

## Implications of the Covid-19 Global Oil Crash on the Nigerian Oil-Based Economy: The Punitive Cost for Non-Diversification and the Way Out.

ABUBAKAR, SANI<sup>1</sup>, ERU, EKA JOHN<sup>2</sup>, OKOYE, OZINNA JOHNPAUL, ESQ<sup>3</sup>, ETEBU, CHARITY ENIMIWORIMINI, PHD<sup>4</sup>

<sup>1</sup>Department of Business Administration, School of Management Sciences, Federal Polytechnic, Ekowe, Bayelsa State, Nigeria.

<sup>2</sup>Department of Public Administration, School of Management Sciences, Federal Polytechnic, Ekowe, Bayelsa State, Nigeria.

<sup>3</sup>Faculty of Law, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria.

<sup>4</sup>Department of Business Education, School of Vocational and Technical Education, Isaac Jasper Boro College of Education Sagbama. Bayelsa State, Nigeria

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**Abstract:** This research paper perustrates the implications of the COVID-19 global oil crash on the Nigerian oil-based economy, considering the punitive cost formaintaining a single oil-sector-dominant economy over the years without diversification. The paperprobes into the effects in theaftermathof the global oil crash of the COVID-19 pandemicwith its devastating impacton the Nigerian economy afterwards, offering possible solutions to the impending economic catastrophe.The research paper adopts a methodology thatcombines a descriptive design with historical and quantitative approches.The Comparative Cost Advantage theory of 1817 by David Ricardo suffices for the theoretical framework of analysis.Data analysis employs Spearman's Rank Correlation Coefficientfor empirical data collated on significant oil-price fluctuations from the OPEC Basket Crude Oil Price 2019/2020. Results and findings reveal thatthe Statistical and theoretical implications of Nigeria's overreliance on oil suggest a strong consequentialoutcome considered to be desastrous to the continued sustainability of the Nigerian economy afterwards,in the light of the trending COVID-19 global oil crash.Conclusion and recommendations advocatefor Nigerian to embrace agriculture as the primary sector earmarked for economic development and as key to ensuring food subsistence. Suggestions are for Nigeria to diversify its internal revenue sources and to run less commodity-dependent economy. Prognosis holds that with the recent signing of the African Continental Free Trade Area agreement (AfCFTA),Nigeria, in a bid to forestall the impending economic disaster, can take the advantage to become an agricultural and business powerhouse in Africa.

**Keywords:** Agriculture, COVID-19 global oil crash, development, Nigerian oil-based economy, non-diversification.

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### I. Introduction

That the Nigerian economy has thrived successfully over the years, is its single oil-rich export base. There is no gainsaying the overdependency on its oil sector and its non-diversification on other sectors to balance the growth and development of the monocultured economy.The petroleum sectorhas become the bedrock of the nation's economy ever since the end of the Nigerian civil war (1967-1970).Although crude oil had entered the export list since 1958,oil actually asserted its overriding importance in the Nigerian economy in 1970.Nigeria has been known as a major producer of crude oil and the importance of this commodity has been highly manifested in the nation's economy. Starting from the early 70's, the petroleum industry became the dominant industry in the economy, following quickly after agriculture – which used to be the dominant industry before the discovery of crude oil in 1956 at Oloibiri, now in Ogbia Local Government Area of Bayelsa State, in the Niger Delta region. Since then the Nigerian economy has been dependent on the oil sector as the major sector of government revenue and foreign exchange (Ojamerage and Oyaide, 2007). Today, the oil sector contributes about 86 percent of the Federal Government revenue, accounts for about 90 percent of the country's foreign exchange earnings and constitutes 25 percent of the nation's Gross Domestic Products. Crude oil has therefore dictated the pace of economic, political, social and cultural progress in the country.

Crude oil, a commodity otherwise referred to as "black gold" has been of strategic importance in the international market, particularly since the second-half of the twentieth century as noted by Tugendhat and

Hamilton (1975) as well as the OPEC bulletin (1984). It has been both the most important source of energy and the largest internationally traded commodity worldwide. The importance of crude oil earnings to an oil-producing country like Nigeria cannot be overemphasized. This discovery of oil has systematically submerged agricultural sector which used to provide the bulk of Nigeria's revenue. Structurally and otherwise, the oil boom of the 1970's helped significantly in transforming Nigeria from an ordinary third world black country to an appreciate position both in term of development, infrastructure, international politics, et cetera. It is the first oil-producer in West Africa and the second largest oil-producer in Africa, after Libya. Among the major world oil producers, Nigeria ranked sixth with an output of 110 million tons in 1974. Today, some urban and rural developments in parts of the country have been traced to the oil wells located in the remote villages of the country from where the crude is gotten. It is the crude oil earnings that have brought sky crappers, express roads, development of the Federal Capital Territory (FCT), flyovers, bridges and other physical structures to cities and towns all around the country. In support of this fact, most of the available literature on the importance of oil to the Nigerian economy have relatively common consensus on the nature and extent of the interdependent relationship existing between the change in oil prices and the resultant effects on the Nigeria's economy and the correlation between Nigeria's Gross Domestic Product (GDP) output and oil prices. Hence, most of the consulted writers (Hamilton 1996; Lescaroux and Mignon 2008; Alper and Torul 2009; Bolaji and Bolaji 2010; Syed 2010; Rasmussen and Roitman 2011; Bouzid 2012; Shaari et al. 2013; Difiglio 2014) have all shown that oil-price shocks influence all sectors of the Nigerian economy to a large extent.

Flowing from the ongoing premise, it had been seen that a significant change in the oil price in the international crude oil market would instantly result to an equivalent change in the country's GDP, causing a significant alteration in the development of the entire Nigerian economy at large. This had been the case evidenced before now, in the occasions where glut occurred in the oil market in 2014 and 2015. This led to a protracted economic downturn in Nigeria and world over.

