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COVID-19 Pandemic: The Impacts of Crude Oil Price Shock on Nigeria's Economy, Legal and Policy Options

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Abstract: The outbreak of the COVID-19 disease has gravely shaken the world economy. The economies of many countries have come under severe strain; Nigeria's petroleum industry has been particularly affected. This has threatened the countries' budgets and other essential needs involved in citizens' welfare. The government is taking drastic measures to combat this scourge, with few results. This study adopts a doctrinal legal research approach and considers both the primary and secondary sources of law, such as judicial precedents, international conventions, and peer-reviewed journals. Legal theories were also applied as an academic lens for modelling the research. The justification for using the method was to establish the trustworthiness of the findings on the impacts of crude oil price shock on Nigeria's economy, its legal and policy options. This study investigates the influences of oil price shock on the country's economy and the legal remedies required to build economic resilience to mitigate future contingencies. The study argues that the provisions of the extant laws can be utilised as a preventive mechanism for tackling the impacts of oil price shock on Nigeria's economy. The study recommends other remedial measures, such as diversification from oil and gas to non-oil sectors. The study designed a hybrid model for mitigating the influences of crude oil prices on the country's extractive wealth. The study advocates for the need for an effective legal regime to shield the domestic economy from international oil price instability. The implications of the main results are that crude oil production and prices play a significant role in real growth enhancement. However, they exert a negative but unsustainable standard innovation on growth, which could be mitigated through appropriate legal and policy options. Nigeria needs stringent, transparent, and the best petroleum management practice laws to manage its petroleum sector's revenues for sustainability.

Keywords: COVID-19; oil price shock; Nigeria's economy; legal; policy remedies



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1. Introduction

The unprecedented global financial shock triggered by the COVID-19 pandemic has caused a deterioration in petroleum values. The coronavirus was first discovered in Asia but proliferated extensively in Europe and fragments of the Americas; this has occasioned an inclusive economic recession that has been more extensively experienced than the slump and the global economic predicament of 2008 and 2009. Nigeria's economy recorded a downturn in the year 2020, retrogressing by three (3) years of revitalization owing to a decline in crude oil prices as an aftershock of the international decline in demands and strategies for combatting the upsurge of the COVID-19 pandemic. Nigeria's economy lost approximately USD 15.8 billion. The country's gross domestic product diminished by 6.1% in the second quarter and by 3.62% in the third quarter of 2020 before recovering by 0.1% in

the fourth quarter of 2020. The gross domestic product was reduced to 1.98% due to the influence of the pandemic [1].

Prior to the cruciality of crude oil to the nation's economy, in Nigeria, before the discovery of petroleum in a viable magnitude in 1956, agriculture was the mainstay and the key driver of the country's economy, contributing approximately 70% to the gross domestic product (GDP). It generates employment, revenues, and foreign exchange for the Federal Government [2].

Crude oil is one of the main sources of commercial energy; other sources are electricity and coal. Energy has a major impact on every aspect of the state's economy, and it is significant in the economic growth of any country, especially in transportation and manufacturing. Crude oil prices are the principal determinant of the use of energy commodities across the world [3]. This has become a major challenge that impedes growth due to the incessant deterioration of crude oil prices, which has caused inflation and instability in the country's economy.

The input of petroleum in the Federal Government's revenues is 83%, which is huge, and the decline in crude oil prices has called for a re-thinking of the sources of Nigeria's revenues to boost the country's economy and foreign exchange earnings via the exportation of products to mitigate the adverse impacts of the decline in fossil fuel oil prices [4].

Crude oil prices have witnessed some substantial changes over the years, as the price per barrel has either increased or decreased in the global oil market; despite the country's abundant natural resources, these changes have either positively or undesirably impacted Nigeria's economy and caused inflation, unemployment, debt accumulation, a low standard of living, capital reduction, and instability of the economy, among other things, due to corruption and poor management of oil revenues [5]. This has been a source of concern to nations that are dependent on petroleum resources, as the revenues needed to execute the desired political, socioeconomic, and environmental advancements have been lost through corruption and mismanagement due to ineffective laws and weak regulatory institutions [6].

