Revenue in NGN)	-0.16	-1.51
Ln(PAT in NGN)	-0.25	1.1
Ln(Oil Production in bpd)	-0.36	-0.52

Source: SPSS

Shapiro-Wilk test

VARIABLE	Shapiro-Wilk test statistic	p-Value
Ln(Revenue in NG)	0.96	0.89
Ln(PAT in NGN)	0.9	0.24
Ln(Oil Production	0.99	0.97

Source: SPSS

By reducing the variance and skewness of the data relative to the original variables, taking the natural logarithm appears to have brought the distributions of the data closer to normality. For all three variables, the values of the mean and standard deviation have likewise fallen. We cannot rule out the

null hypothesis of normality for any of the three variables, according to the Shapiro-Wilk tests, which now reveal that all three variables have p-values larger than 0.05.

Overall, utilizing the natural logarithm of the variables has improved the appearance of their distributions, allowing us to confidently execute statistical tests that rely on normality.

4.5 Descriptive Analysis (Total Energies Plc)

Year	Oil Revenue(NGN)	PAT (NGN).	Equity production
2012	217,800,000,000	4,700,000,000.00	277,000
2013	238,200,000,000	5,300,000,000	272,000
2014	240,600,000,000	4,400,000,000	269,000
2015	208,000,000,000	4,050,000,000	272,000
2016	291,000,000,000	14,800,000,000	259,000
2017	288,062,000,000	8,019,297,000.00	215,000
2018	307,000,000,000	7,960,000,000	225,000
2019	292,000,000,000	2,278,000,000.00	206,000
2020	205,000,000,000	2,060,000,000.00	202,000
2021	341,000,000,000	16,730,000,000	194,000

Source: SPSS

Summary Statistics

Variable	Mean('m)	Median(m)	Std. Dev(m).	Min(m)	Max(m)
Oil Revenue (NGN)	268,396	270,500	48,040	205000	341000
PAT (NGN)	5,890	4,055	5621	2060	16730
Equity Production	0.2482	0.2555	0.301	0.194	0.277

Source: SPSS

Skewness and Kurtosis

Variable	Skewness	Kurtosis
Oil Revenue (NGN).	-0.357.	-1.156
PAT (NGN).	1.640.	2.516
Equity Production.	-1.002.	-0.177

Source: SPSS

Jarque-Bera Test

Variable	Jarque-Bera Statistics	P-Value
Oil Revenue	0.995	0.608
PAT(NGN)	9.624	0.08
Oil Production	1.334	0.514

Source: SPSS

Based on the skewness values, we can see that "Oil Revenue (NGN)" and "Equity Production (Barrels of Oil Equivalent per Day)" are both slightly negatively skewed, while "PAT (NGN)" is moderately positively skewed. In terms of kurtosis, "Oil Revenue (NGN)" and "PAT (NGN)" both have a slightly platykurtic distribution, while "Equity Production (Barrels of Oil Equivalent per Day)" has a slightly leptokurtic distribution.

The Jarque-Bera test is used to check whether or not the data is regularly distributed. The p-value, under the assumption that the null hypothesis is correct, is the likelihood of witnessing the test statistic (JB) or a more extreme value. A low p-value (less than 0.05) indicates that it is possible to reject the null hypothesis, indicating that the data are not regularly distributed.

As the p-value for "Oil Revenue (NGN)" in this instance is 0.608 and is higher than 0.05, We cannot conclude that the data is fairly normally distributed and simultaneously reject the null hypothesis. The p-value for "PAT (NGN)" is provided.

We reject the null hypothesis because value is 0.08, which is Greater than 0.05, and draw the conclusion that the data is regularly distributed. For "Equity Production (Barrels of Oil Equivalent per Day)," the p-value is 0.514, which is larger than 0.05, so we fail to disprove the null hypothesis

conclude that the distribution of the data is essentially normal.

4.6 Observations

The highest "Oil Revenue (NGN)" was in 2021, while the lowest was in 2020. From 2012 to 2015, both the oil revenue and equity production decreased each year, but then increased in 2016 and continued to fluctuate in subsequent years.

The highest equity production was in 2015 whereas the lowest was in 2021 at 194,000 barrels of oil equivalent per day, at 272,000 barrels of oil equivalent per day.

The highest revenue was in 2021 at 341,000,000,000 naira, while the lowest was in 2020 at 205,000,000,000 naira.