According to a World Bank report, 2014 to 2015 fall in oil price was the third highest within last 30 years after the 1930 great recession, the era during which oil began trading in futures exchanges, and with "perfect storm" as a driven factor of conditions that exerted intense downward pressure on prices. It was also observed that changes in supply and demand expectations contributed to the downfall in oil prices, these contributions were neither peculiar nor unusually large.

It is against this established background of perpetual dependency on oil sector by the Nigerian economy that the research sets to examine the implications of the COVID-19 global oil crash on the Nigerian oil-based economy and its effects in the aftermath. In the face of the present challenging economic situation posed by the pandemic, the punitive cost for having run an single oil-sector-dominant economy from 1970 without a distinct diversification on other sectors becomes inevitable. It is against this scenario that such questions arise as to how Nigeria could battle successfully with the situation at hand, having kept all its eggs in one fragile basket all these years. How can Nigeria wriggle out of this endemically diseased global economic situation? Could there be a shortcut or an alternative economic strategy to apply and save the situation at hand not withstanding the detrimental effects in the aftermath? These among many innumerable questions form the basis for delving into this research work. It informs the adoption of the theory to be applied in the verification of the tentative propositions. Hence, the theory of Comparative Cost Advantage is deemed to suffice.

## **2.1 Theoretical Framework**

The theoretical framework of analysis adopted by this research paper is the Comparative Cost Advantage theory. The Theory of Comparative Cost Advantage is a theory that posits that countries will engage in trade with one another, - exploring the goods that they have a relative advantage in productivity. It is an economic theory that refers to an economy's ability to produce goods and services at a lower opportunity cost than that of trade partners. It refers to the ability to produce goods and services at a lower opportunity cost, not necessarily at a greater volume or quality. It introduces opportunity cost as a factor for analysis in choosing between different options for production. The theory was first introduced in the year 1817 by David Ricardo who was an early 19th-century British political economist and one of the most influential of the classical economists along with Thomas Malthus, Adams Smith and James Mill. Ricardo's Comparative Advantage refers to a comparison the British economist made between England and Portugal. He believed in free trade and a free-market economic system. In illustrating Ricardo's Comparative Cost Advantage, the two countries: Nigeria and Ghana, for instance, produced crude oil and gold of equal quality. Nigeria presumably could produce both crude oil and gold in fewer hours than Ghana. However, the relative costs of producing crude oil and gold differ between the two nations. The table 2.1 below presents a clear illustration.

**Table 2.1 Illustration of Comparative Cost Advantage Theory**

<b>David Ricardo's Comparative Cost Advantage</b>			
<b>Hours of Work Needed to Produce 1 Unit of Goods</b>			
<b>Country</b>		<b>Crude oil Barrel</b>	<b>Gold Carat</b>
<b>1.</b>	<b>Nigeria</b>	90	80
<b>2.</b>	<b>Ghana</b>	100	120
<b>Both countries are better off trading with each other than existing in isolation</b>			

Following David Ricardo's example, Nigeria presumably has superior productivity in both crude oil and gold. Ghana would need 100 labour hours to produce one barrel of crude oil or 5/6 of a carat of gold. Meanwhile, Nigeria would require only 90 hours of labour to produce one barrel of crude oil or 9/8 of a carat of gold. In summary, therefore, Nigeria would have an absolute advantage in producing crude oil due to fewer labour hours it would employ, while Ghana, on the other hand, would have a comparative advantage over Nigeria due to lower opportunity cost that it would sacrifice on the same product.

The Comparative Cost Advantage theory therefore states that two countries are better off if they trade instead of trying to be completely self-sufficient. Even if one country is better at making all goods than another, the two nations should still trade (David Ricardo, 1817). The inference drawn from the theoretical analysis of the Comparative Cost Advantage could be applied in Nigeria to resolve the turbulent economic situation facing the country for its headlong operation of a mono-cultural economy based on crude oil sector to the detriment of other sectors.

Bringing the analysis down to the Nigeria's situation, to apply the Ricardo's economic theory of Comparative Cost Advantage would imply that Nigeria should not only specialize in producing only those products over which it has absolute advantage, such as crude oil, but should rather diversify by delving into producing other goods which it has comparative cost advantage over other trade partners in the global market.

Although the analysis of this same economic principle and theory as it relates to the Nigerian economy, has been done by several other prolific writers in the field, it has not been their major hunch to consider the costs of non-diversification as a punishment, especially under a global economic topsy-turvy as evidenced in the current COVID-19 pandemic. The punitive cost will usually arise as a consequence of neglect and abandonment of the forgone alternatives (opportunity costs) due to the maximum attention paid on the production of the goods (crude oil) with absolute advantage to the detriment of the production in other sectors with comparative advantage. The punitive cost of non-diversification would actually come to full light in the aftermath of the present pandemic devastation. What Nigeria experiences at the moment through the global oil crash stems from the economic principle of decrease in the marginal output leading to negative returns, otherwise known as law of diminishing returns. In a turbulent and endemically destabilized world economy of COVID-19, where isolation becomes the order of the day, crude oil would definitely attract less attention in the world market than low carbon goods and agricultural products. The question would be, as oil price drops to sub-zero and oil becomes almost non-merchantable as it has been since the pandemic broke, in the world oil market, even after the pandemic, what would Nigeria rely on? With its entire gigantic and expensive 2020 annual budget, will Nigeria continue to depend on the western aid, palliatives, subsidies and borrowings to maintain its largest populated black economy in the African continent?