In addition, over the last few years, crude oil production has been impeded due to security problems, oil theft, and the devastation of crude oil production infrastructure in the Niger Delta areas, thus forcing many oil companies to shut down crude oil operations or to declare *force majeure* [7].

Moreover, the development of a country is determined by the value and proper management of its revenues. Nigeria's prudent management of its crude oil revenues will translate into social, economic, political, and environmental development. This study examines how an effective legal framework and a strong institutional framework are germane to the transparent and accountable management of crude oil revenues [8].

The petroleum sector consists of upstream, downstream, and midstream activities. Upstream activities are the disquisition and extraction of crude oil and drilling, among others. The industry is controlled by multinational oil firms, such as Shell, Chevron, Mobil, Agip, Addax, and Total, which presently lead the sector with approximately 80% of the nation's petroleum output. In addition, downstream undertakings are the refinement of petroleum products, such as gasoline, kerosene, and lubricant, as well as the distribution of oil products. In 2008, Nigeria was rated the 13th largest producer of crude oil globally, with 1.842 million bbl/d. Nigeria has been an associate of the OPEC (Organisation of Petroleum Exporting Countries (Vienna, Austria)) since 1971, with current production limits of 1,673,000 bbl/d [9]. The bulk of Nigeria's oil production is exported, with about 40% being exported to the United States, 11% to India, and 10% to Brazil.

Under the 1999 Constitution of the Federal Republic of Nigeria and the Petroleum Industry Act 2021, all minerals, as well as crude oil and natural gas, are bestowed on the government. Production licences are granted through Joint Ventures, Production Sharing Contracts between the nationalized oil firm, the Nigerian National Petroleum Corporation Limited (NNPC Ltd) or its subsidiaries and other conglomerate oil firms. Other prescribed agreements such as the sole risk arrangements and risk service agreements [10]. The

Petroleum Industry Act is designed to reform the entire petroleum sector. As part of the petroleum sector reform, the Nigerian Content Development Act 2010 was enacted to mandate oil companies to use the indigenous company to fulfil their tasks in the sector. However, the challenge has been the lack of transparency, insecurity and corruption [11]. The newly enacted Petroleum Industry Act could be a major step in combating these challenges. However, there is a misgiving about its stringent implementation.

The country's downstream oil industry has constantly dawdled due to the current controlled price system, instead of total free competition or self-regulation of the oil market [12]. While the government attempts to encourage funding of the industry due to its potential to advance the country's fiscal development which remained throttled owing to excessive regulation of the oil sector [13].

Nigeria is endowed with proven natural gas reserves of 5.25 trillion M3 or 2.8% of total world reserves. The majority of the gas is produced along with crude oil, so production tends to be hampered due to insecurity such as attacks on crude oil fittings and the shutdown of oil production by multinational oil companies due to insecurity. Lack of infrastructure to produce gas, absence of competitive natural gas markets and a lot are flared due to lack of finance to acquire the technologies needed to convert the flared gas to commercial natural gas [14].

To meet the rising local and international demands for gas, Gas Master Plan was endorsed by the Federal Government in 2008 to combat gas infrastructure, export short-term reserves challenges and in some instances, gas is only available after the oil has been extracted. The variance in financial capacities of different sectors to pay for gas. The gas master plan is to enhance the viable utilization and supervision of the gas industry to boost the multiplier consequence on gas in the national economy to place the nation in a competitive and high-value export market to enhance the domestic gas supply and to guarantee sustainable energy security in Nigeria [15].

Most export gas is liquefied natural gas (LNG) and two-thirds are exported to Portugal, Spain, France, Asia and Mexico. The main gas processing plant is on the Bonny Island in Port Harcourt and it is operated by the Nigeria Liquefied Natural Gas Limited (LNG) a joint venture with the following shareholding: NNPC has 49%, Shell Gas BV 25.6%, Elf 15% and Agip 10.4%.