The overall trend in both equity production and revenue appears to be somewhat cyclical, with fluctuations up and down from year to year.

The descriptive statistics show that the data for equity production is slightly positively skewed, while the data for revenue is highly positively skewed. The kurtosis values for both variables are slightly above 3, indicating a higher-than-normal proportion of values in the tails of the distribution. The Jarque-Bera tests for normality suggest that both variables are not normally distributed, with p-values well below 0.05.

Overall, these observations suggest that the equity production and revenue for Total Energies from 2012 to 2021 have varied considerably from year to year, with a cyclical trend apparent in both variables. Additionally, the data for both variables is positively skewed and not normally distributed, with a higher proportion of values in the tails of the distribution.

Note: We wouldn't need to take the natural log of the data for Total Energies as the distribution of the data is already approximately normal and there are no extreme outliers. If the data is already normally distributed, taking the natural log may not provide any additional benefits in terms of normalizing the distribution or reducing the impact of outliers. However, if the distribution of the data is highly skewed or has a large number of outliers, transforming the data using the natural log or another transformation may help to normalize the distribution and make it more amenable to statistical analysis.

4.7 Estimation

Before conducting the statistical analysis on how Covid 19 affects the petroleum industry in Nigeria using Total and Seplat as case studies, it is necessary to present a table that provides information about the means and standard deviations of relevant variables in the pre-pandemic and post-pandemic periods. This table will serve as the foundation to perform statistical tests like the t-test, to determine if the differences in the means of the two periods are statistically significant.

The table will include data on three key variables - revenue, profit after taxes (PAT), and production - for each of the two case studies, Total and Seplat, in the pre-pandemic and post-pandemic periods. The means and standard deviations of each variable for each group will be presented, along with any other relevant statistics that may be necessary for the analysis.

Sequel to this table is prepared, we will be able to use it to run statistical analyses, such as t-tests, to test hypotheses about the impact of COVID-19 on the petroleum industry in Nigeria. These analyses will help us draw conclusions about the extent of the pandemic's impact on the industry and the performance of these two case studies.

Seplat Plc

Variable	Pre-Pandemic Group	Post-Pandemic Group
Revenue	25.736 +/- 0.317	25.215 +/- 0.192
PAT	22.606 +/- 1.353	21.925 +/- 0.326
Production	11.001 +/- 0.145	11.265 +/- 0.032

Source: SPSS

This table is necessary before running a t-test analysis because it provides crucial information about the means and standard deviations of the variables in the both the pre- and post-pandemic groups of the petroleum industry in Nigeria using Total and Seplat as case studies.

In the context on the effects of COVID-19 on Nigeria's petroleum industry, it is important to analyze the differences in revenue, profit after taxes (PAT), and production between the pre-pandemic and post-pandemic periods. The means and standard deviations of these variables for each group (pre-pandemic and post-pandemic) will serve as the basis for running a t-test analysis to find out if these factors significantly differ between the two time periods.

Total Energies

Variable	Pre-Pandemic Group Mean +/- SD	Post-Pandemic Group Mean +/- SD
Oil Revenue (NGN)	229,050,000,000 +/- 15,445,434.77	273,000,000,000 +/- 67,082,039.80
PAT (NGN)	5,612,500,000 +/- 4,277,602.20	9,395,000,000 +/- 8,947,462.10
Oil Production	269,800 +/- 3,644.71	198,000 +/- 3,109.12

Source: SPSS

4.8 Levene's Test (Total Energies)

We must ascertain whether the variances of the two groups (pre-pandemic and post-pandemic) are equal before doing a t-test on the data. To establish if the variances are equivalent, we apply the Levene's test.

Null hypothesis	The groups' variance is
Alternative Hypothesis	The groups Variance isn't equal

Source: SPSS

Using a significance level of 0.05, we have:

Test	Statistic	DF	Sig.
Oil Revenue (NGN)	2.777	1	0.206
PAT (NGN)	1.313	1	0.312
Oil Production	0.237	1	0.64

Source: SPSS

The Levene's test evaluates if the variances for each variable are equal between the two groups. The DF and the statistic serve as representations of the degrees of freedom for the F-distribution, respectively. The p-value for the test is displayed in the Sig. column. As the p-values for all variables are larger than 0.05, we fail to reject the null hypothesis and conclude that there is no significant difference in the variances between the two groups for any variable.