The case in Nigeria seems to worsen, since most countries have obviously implemented some level of lockdown within their borders to curtail the spread of the endemic virus. This is having huge adverse effects on businesses in Nigeria. Most industries particularly, airline, retail, financial institutions, sports, tourism and hospitality, oil and gas, and other service-related industries, have been adversely affected. In Nigeria, with the huge population of the country in the informal sector and many surviving on daily wages, and the growing existence of Micro, small and medium enterprises (MSMEs), the continued total lockdown will further cripple businesses, accelerate the rate of job loss and increase the level of poverty with the consequential effect of increased insecurity. This is unlike the advanced nations that have made good provisions for the people and businesses through offers like "stimulus Package" with more direct intervention such as direct wage or income support, tax credits or tax deferrals, wage subsidies, short-term work schemes, moratoriums on loan payments. Some western countries like France, Denmark, UK and US have also gone further to establish a Coronavirus Job Retention Scheme, where the government pays up to 60% of private-sector salaries until June, as long as workers are not sacked so as to reduce the negative impact on businesses and slow the rate of job loss. The US alone has deployed a US\$2.2 trillion stimulus package which, The US Senate also just passed a bill for \$484 billion "More Small-Business Stimulus", including a \$320 billion "Paycheck Protection Program" to enable small businesses to pay their staff salaries for two months. But what Nigeria has witnessed so far has been highly disappointing and appalling.

This is why the Comparative Cost Advantage Theory in reality, maintains that free trade works even if one trading partner in a deal holds absolute advantage in all areas of production – that is, one partner makes products cheaper, better and faster than its other trading partner. In that sense, it would have cost Nigeria nothing to diversify and develop other sectors independently, apart from the oil sector, in order to encourage free trade with comparative advantage in those sectors long before the emergence of the current and deteriorating economic downturn.

### **3.1 Methodology**

This research paper adopts a methodology that combines a descriptive design with historical and quantitative approaches. The paper employs data collection technique that is basically dependent upon secondary sources. A cross-section of data from both national and international sources collected purposively from random samples suffice for the presentation and analysis. The data presentation appears in charts, tables and graphs. The methodology herein applies a purposive sampling technique that focuses only on the data that reflect the current economic situation of Nigeria as regards the regressive position of crude oil sales in the world market since the outbreak of the COVID-19 pandemic. The data analysis employs Spearman's Rank Correlation Coefficient (SRCC) as inferential statistical tool used to summarize the strength and direction (negative or positive) of the relationship between the two variables of the COVID-19 global oil crash and the Nigerian oil-based economy. Hence the research questions are structured and hypotheses formulated to guide the research.

### **3.2 Research Questions**

From the observation of the current turbulent global economic downturn and the deteriorating oil-price slump caused by the outbreak of the COVID-19 pandemic, critical questions have arisen. These questions raised by the researcher on the course of gathering the research data tend to guide the research.

1. Is there any relationship between the COVID-19 global oil crash and the future of the Nigerian oil-based economy?
2. What is the punitive cost on Nigeria for having been running a single oil-based dominant economy all along, without diversification on other sectors till intercepted by the outbreak of the COVID-19 pandemic?
3. Could there be any alternative economic strategy to apply and save the worsening economic situation of Nigeria at the present, not minding the detrimental effects in the aftermath?
4. What are the aftermath implications of the COVID-19 pandemic oil crash on the Nigerian economy and the way out?

The above questions are pertinent and akin to the reason for the execution of the research.

### **3.3 Research Hypotheses**

The research goes with the following tentative statements of null ( $H_0$ ) and alternate ( $H_1$ ) hypotheses, respectively:

1.  **$H_0$ :** There is no monotonic relationship between the two variables of the COVID-19 global oil crash and the Nigerian oil-based economy.
2.  **$H_1$ :** There is a monotonic relationship between the two variables of the COVID-19 global oil crash and the Nigerian oil-based economy.

One of the two hypotheses (either null or alternate) is to be considered and the other one to be rejected by the end of the analysis of the data gathered for the purpose of verifying the hypothesis and answering the research question.

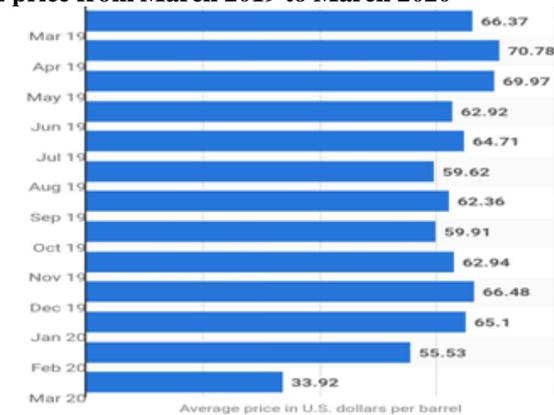
The relevant data to be used for the analysis are presented below.

### **4.1 Data Presentation**

The data are presented in charts, tables and graphs in order to easily summarize large set of data in visual form, to be able to estimate key values at a glance and to permit a visual check of the accuracy and reasonableness of calculations done in the data analysis.