The gas produced is transferred to the Benin Republic, Togo and Ghana via the West African Gas Pipeline (WAGP). The Nigerian Gas Company (NGC), was a subsidiary of the defunct NNPC, which is now been replaced with the NNPC Limited under the new Petroleum Industry Act 2021 and other extant regulations which regulates gas supply to the domestic market. It controls a 1000 km gas collection, circulation, and dispersion pipeline grid with 56.6 million M3 capacity per day.

The study is structured as follows: Section 1 focuses on the introduction, and Section 2 considers the methodology, statement of the research problem, literature review, theoretical framework, and international legal instruments on natural resources management. National legal framework on natural resources management, the findings and discussion of results revealed there is weak enforcement of transparency laws, and there is a need to diversify from oil and gas by fostering a viable production sector, particularly the automobile fabrication plants, cement, fabric industry, the mining, agricultural activities, Information and Communication Technology as significance segments of the country's economy. However, even the oil industry ought to develop to quicken the overall fiscal growth of the country's economy. There is a need for an inclusive national energy strategy to guarantee an inclusive growth of the petroleum industry to satisfy energy security and sustainability of the extractive resources in Nigeria [16].

As a contribution to knowledge, the article designed a hybrid model or legal strategies for cushioning the effects or impacts of crude oil price shock on Nigeria's economy. While Section 5 looks at the conclusion, policy implications and possible recommendations and advocates the need for stringent implementation of transparency laws in Nigeria's petroleum sector.

2. Literature Review

Several studies narrowed towards oil prices and economic growth has been conducted. However, none has considered in detail the COVID-19 pandemic consequences and the oil price deterioration on the country's economy with the legal and policy remedies. Agbaeze, in his work titled "Impacts of Fallen Oil Prices on the Nigerian Economy", argued that the deterioration in the oil value has harmful effects on the Nigerian economy, thereby necessitating the diversification of the country's economy from oil being the principal source of the country's economy [17].

The global oil boom of the 1970s generated enormous oil revenues for Nigeria's developmental needs but corruption and mismanagement hampered this stride as the abundance of oil resources appeared to be a curse to the country, due to Dutch disease syndrome.

Low oil price is not a new development as the oil and gas market has recorded significant price reductions across the globe. A study by Baumeister and Peerman reveals that the causes of oil price shockwaves caused by low oil price pliability of demand and supply [18]. As stated by Alban et al. the influence of deteriorating oil values on oil-producing nations are unforeseen upsurge in the oil production owing to the surge in the United States shale oil production, an upsurge in the Saudi-Arabia's production capacity, invulnerable than expected economic growth in the Europe, Asia and the appreciation of the United States Dollars which made crude oil more exorbitant [19] and this was aggravated by the ongoing war between the Russia and Ukraine which necessitated the economic sanction against Russia by way of cutting of gas supply from Russia.

Adejumo and Olomola argued that the influences of oil value shock on macroeconomic activities in the country were divergent from previous pragmatic findings in other nations. They conclude that oil prices do not affect Nigeria's output and inflation but noted that oil price shocks considerably impact the actual exchange rates [20]. Olomola opined that oil price alarms substantially influence the real exchange rate, and the consequence is that the actual oil price may give wealth influence and appreciate the real exchange ratio, thereby occasioning Dutch disease. Omisakin considered the influence of oil price shocks on the macroeconomic operation of the country as oil price outrages substantially, thereby contributing to the inconsistency of oil revenues and outputs. The finding confirmed that oil value shocks might not be unavoidable in a developing economy such as Nigeria [21].

Odularo and Okonkwo revealed the relationship between energy consumption and the Nigerian economy by using crude oil, electricity and coal to test this relationship by applying co-integration techniques [22]. The current authors opined that economic growth in Nigeria responds to a decline in crude oil prices with serious effects on real per capita GDP in Nigeria. The decline in crude oil prices has a significant influence on Nigeria's fiscal development, thereby contributing to instability and unsteady growth in the per capita real GDP.