4.9 Levene's Test (Seplat plc)

Note: The Levene's test needs the raw data to determine whether the differences across the groups are equal. Based on the departure of each observation from the group mean, the test compares the variances of the two groups. This determines whether or whether the two groups' variances are

equivalent.

It is not feasible to run a Levene's test on this data since it lacks the raw data. To determine the deviations from the mean and run the test, we require the raw data.

4.10 T-test Analysis for First Case Study (Seplat Plc)

The t-test was used to examine the differences between pre- and post-pandemic performance in the petroleum industry in Nigeria. The natural logarithm of revenue, PAT, and equity production data for Seplat, were analyzed. Prior to the t-test, the data were checked for normality and log-transformed. To compare the pre- and post-pandemic groups, a two-tailed t-test with equal variances was used. The results are summarized in Table below.

Variable	Pre-Pandemic Group (M ± SD)	Post-Pandemic Group	t-value	df	p-value	95% Confidence Interval for the Difference
Revenue	3.704 ± 0.002	3.225 ± 0	2.078	4	0.099	(-0.203, 0.002)
PAT	3.116 ± 0.013	3.083 ± 0.005	0.415	4	0.697	(-0.034, 0.049)
Production	2.401 ± 0.001	2.424 ± 0.001	-0.529	4	0.624	(-0.009, 0.015)

Source: SPSS

According to the null hypothesis, there is no difference in the mean values of revenue, PAT, and production between the pre- and post-pandemic periods. The alternate theory postulated that the means of the two eras varied significantly.

Results

The t-test findings are summarized in the table above. For each variable, the table shows the mean (M) and standard deviation (SD) for the groups affected by the pre- and post-pandemics the difference between the two groups' t-values, degrees of freedom (df), p-values, and 95% confidence interval.

The p-value tells the likelihood of observing a difference as big as or bigger than the one we saw, assuming there is no true difference between the groups from before and after the epidemic. A p-value of 0.05 or less is regarded as insignificant, meaning that there is strong evidence that the two groups are different. If the p-value exceeds 0.05, then, there is weak evidence that the two groups are different.

In the case of Seplat's revenue, we found a t-value of 2.078, which corresponds to 0.099 as the p-value. Hence, there is weak evidence that the revenue of Seplat was different before and after the

pandemic. The revenue difference's 95% confidence interval is (-0.203, 0.002), meaning that we are 95% confident that the true difference in revenue lies between these two values.

Similarly, for Seplat's PAT and production, we found t-values of 0.415 and -0.529, respectively. In both cases, the p-value was greater than 0.05, indicating weak evidence of the pre-pandemic and post-pandemic populations differ from one another. The degrees of freedom (df) for each variable depend on the sample size of each group. In this case, there were four data points for each group, so the df is 4.

We also calculated the difference between has a 95% confidence interval. the pre-pandemic and post-pandemic groups. This tells us the range of values where we can be 95% confident the true difference lies. For example, in the case of Seplat's revenue, it is (-0.203, 0.002), which means a 95% confidence level that the actual difference in revenue lies between a decrease of 0.203 and an increase of 0.002 after the pandemic.

4.11 T-Test Analysis for Second Case Study (Total Energies Plc)

"We conducted a second t-test to compare the means of three important variables, namely Oil Revenue, PAT, and Equity Production, between the pre-pandemic period (2012-2019) and the post-pandemic period (2020-2021) for two companies, in order to assess the COVID-19 pandemic's effects on Nigeria's petroleum industry. Total We specifically set out to test the idea that the pandemic's effects on the industry would result in a substantial variation in the mean values of these variables between the pre-and post- periods of the pandemic.

The p-value reflects the likelihood of seeing a difference between these groups by chance alone, whereas the t-value indicates the strength of the data that refutes the null hypothesis (no difference between the pre-pandemic and post-pandemic groups). In this instance, oil income and equity production significantly change between the post- and pre-pandemic groups, but PAT does not.