**Table 4.1 The Average monthly OPEC basket crude oil price from March 2019 to March 2020**

S/N	Month and Year	Average Price in U.S Dollars Per Barrel (\$)
1.	March 2020	33.92
2.	February 2020	55.53
3.	January 2020	65.10
4.	December 2019	66.48
5.	November 2019	62.94
6.	October 2019	59.91
7.	September 2019	62.36
8.	August 2019	59.62
9.	July 2019	64.71
10.	June 2019	62.92
11.	May 2019	69.97
12.	April 2019	70.78
13.	March 2019	66.37

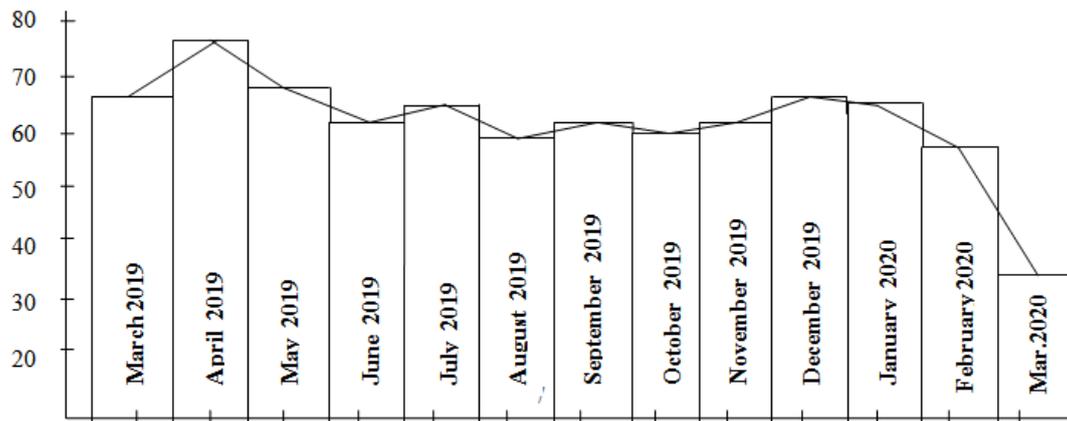


Details: Worldwide; OPEC; EIA; March 2019 to March 2020  
© Statista 2020

Source: <https://www.statista.com/statistics/277914/month-average-prices-of-the-opec-crude-oil-basket/>

The above statistical data of average monthly OPEC basket crude oil price from March 2019 to March 2020 portrayed the level of volatile fluctuations that have been experienced in the world oil market before the current oil crash. The data gathered incrementally to the last point of the critical situation as at the time of the research. It is therefore obvious from the table that the price of oil had remained in zigzag fluctuations throughout 2019 but came to degenerate and dwindle heavily towards the first quarter of 2020. The bar chart (bar graph) reflected the same information in a more visualized form. The frequency polygon and histogram below provide more illustrations.

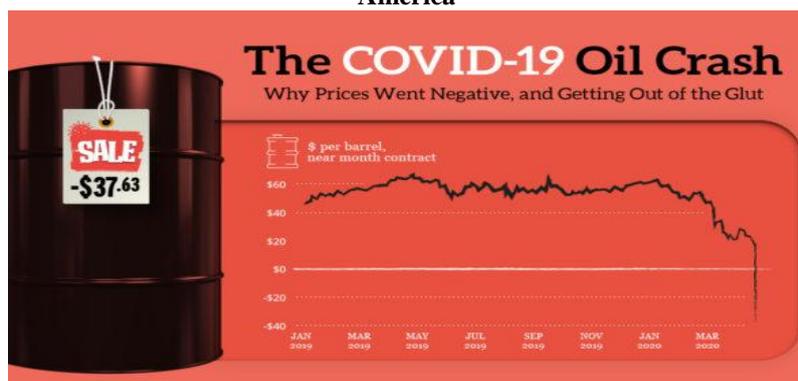
**Figure 4.1.1 The Histogram and Frequency Polygon of Average Monthly OPEC Basket Crude Oil Price from March 2019 to March 2020**



Source: Researcher's illustration with data from OPEC data base, 2020.

The information from all the generated data points to the fact that the COVID-19 pandemic which the outbreak has been traced to December 2019 in Wuhan, China, has automatically exerted its shrinking, lethargic tendencies on the world economy as it is currently evidenced in the oil sector of OPEC member countries. The case of the US oil market glut explains further on the devastating impact of the global pandemic on the oil sector.

**Figure4.1.2 How Oil Prices Went Subzero: Explaining the COVID-19 Oil Crash in the United States of America**



**Source:** Jeff Desjardins, Editor-in-Chief of Visual Capitalist, available at: <http://www.visualcapitalist.com/subzero-oil-price-covid-19/>

The historic COVID-19 oil-price crash has lasted as the great lockdown continues to turn markets on their abnormal regressive end. The world has been baffled by West Texas Intermediate (WTI) crude — the U.S. benchmark oil price — which somehow flipped negative for the first time in history. Questions have arisen as to this reality: How was that possible? And how did it tie into the COVID-19 oil price crash in general?

The explanation for this is simple. Oil is a geopolitical game, and big price swings always come with a geopolitical undercurrent. This particular story picked up steam in February as OPEC+ producers tried to negotiate a production cut, amid concerns that COVID-19 could impact demand. Russia walked out on these meetings, and Saudi Arabia responded by undercutting oil prices by \$6-8 per barrel. The world went into lockdown, energy demand dissipated, and oil producers continued to pump at will. Then on April 9th, nearly a full month after COVID-19 was declared a pandemic, Russia and Saudi Arabia finally settled their differences. However, this truce came too late — prices had already fallen about 60% from February highs.

The price of WTI crude has gone subzero. The data shows that up until recently, there was a fairly run-of-the-mill oil price crash — but then prices have suddenly sunk below zero, with May futures for WTI oil closing at -\$37.63 on April 20th. For the first time in history, producers were willing to pay traders to take oil off their hands. This oddity is partially a function of the particularities of futures contracts. It is eventually turning to a situation of buyers being wanted at all cost. Although futures contracts normally rollover to the next month without much happening, but in this case, traders saw the May contract as a “hot potato”. No one wanted to be stuck taking delivery of oil when the world is awash in it and the country is in lockdown.