3. Statement of Research Problem

The COVID-19 pandemic largely hampered Nigeria's economy; among other factors, oil prices suffered decline and this occasioned drop in daily crude oil production. The country's confirmed reserves were approximately 37 billion barrels of crude oil (bbl) in the last decade. Further, lately, the resources had degenerated from 37.5 billion barrels of crude oil (bbl) in 2017 to 36.9 billion barrels of crude oil (bbl) in 2020 [23].

The twilight of 2014 decline in oil prices caused a substantial decrease in Gross Domestic Products development for African countries from 5.1% in 2014 to 1.4% in 2016. During that period, crude oil prices declined by 56% over 7 months. The recent deterioration in oil values has been extremely swifter, with some scholars envisaging further crude prices deteriorations than in 2014, oil prices have declined by 54% in the three months since the commencement of the year, with prices dwindling to lower than USD 30 per barrel. Non-oil product values have also deteriorated meanwhile in January, natural gas and metal values declined to 30% and 4%, separately. The current price of Brent Crude is 73.62 [24].

In January 2019, the crude oil price per barrel accumulated to 57 United States Dollars per barrel, however in April 2020, the price plunged by 15 dollars [25]. Crude oil, petrol, and fuel exemplified being the nation's mainstay of national revenues. The comparative significance of the petroleum industry in the country seems to be deteriorating from 13% of the country's GDP in 2013 to approximately 7% in 2020, although those of other sectors persist to grow.

COVID-19 is extensively mentioned to have occasioned unparalleled interruptions in the international supply of crude oil, the decline in crude oil prices, instability in international financial markets, intercontinental travel restraints, and termination of numerous global events [26]. Oil price fluctuations are primary concerns for the economies of Nigeria, and its impacts on the growth of the country are challenges to policymakers on budgets and national economic plans for the nations. This challenge is critical; it has impacted the Federal Government's economy and policies as the country solely depends on the revenues from oil. This has hampered the development and progress of the nation via negligence of other critical sectors such as technology, solid minerals, manufacturing and Agriculture, which could have complimented the Federal Government's revenues during the decline in global oil prices regimes. This has opened the country's economy to various vulnerabilities or economic shocks as Nigeria is now confronting the United States Dollar shortages due to decline in crude oil prices [27].

Oil and gas have turned the nation's economy into a single-merchandise economy due to its over-dependence as the mainstay of the country's national income and foreign exchange, thereby making the economy vulnerable to economic shocks such as global low oil prices, the COVID-19 pandemic and other unforeseen economic contingencies.

Endemic poverty, persistent unemployment, corruption, inflation and poor management are consequences of the resource curse or Dutch disease syndrome [28]. Abundant oil wealth has no commensurate productive impacts on oil-producing countries, making them vulnerable to socioeconomic shocks and other unforeseen contingencies. Giraud opined that partisan and fiscal resolutions in the oil sector cause oil price instability [29].

The outbreak of the COVID-19 pandemic has killed more than One Million people, and the inclusive economy is envisaged to go down by a humongous of 4.3%. A lot of employments have been at risk, millions of sources of revenue are vulnerable, and approximately 130 million persons will be inhabiting in severe impoverishment if the pandemic endures globally [30]. The pandemic has severely brought about a serious setback to all spheres of life, including the oil and gas sector. This has thwarted development and progress globally.

The vandalism of crude oil network pipelines is a major challenge in the downstream industry, as petroleum merchandise losses have persistent unregulated. The defunct Nigeria National Petroleum Corporation lately revealed that the organization documented 45,347 pipeline vandalism on its downstream pipeline system within the nation from 2001 and January to June of 2019. The Nigerian Extractive Industry Transparency Initiative declares that the country has suffered a loss of approximately USD 41.94 billion in 10 years owing to pipeline vandalism [31].