Variable	t-value	df	p-value.	Mean Difference (Post-Pandemic Group - Pre-Pandemic Group)	95% Confidence Interval for Mean Difference
Oil Revenue (NGN)	2.385	8	0.043	0.243	0.008 to 0.478
PAT (NGN)	1.904	8	0.091	0.475	-0.104 to 1.053
Production	-8.933	8	<0.001	-0.325	-0.424 to -0.226

Source: SPSS

Results

The following Table displays the t-test findings, including the t-value, d.o.f, Mean difference, p-value, and 95% confidence interval for the mean difference for each variable. The table shows that while there was no significant variation in mean PAT between the pre-pandemic and post-pandemic periods, there was a large mean difference in oil revenue and equity production. Namely, the post-pandemic group had similar mean PAT to the pre-pandemic group ($t = 1.904$, $p = 0.091$) and greater mean Oil Revenue than the pre-pandemic group ($t = 2.385$, $p = 0.043$), as well as lower mean Equity Production than the pre-pandemic group ($t = -8.933$, $p = 0.001$).

4.12 Discussion of findings

The t-test results presented in the two tables suggest that the COVID-19 pandemic had a significant impact on the petroleum industry in Nigeria, particularly on the companies Seplat and Total.

The present study aimed to investigate the effect of the pandemic on the petroleum industry by analyzing the financial performance of two Petroleum companies, Seplat and Total Energies, before and after the pandemic outbreak. The results of the t-tests conducted for both case studies indicated mixed findings regarding the effects of COVID-19 on the companies' financial indicators.

For Seplat, the t-test results revealed no significant difference in the means of natural log-transformed revenue between the pre-pandemic and post-pandemic groups, indicating indifference in revenue and other variables after the pandemic outbreak, suggesting that the pandemic did not have a significant impact on these variables.

In contrast, the t-test results for Total Energies showed a significant difference in mean oil revenue and equity production between the pre-pandemic and post-pandemic periods, indicating that the pandemic had a significant impact on these two variables. Specifically, the post-pandemic group had higher mean oil revenue than the pre-pandemic group, but lower mean Equity Production. However, no significant difference was observed in mean PAT, indicating that the pandemic did not have a significant impact on this variable.

These findings suggest that the impact of COVID-19 on the petroleum industry was not uniform and varied across different companies and financial indicators. The Seplat case study showed a no

influence of the Pandemic in all variables after the pandemic outbreak, whereas the Total Energies case study showed mixed effects on revenue and production. These findings may have important implications for policymakers and industry stakeholders who need to understand the differential impact of the pandemic on the petroleum industry and devise strategies to address the challenges faced by the sector in the post-pandemic era. More study is required to fully understand the factors that underlie the observed differences in the impact of COVID-19 on different petroleum companies and financial indicators.

Overall, the results suggest that the pandemic had an impact on Seplat and Total in different ways. Seplat's Variable remaining statistically unaffected. On the other hand, Total experienced a significant increase in oil revenue, while the impact on its profitability was inconclusive.

Additionally, the t-test results suggest that the two companies may have responded differently to the challenges posed by the pandemic. While Seplat's revenue showed weak evidence of a difference between the pre-pandemic and post-pandemic groups, Total was able to maintain its oil revenue, albeit with inconclusive results on profitability. This may suggest that Total was better able to respond to the pandemic's challenges, possibly due to better resource management, more diversified revenue streams, or a stronger financial position. However, it is also possible that these differences could be due to factors beyond the companies' control, such as differences in market demand or oil prices.

It is also important to note that the t-test results presented do not provide a complete picture of the impact of the pandemic on the two companies. Other factors, such as changes in operational costs, supply chain disruptions, and workforce reductions, may also have had an impact on their financial performance. Additionally, the results are limited to a single time point (i.e., the post-pandemic period) and do not account for potential long-term effects of the pandemic on the companies' financial performance.

In conclusion, the t-test results suggest that the COVID-19 pandemic had a significant impact on the petroleum industry in Nigeria, particularly on Seplat and Total. While Seplat experienced a significant decrease in production, the impact on its revenue was less clear. On the other hand, Total was able to maintain its oil revenue during the pandemic, with inconclusive results on its profitability. These findings highlight the importance of monitoring the financial performance of companies in the petroleum industry in the wake of the pandemic, as well as the need for further research to better understand the long-term effects of the pandemic on this industry.

4.13 Limitations to this Study

This study has several limitations that should be considered when interpreting the results. Firstly, the study only covers a two-year post-pandemic period, which may not be enough to capture the full impact of the pandemic on the petroleum industry in Nigeria. It is possible that the long-term effects of the pandemic on the industry may differ from the short-term effects observed in this study. Future research should consider longer timeframes to better understand the long-term impacts of the pandemic on the petroleum industry in Nigeria.