In the world market, oil futures contracts normally specify a time and place for delivery. For WTI oil, that specific place is Cushing, Oklahoma. With most storage capacity booked already, taking physical delivery wasn't even an option for many players. In other words, sellers outnumbered buyers by a crazy margin — and because oil is a physical commodity, someone has to ultimately take the contract.

However, at the time of publishing, the May contract and spot prices have “rebounded” to about \$10. The June contract is slightly higher, at \$13. The International Energy Agency (IEA), Oil Market Report for April, 2020, in portraying all these wrote: “*Never before has the oil industry come this close to testing its logistics capacity to the limit.*”

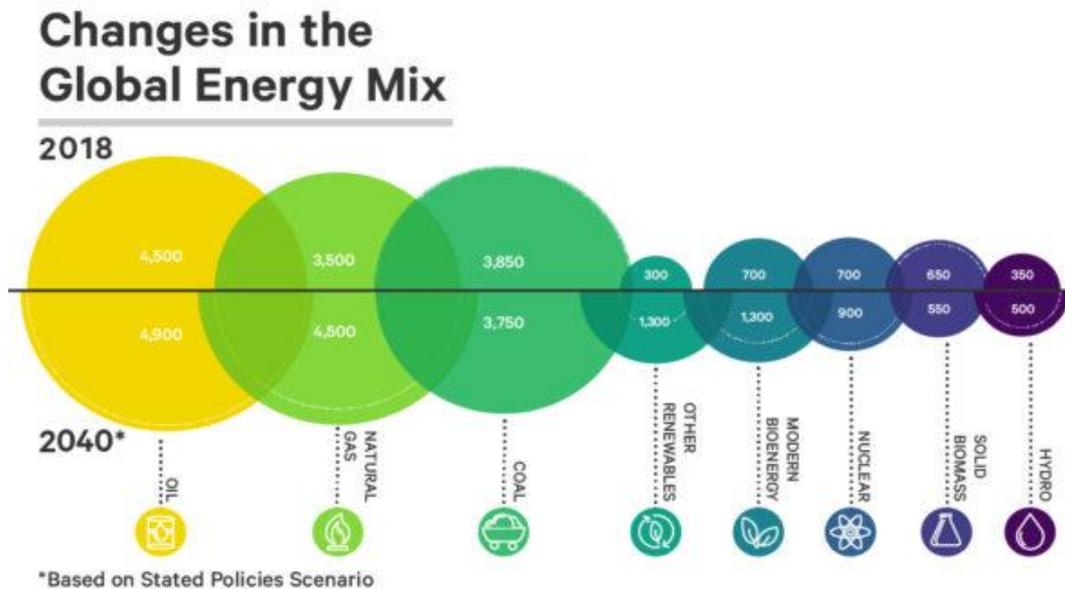
What does an advanced oil-producing country like the US do when oil is practically free?

The US stores as much of oil as it can, and hope that at some point it can sell a barrel for more than it has currently been. Unfortunately, everyone has the exact same idea, and as a result there is a historic glut that is filling up the world's storage capacity both on land and at sea. For instance, in March, it was estimated that 76% of the world's available oil storage capacity was already full. A record-setting 160 million barrels of oil is being stored on tankers at sea, according to Reuters (March 31<sup>st</sup>, 2020). The cost of renting an oil supertanker has gone through the roof. It's jumped from \$20,000 per day to \$200,000-\$300,000 per day, according to Rystad Energy (2020).

Conclusively, it remains to be seen how fast the transportation industry will recover in a post-COVID-19 world, but for now the outlook for all oil producers is grim. The continued fallout will not only affect industry, but also the countries that rely on oil exports to balance their budgets.

Recently there have been some changes in the global energy mix. Rystad Energy has a publication to that effect.

Figure 4.1.3 The World's Projected Energy Mix, 2018-2040



Source: Rystad Energy; <https://www.rystadenergy.com>.

The only possible disrupter to oil is the incentive to explore alternative forms of energy such as renewables, majorly solar and wind, in response to the impending carbon tax fuelled by fears of global warming and pollution. According to Amy Jaffe and Jeroen van der Veer, leading experts on global energy policy, factors such as technological advancements, the falling price of batteries that power electric vehicles and a post-COP21 (UN Climate change conference in Paris in 2015) push for cleaner energy could drive oil use below 80 million barrels a day by 2040.

These threats to oil do not seem practical on a meaningful scale in the near to medium term. The example in Germany seems to buttress the fact that renewables may not make sense in Europe and other cold climes, and that they can only be achieved with very steep and unsustainable subsidies. It is reported that Germany, the poster boy for renewables has so far invested about \$500b on wind and solar energy. And yet renewables account for only 3.5% of global energy use, while oil and gas accounts for as much as 60% (this excludes shale, peat and coal, which account for 10%). Electricity accounts for 18%, while biofuels and waste account for the balance 12%. In simple terms, the eight major oil companies are with a cumulative valuation of \$1.4trillion.

The inference from the ongoing analysis automatically necessitates having a critical insight into the similar case of the Nigeria oil-based economy. Nigeria is among the most vulnerable countries being affected by the prolonged period of low oil prices. The Nigerian economy had hardly recovered from the oil price crash that took place in 2014 – 2015 before the bombshell of the COVID-19 global oil crash came. Even the Nigerian currency has lingered as a classic petrocurrency having been intrinsically tied to global oil prices, causing a seismic shift in the Nigerian economy's sustainability. It could not have been an overstatement to aver that Nigerian economy wriggled through a checkered past and is currently hanging helplessly on tenterhooks, waiting for the catastrophic end and the after effects of the lethargic COVID-19 pandemic.