The procrastination in the enforcement of the Petroleum Industry Act (PIA) is one of the significant rationale several extensive petroleum development schemes have dawdled in the country. Substantial schemes such as the Bonga Southwest, Aparo and Bonga North and Etan Zabazaba have been suspended owing to stunt regulatory and economic reservations in the sector. The schemes have exposed higher reservations, thus backing depletion of stockpiles and enhancing the production of petroleum in the country. Nigeria is approximated to have squandered USD15 billion yearly owing to procrastination in the enforcement of the Petroleum Industry Act 2021.

With the deterioration in the international request for fossil fuel, top petroleum firms are decreasing their fossil fuel investment and focusing more on low carbon energy sources. For instance, Shell has commenced total divestment of its coastal and deep-sea portfolios in Nigeria, and more multinational oil firms may follow suit soon.

Decarbonisation, which is also referred to as “Net Zero”, nations globally have undertaken to reduce greenhouse gas discharges due to this, the European Union, which is one of the main purchasers of the country’s crude oil, had undertaken to decrease carbon discharges by 55% by 2030. In addition, the United Kingdom has agreed to reduce carbon discharges by 78% in 2035, while Canada undertook to decrease carbon secretions by 40% or 45% by 2030. In 2019, the United Kingdom agreed to a binding obligation to attain Net Zero discharges by 2050, and other nations such as the Ukraine and China have also undertaken to attain net-zero discharges energy status by the year 2060. However, the ongoing war between the Russia and Ukraine may frustrate this laudable goal [32].

4. Theoretical Framework on Impacts of Oil Price Shock on Nigeria’s Economy

The Dutch-Disease theory began in the 1950s in Netherlands. It clearly describes the influence of low oil values; it is based on the harmful effects of the natural resources boom on the other critical sector of the nation’s resources due to their abandonment [33]. High revenues from natural resources resulted in a decline in economic growth due to corruption, mismanagement, and inflation, thereby decreasing competitiveness and profitability. Natural resources may become a curse on oil-producing states by making other sectors unpredictable, thereby hampering the economic growth. The theory is relevant to the study because, after discovering oil in commercial quantity, there has been no significant impact on the lives of the citizens and the economy and no landmark development has also been recorded from oil revenues. Owing to the flaws of this theory, the author utilises another theory called the theory of growth.

The Growth theory takes into consideration the interface among growth elements such as savings and capital formation. It considers the contributions from different determinants factors of growth as anything that will enhance economic efficiency, growth and development.

4.1. International Legal Instruments on Natural Resources Management

The 1982 United Nations Convention on Law of the Sea Article 76 and the African Continental Free Trade Area on November 2020, the Federal Executive Council of Nigeria ratified the country’s membership of the AfCFTA, with the agreement coming into effect on 1 January 2021. The agreement will increase trade volumes, especially with neighbouring countries [34].

Nigeria is one of the formation members of the African Union and the ECOWAS. The Abuja Treaty offers the founding of the African Economic Community (AEC) by 2028, utilizing recent regional fiscal societies’ mainstays. Under the territorial unrestricted trade arrangement outline, a territorial apparatus identified as ECOWAS Trade Liberalisation Scheme (ETLS) which began in 1990 to attain an operative and unrestricted commerce zone in the ECOWAS. Every member, as well as Nigeria, has been applying this arrangement since 1990. Other ECOWAS-connected arrangements comprise the ECOWAS Protocol of Free Movement, which generates the right of access and free trade in ECOWAS countries.

4.2. National Legal Framework on Natural Resources Management

The study examines the various legal frameworks regulating oil exploration in Nigeria to determine their effectiveness, adequacy and to strengthen the laws with identified flaws.