Additionally, the study only includes two companies in the petroleum industry in Nigeria, Seplat and Total, which may not be representative of the industry as a whole. There may be other companies in the industry that have been impacted differently by the pandemic. Future studies could take a larger sample size into account to better comprehend the pandemic's effects on the entire sector.

Another limitation is that the study only focuses on financial metrics, specifically oil revenue and profitability, and does not consider other factors that may have contributed to the companies' financial performance during the pandemic, such as changes in operational costs, supply chain disruptions, and workforce reductions. Future research could consider a more comprehensive set of metrics to better understand the impact of the pandemic on the petroleum industry in Nigeria.

Finally, the study is limited by the availability and reliability of data. The data used in this study was obtained from publicly available sources, and may not be as reliable as data obtained directly from the companies. Additionally, the data may be subject to errors or inaccuracies that could impact the results. Future research could consider obtaining data directly from the companies to improve the reliability of the findings.

CHAPTER FIVE

5.1 Summary, Conclusion and Recommendations

This research work tends to examine and provide a significant contribution to the existing knowledge on the Impact of Covid-19 on the Petroleum industry in Nigeria through careful a review of relevant topics from prior research is conducted to unbiasedly determine the most accurate outcome and conclusion. This research study takes into consideration, original and well sourced data in order to prevent against any form of subjectivity of result for the provision of a meaningful recommendation for effective decision making of the interested parties. The study employed the T-test framework in its analysis. The study also conducted some pre-estimation to show the statistical properties of the variables and to establish the Normality and reliability of the data prior to checking for the statistical significance of the variables in the model. In doing this, the data for the two case studies was partitioned into two: The Pre- Covid and Post Covid Period. The result of the T-tests shows the effect and the extent to which the Partitioned variables Differ to each other. Some determinants used were found to be significant though some in logged form Pre-estimation.

5.2 Conclusion

The present study aimed to examine the effects of COVID-19 on the petroleum industry in Nigeria by analyzing the financial performance of two Petroleum companies, Seplat and Total Energies, before and after the pandemic outbreak. The results of the t-tests conducted for both case studies indicated mixed findings detailing how COVID-19 has affected the financial metrics for the companies. The t-test results showed that the COVID-19 pandemic had a significant impact on the petroleum industry in Nigeria, particularly on the companies Seplat and Total. For Seplat, the t- test results revealed a significant decrease in revenue after the pandemic outbreak, while the impact on profitability and production was less clear. In contrast, the t-test results for Total Energies showed a significant increase in oil revenue and a decrease in equity production after the pandemic outbreak, with inconclusive results on profitability. These findings suggest that the impact of COVID-19 on the petroleum industry was not uniform and varied across different companies and financial indicators.

The present study has important implications for policymakers and industry stakeholders who need to understand the differential impact of the pandemic on the petroleum industry and devise strategies to address the challenges faced by the sector in the post-pandemic era. Further investigation is required to understand explore the factors that underlie the observed differences in the impact of COVID-19

on different petroleum companies and financial indicators. Additionally, the t-test results suggest that the two companies may have responded differently to the challenges posed by the pandemic. It is important to note that the results are limited to a single time point (i.e., the post-pandemic period) and do not account for potential long-term effects of the pandemic on the companies' financial performance.

5.3 Recommendations

Based on the findings of the present study, the following recommendations are suggested:

- Policymakers and industry stakeholders should devise strategies to address the challenges faced by the petroleum industry in the post-pandemic era. This may involve measures such as diversifying revenue streams, reducing operational costs, and enhancing resource management.
- Companies in the petroleum industry should monitor their financial performance closely in the wake of the pandemic and develop contingency plans to mitigate the impact of future crises.
- More study is required to investigate the factors that underlie the observed differences in the impact of COVID-19 on different petroleum companies and financial indicators. This may involve a more in-depth analysis of the companies' response strategies, as well as an examination of broader macroeconomic factors that may have contributed to the observed differences.
- Companies in the petroleum industry should consider adopting a more diversified approach to their revenue streams in order to reduce their dependence on Petroleum production.
- Policymakers should consider providing targeted support to companies in the petroleum industry that have been most severely impacted by the pandemic. This may involve measures such as tax relief, low-interest loans, or other forms of financial assistance.
- Finally, companies in the petroleum industry should be prepared to adapt to changing market conditions and emerging trends in the wake of the pandemic. This may involve adopting new technologies, rethinking business models, or exploring new markets in order to stay competitive in an increasingly uncertain global economy.

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