#### 4.2 Data Analysis

The data analysis of this research paper employed the use of the Spearman's Rank Correlation Coefficient (SRCC) statistical analytical tool. The Spearman's Rank Correlation Coefficient (SRCC) is the nonparametric version of another statistical tool known as the Pearson's Product-Moment Correlation (PPMC). The Spearman's correlation measures the strength and direction of monotonic association or relationship between two variables. Monotonicity simply means being "less restrictive" than that of a linear relationship. To apply the Spearman's Rank Correlation Coefficient in data analysis, the data must be ordinal, interval or ratio. Hence, when a scatterplot shows that the relationship between the two variables in concern appear monotonic, Spearman's correlation is usually preferable because this help measure the strength and direction of the monotonic relationship. Otherwise, if the relationship between the two variables appears linear as assessed through a scatterplot, the Pearson's correlation will be run to measure the strength and direction of the linear relationship.

Spearman’s returns a value from -1 to +1, where: +1 = a perfect positive correlation between ranks, and -1 = a perfect negative correlation between ranks, while 0 = no correlation between ranks.

The formula for the Spearman’s Rank Correlation Coefficient when there are no tied ranks is:

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

Where  $d_i$  = difference in paired ranks and  $n$  = number of cases.

Note: the present Spearman’s Correlation formula can only be used when there are no tied ranks among the data.

**Table 4.2 The Spearman’s Rank Correlation Coefficient of Average Oil Prices from March 2019 to March 2020.**

S/N	Month & Year (n)	Month & Year Rank	Average Oil Price in USD (\$)	Price Rank	D	d <sup>2</sup>
1.	March 2020	13	33.92	13	0	0
2.	February 2020	12	55.53	12	0	0
3.	January 2020	11	65.10	5	6	36
4.	December 2019	10	66.48	3	7	49
5.	November 2019	9	62.94	7	2	4
6.	October 2019	8	59.91	10	-2	4
7.	September 2019	7	62.36	9	-3	9
8.	August 2019	6	59.62	11	-5	25
9.	July 2019	5	64.71	6	-1	1
10.	June 2019	4	62.92	8	-4	16
11.	May 2019	3	69.97	2	1	1
12.	April 2019	2	70.78	1	1	1
13.	March 2019	1	66.37	4	-3	9
	<i>n</i> = 13					$\sum d^2 = 155$

Source: Researcher’s computation with data from OPEC BasketCrude Oil Prices2019/2020.

Using the formula:  $\rho = 1 - \frac{6 \sum d_i^2}{n(n^2-1)}$ , where  $n = 13$  and  $\sum d^2 = 155$ .

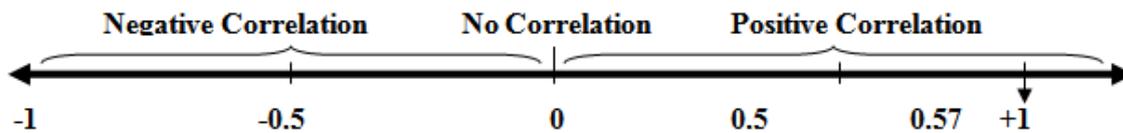
By substitution:  $\rho = 1 - \frac{6 \times 155}{13^3 - 13}$

$$\rho = 1 - \frac{930}{-13}$$

$$\rho = 1 - 0.4258$$

$$\rho = 0.574.$$

Now, to determine the impact of the final result of the correlation (outcome), the illustration below is pertinent.



### 4.3 Results and Findings

The final result from the calculation of the Spearman’s correlation is **0.574**. The result is in the positive side of the correlation.

Findings show that there exists a strong positive correlation between the two variables in consideration which are: the COVID-19 global oil crash and the Nigerian oil-based economy. In other words, there is a significant monotonic relationship between the two variables of COVID-19 global oil crash and the Nigerian oil-based economy.

**Decision Rule:** since  $\rho = 0.574$ , far greater than 0 and closer to +1, reject  $H_0$  and accept  $H_1$ .

From the afore-stated hypothesis, the decision is drawn ( $H_1$  is accepted and  $H_0$  rejected):

**$H_0$ :** There is no monotonic relationship between the two variables of the COVID-19 global oil crash and the Nigerian oil-based economy.

**$H_1$ :** There is a monotonic relationship between the two variables of the COVID-19 global oil crash and the Nigerian oil-based economy.

Therefore, by implication from the foregoing, it has been statistically proven that the implications of the COVID-19 global oil crash on the Nigerian oil-based economy will be of a very magnificent impact. Whether the impact will occur as highly positive (rewarding) or highly negative (punitive) will depend on the combative

economic strategy employed by the Nigerian policy-makers to weather or at least, mitigate the impending economic devastation. And where no preventive strategy is eventually put in place, the result will be unavoidably disastrous.

### **5.1 Summary**

This research paper has run through the whole gamut of examining the implications of the COVID-19 global oil crash on the Nigerian oil-based economy, considering the punitive cost for having maintained a single oil-sector-dominant economy over the years without diversification. The paper has also cast an insightful look into the impending outcome of the global oil crash of the COVID-19 pandemic on the Nigerian economy in the aftermath and offered the way out of the avertable economic calamity. The paper applied the theory of Comparative Cost Advantage of 1817 by David Ricardo in analyzing the theoretical framework of the research as well as the Spearman's Rank Correlation Coefficient (SRCC) in analyzing the empirical data collated on significant oil-price fluctuations from the OPEC Basket Crude Oil Prices 2019/2020. The final outcome of the computation of the data with the SRCC gave a strong positive correlation of  $\rho = 0.574$ , showing a significant monotonic relationship between the COVID-19 global oil crash and the Nigerian oil-based economy. The results and findings pointed to the inevitable statistical and theoretical conclusion that the Nigerian oil-based economy would definitely be facing an overwhelming impact of the COVID-19 global oil crash in the aftermath of the pandemic lockdown. The consequential outcome of the impending impact, unless otherwise averted, has been considered to be catastrophic to the continued sustainability of the Nigerian economy. The research papers recommended that Nigeria should embrace development in its agricultural sector. That, having signed the African Continental Free Trade Area agreement (AfCFTA), Nigeria should diversify its internal revenue sources by running less commodity-dependent economy, in order to survive the COVID-19 global oil crash and its disastrous after effect.