The 1999 Constitution of the Federal Republic of Nigeria (as amended), being the grund-norm of all laws in the country, bestows unqualified ownership of natural or mineral resources in Nigeria on the government being within the statutory capability of the Federal legislatures. This is provided under section 44 (3) of the 1999 Constitution (as amended) thus:

Despite the earlier specifications of this section, the whole property in and use of entire natural resources, mineral oils and natural gas in any land in the country or territorial waters and the Exclusive Economic Zone are conferred by the Federal Government and shall be controlled in such a method as stipulated by the Federal legislatures.

In addition, section 2 (1) of the Exclusive Economic Zone Act 1978 which integrated section 44 (3) of the 1999 Constitution of Nigeria provides as follows:

Devoid of bias to the Territorial Waters Act, the Petroleum Industry Act or Sea Fisheries Act, autonomous and complete right regarding the exploration and development of natural resources of the seabed, subsoil and super adjoining aquatic of the Exclusive Zone shall be bestowed on the Federal Government and such privileges shall be exerted by the authority as it may often designate it in any particular circumstance.

The significance of concentration of resource-control in the Federal Government from other levels of government has led to the denial of the oil-producing areas of any right to the ownership, control and management of their extractive resources, alienation by the oil-producing communities of their oil has occasioning poverty, gross environmental degradation, militancy, violent disruption of oil production and agitation for resources control in the oil-producing areas. Resource control would enhance and develop the capacity for self-reliance for all levels of government and the entire country because it will promote modification of the nation's economy from oil to other sectors such as agriculture, which was long abandoned [35].

Before the enactment of the Petroleum Industry Act 2021, the Petroleum (amendment) Act 1969, Petroleum Profits Tax Act, Deep Offshore and Inland Basin Production Sharing Contract Act, and Associated Gas Reinjection Act (Repealed), among others, were legal frameworks that regulate the oil and gas sector. However, most of these laws and regulations were archaic, incoherent and were not in conformity with the contemporary economic and oil gas industry realities. Attempts at passing the Petroleum Industry Bill in 2009, 2012, and 2018 failed because of political interests and other undertones factors.

The Act creates new regulatory authorities called the Nigerian Upstream Petroleum Regulatory Commission replacing the Department of Petroleum Resources (DPR). The Commission is the regulator of the upstream petroleum sector. The Commission involves the award of new oil licences and endorsement of assignments of licence interests. The Nigerian Midstream and Downstream Petroleum Regulatory Authority is the regulator of the midstream and downstream petroleum sectors with statutory function to monitor the energy market to promote healthy competition. The power of the Minister of Petroleum has been revised and reduced to guardianship over petroleum activities. His current functions regarding the award, revocation, endorsement of licences and transfer of licences now necessitate suggestions or approval of the Commission. The Nigerian National Petroleum Corporation is to be replaced by the Nigerian National Petroleum Corporation Limited (NNPC LTD) with the obligation to file annual returns (audited account), and payment of tax to the Federal Government similar to other regular companies operating in the sector.

The reform aims to comply with the international upstream norms by introducing transparency in the sector. Transition of NNPC Limited to a viable firm that does not depend on the Federal Government's funding. The current Petroleum Exploration Licences and Petroleum Mining Leases continue on their present terms with 20 years terms and must be approved via a fair, transparent and viable bidding process. The requirements to establish and fund Host Community Development Trusts Fund to initiate local projects, payment of 3% levy and decommissioning fund are now introduced. Marginal oil fields are to obtain distinct forms of licence to remedy the *lacuna* on the legal status and the likely significance of annulment or expiration of their OML. All agreements, licences and leases with the NNPC Limited are unclassified and must be published on the Commission's website within one year.

The existing Petroleum Profits Tax has been substituted with the Hydrocarbon Tax, which relates to crude oil, crystallization and natural gas liquids product of associated gas. However, it not applicable to associated and non-associated natural gas or frontier acreage. The newly enacted Petroleum Industry Act can offer a further comprehensive legal regime for energy evolution in the industry even though the passage of the Act was procrastinated, if stringently enforced by the regulatory authorities with strong political will, sincere commitment and absence of political blockade or vendetta, the Act will transform the

sector. The host community issues, uncertainties regarding price regulation, penalty regime and fiscal provisions, the Host Community Trust Funds fixed at 3% while the frontier exploration fund is fixed at 30% require further overhauling to guarantee total revolution of the sector [36].