### **5.2 Conclusion**

At the end of this research, the following facts have been concluded from the findings:

1. There is a strong positive correlation between the COVID-19 global oil crash and the Nigerian oil-based economy.
2. There is a significant monotonic relationship between the COVID-19 global oil crash and the Nigerian oil-based economy.
3. There will be a great significant impact in the aftermath, on the Nigerian oil-based economy from the COVID-19 global oil crash.
4. The aftermath effect of the COVID-19 global oil crash on the Nigerian oil-based economy will be disastrous, if strong combative diversification strategies are not implemented.
5. Nigeria could take the advantage of forestalling the after effects of the COVID-19 global oil crash to become an agricultural powerhouse in Africa, having signed the African Continental Free Trade Area agreement (AfCFTA).
6. Global lockdowns and COVID-19 global oil crash have sent countries and governments into crisis mode. Only aggressive stimulus packages can be applied to stave off a looming catastrophic global economic collapse.

No research is inadmissible, however, the above conclusion was driven based on the present research result and findings. Alterations could be possible with an unprecedented turn of event and perhaps through the conduct of a fresh, further independent research.

### **5.3 Suggestion and Recommendation**

Nigeria has been involved in a volatile market in which it has little control over. The current oil price crashing position has given the world a peek into the future. With low oil prices backed by massive low-cost and quickly deployable reserves, concentrated in the Middle East; Nigeria cannot continue running an oil-based economy without taking effective actions to mitigate the impending negative outcome. The greatest worry about the whole economic situation of Nigeria has been that notwithstanding the current challenges, a bigger crash awaits in the aftermath. The COVID-19 global oil crash will definitely pass, but a larger threat to the oil industry awaits the Nigerian economy. Nigeria desperately needs to build an economy that is resilient to the volatility of oil and gas markets. Such resilience requires political cohesion, economic diversification, investment in education, science, technology and manufacturing capacity.

The recovery from the COVID-19 global oil crash might offer Nigeria the best chance in a long time for successfully pleading debt relief from multilateral agencies. If this becomes successful, the leaders would need to structure the lopsided economy and position the country to be less reliant on oil export earnings. Nigeria should take the opportunity of this economic downturn to deregulate downstream and reform its excess crude account. Saudi Arabia, for instance, has built an estimated \$500 billion in reserves but Nigeria's excess crude

account which started at \$20 billion in 2007 has been depleted to less than \$70 million as at February 2020. This is a deficit for Nigeria because Nigeria has a limited ability to increase its normal oil-barrels production but Saudi Arabia always has the option of producing more to reduce its losses, whenever oil price falls. This necessitates the need for diversification to begin notwithstanding the damages already done so far.

### **5.3.1 Agricultural Policy Measures**

Having been in economic quagmire caused by the running of a single oil-sector-dominant economy at the expense of agriculture in Nigeria, the lesson now is to go back to the drawing board and begin the diversification from the grassroots. Agricultural programmes would have to cease from being taken as rural development programmes of the government. It has been seen from the lesson of the COVID-19 oil crash that agriculture has to be the entire country's business and the only means of survival. Some of the measures to be taken by the government to enable the growth and development of the agricultural sector are:

- Expansion of agricultural productivity and output through provision of mechanized agricultural system at all levels.
- Promotion of both foreign and local private investments in agriculture through loans and subsidies.
- Provision of basic social amenities and agricultural infrastructures.
- Establishment of a special Bank of Agriculture devoted specifically to agricultural banking activities.
- Promulgation of agriculture-friendly laws and policy measures that will encourage agriculture.
- Restructure and renovate all the agricultural research institutes to encourage agricultural research, improved agricultural methods and best practices.
- Scholarships and grants for the study and research in agriculture.
- Discouraging politicizing of the implementation of agricultural projects in Nigeria.

It should be noted that agricultural diversification is not only government's responsibility. Other stake holders, corporate bodies, non-governmental organizations, private partners and well-meaning individuals in the country need to cooperate and collaborate with the government to make diversification into agriculture a success in Nigeria.

### **5.3.2 Business Policy Measures**

The cornerstone of the African business is the African Continental Free Trade Area agreement (AfCFTA) covering 54 out of 55 African Union (AU) nations, 52 of which have signed the agreement (including Nigeria on 7<sup>th</sup> July 2019), while 18 have ratified it out of the 22 countries required to ratify the agreement for it to come into effect. The AfCFTA is the promise for zero tariffs for over 90% of goods traded between African countries.

Nigeria being party to the AfCFTA agreement means that manufacturers in Nigeria can produce goods locally and get it across our borders to sell in markets beyond Nigeria, without having to pay any duty. Tariffs by design are set to inhibit freedom of goods, making it less competitive for exporters with a high cost of production when compared to locally made goods. By eliminating them, businesses in Nigeria can reduce the cost price of their goods, thereby making them even more competitive across markets.

With the AfCFTA in operation, Nigerian manufacturers can export locally produced goods to poorer African countries with a lower taste for quality products. The more they compete with their local rivals and export, the better they get at production. This has been reported as the same model countries such as South Korea and Taiwan used for decades until they improved and became major exporters of electronics. The AfCFTA could help mitigate some of these challenges in so many ways. For example, by having access to markets beyond Nigeria, the investors can set up manufacturing hubs within Nigeria and export goods from Nigeria to member nations of the AfCFTA. This would increase the Foreign Direct Investment (FDI) into Nigeria, creating a knock-on effect on the exchange rate of the country.

The AfCFTA agreement would promote and encourage the transportation sector. Nigeria's transport sector is one of the fastest growing in Africa, posting a Gross Domestic Product (GDP) growth rate of 19.5% in the first quarter of 2019. When disaggregated, all sub-sectors (aside Road Transport), are either posting low single digits growth or are negative. This provides an opportunity for rail, air, and water transportation to grow. To enable goods to move from one end to the other, billions of dollars in investments will have to be made on building road networks that connect landlocked countries, bridges across rivers and lagoons, rail lines, and more airports. Travel agents, transporters, airlines, logistics companies, etc., stand to gain immensely with the operation of the AfCFTA agreement.

The AfCFTA could help alleviate this challenge as Nigerian businesses can reach out to resource-rich African countries for raw material inputs. Nigeria is also rich in natural resources and can now access new markets for exports. Nigeria's burgeoning service industry could earn a major windfall if everything goes right with the AfCFTA. Less advanced neighbouring African countries can rely on services from Nigeria to boost their local economy. Nigeria can export services like insurance, finance, logistics, legal, accounting,

construction, real estate development, and other consultancy based services, the same way these services are currently imported into the country. In short, Nigeria can take the advantage of the AfCFTA to become an agricultural and business powerhouse in Africa.

### **5.3.3 Physical and Monetary Policy Measures**

With oil earnings being the major source of Nigerian foreign exchange, amid the steep decline in oil prices, the official exchange rate has been adjusted from 306 to 360 naira. The exchange rate under the Investors and Exporters (I&E) window has also been adjusted from 360 to 380 naira in order to unify the exchange rates across the I&E window, Bureau de Change, and retail and wholesale windows. Furthermore, the government has introduced import duty waivers for pharmaceutical companies and increased efforts toward ensuring that they receive Forex.

In the wake of the COVID-19 global pandemic, the Central Bank of Nigeria (CBN) arranged a fiscal stimulus package, including a 50 billion naira (\$138.89 million) credit facility to households and small and medium enterprises most affected by the pandemic, a 100 billion naira (\$277.78 million) loan to the health sector, and a one-trillion naira (\$2.78 billion) to the manufacturing sector. The CBN's one-trillion naira stimulus in the manufacturing sector, is actually aimed at boosting medical equipment production and also switching towards more local production, away from foreign imports. In addition, the interest rates on all CBN interventions have been revised downwards from 9 to 5 percent, and a one-year moratorium on CBN intervention facilities has been introduced, effective from March 1<sup>st</sup>, 2020. All these will reduce Nigeria's reliance on oil money to finance its foreign imports in the sector.

Given the size and scope of the economic impact of the pandemic, there is the need to implement other recovery strategies to stimulate demand. Thus, the following fiscal and monetary policy measures are therefore recommended:

- Although there is a cash transfer program in place, the federal government should improve efforts towards enhancing the efficiency and effectiveness of the distributive mechanisms to reach households that are worst-hit by the pandemic.
- The Federal Inland Revenue Service (FIRS) as well as State Inland Revenue Services (SIRS) should waive payments on personal and corporate income tax for the second quarter of 2020, considering that the shock has affected the income and profits of households and businesses.
- The CBN's decision to increase the Cash Reserve Ratio (CRR) from 22.5 percent to 27.5 percent in January 2020 should be revisited to provide liquidity for banks so that banks can, in turn, create credit to the private sector.
- FIRS and SIRS should delay tax collection for the worse-hit sectors including tourism, the airline industry, and hoteliers in order to enable them recover from the steep decline in demand.
- To provide additional liquidity in the Forex market, the CBN should establish a swap facility with the U.S. Federal Reserve and/or the People's Bank of China, as was done in 2018, to provide dollar and yen liquidity to financial institutions, investors, and exporters. This move would ease up Forex shortage in the financial market and economy.
- While the naira has been adjusted as a result of the Forex shortage, it is important that the CBN maintains exchange rate stability by deploying external reserves in order to avoid investors selling off naira-denominated assets.

The COVID-19 pandemic is a wake-up call to policymakers as the unusual and unprecedented nature of the crisis has made it impossible for citizens to rely on foreign health care services and more difficult to solicit for international support given the competing demand for medical supplies and equipment. A more integrated response spanning several sectors—including the health, finance, and trade sectors—is required to address structural issues that make the country less resilient to shocks and limit its range of policy responses. In the long term, tougher decisions need to be made, including but not limited to diversifying the country's revenue base away from oil exports and improving investments in the health care sector in ensuring that the economy is able to recover quickly from difficult conditions in the future.

### **5.4 Contribution to Knowledge**

At the end of this research, it could be obvious that the following new grounds have been broken for the utility of further researchers in the field of study, academic institutions, governmental and non-governmental organizations, private individuals and policy-makers:

1. Profound knowledge on the extent of the impact of the COVID-19 global oil crash on the Nigerian oil-based economy and the need to design a strong economic bulwark to fight back the after effect.
2. Follow-up study for the theoretical and statistical analysis of the implications of the COVID-19 oil crash on the Nigerian oil-based economy and the after effects.

3. Reference material for solutions to the punitive cost of non-diversification of the Nigerian oil-based economy up to the 21<sup>st</sup> century.
  4. Informed prognosis and reliable prediction on the future strategic economic steps to be taken to save the Nigerian economy, as well as other oil-based economies of the world from avertable impending economy catastrophe.
  5. Extensive research for solutions to the fundamental problems of the Nigerian oil-based economy.
- The above areas, among others have been considered purposefully selected and researched upon for the benefit of public utility and conduct of further research through the publication of this research paper.

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