The Act will radically change our petroleum industry as it consolidates 16 different petroleum legislations into a single legal regime regulating the petroleum industry. The Act also seeks to deregulate the downstream petroleum sector to ensure market forces determine the prices of petroleum products rather than what we presently have, where the Minister determines the price of petroleum products [37]. However, the Act fails to emphasize on energy transition, its impact and its outlook in the industry. The Act is anticipated to enhance certainty, draw more finance opportunities in the industry, and increase earnings for the government if stringently implemented. However, certain grey areas which require further modifications have been laid before the National Assembly by the President Muhammadu Buhari requesting the amendment to the managerial configuration of the Nigerian Upstream Petroleum Regulatory Commission, the Nigerian Midstream and Downstream Petroleum Regulatory Authority to increase the membership of the Non-Executive Board Members from (2) two to (6) six one representative from every geopolitical zone to give a sense of participation in the decision-making process of the oil industry section 34 (2) (b) of the Act.

Section 11 (2) (b) two (2) Non-Executive Commissioners to be substituted with six (6) Non-Executive Members, one from each geopolitical zone. Section 11 (2) (f) one delegate of the Ministry of Petroleum not lower than the rank of Director to be obliterated. Section 11 (2) (g) one delegate of the Ministry of Finance not lower than the rank of Director to be expunged. Section 34 (2) (f) (g) one delegate of the Ministry of Finance and Petroleum not lower than the position of Director to be expunged. Since the Ministries of Petroleum and Finance before now have a Statutory role of either administration or inter-governmental dealings, which can be implemented without being part of the Board.

Section 11 (3) and section 34 (3) on the appointment to the Commission's Board shall be carried out by the President and dependent on the approval of the Senate. The appointment of the Executive Directors is to be amended to subject the confirmations of the Board to the Senate. The appointee should be a civil servant and not a political appointee to effectively manage these regulatory institutions via stringent public service rules for employees. This is to enhance growth and efficiency in the industry.

Emergency Economic Stimulus Bill 2020 aims to offer relief to companies on tax obligations for companies, deferment of import duties to certain commodities, restructuring of housing mortgage duties outstanding to the Federal Mortgage Bank of Nigeria for a scheduled tenure, employments security and mitigation of fiscal liability for Nigerians to combat the fiscal shocks caused by COVID-19 pandemic. There is a need for the amendment of the Bill to include oil and gas companies, specifically with the reliefs package.

The Finance Act 2020 was assented to by President Muhammadu Buhari with some modifications to section 39 of the Companies Income Tax Act on the stimuli accessible to financiers in the downstream gas utilisation processes by expunging the provisions of the Act that necessitates firms to acquire Ministerial sanction in advance before giving any loans regarding gas process as a tax-deductible expenditure. This provision will no longer apply; gas companies are now allowing other firms in the other segments of the economy to operate without such authorisation from the Minister. The explanation concerning the conduct of calculated investment grants has now been specified. Firms cannot replicate capital grants entitlement spurs under the CITA and the Industrial Development (Income Tax Relief) Act, for instance, the provisions governing the innovator category enticement. This modification is designed to circumvent dual entitlement of tax motivations by gas companies.

Section 38 of the Nigeria Value Added Tax (VAT) Act has increased the inventory of substances excused from Value Added Tax (VAT) as stated in the regulation dated 24 December 2018, which are Automotive Gas Oil, Aviation Turbine Kerosene, Household Kerosene, national produced Liquefied Petroleum, Premium Motor Spirit. The Act has

efficiently solved the argument on the pertinence of VAT on the supply of enumerated fossil fuel commodities [38].

Taking into consideration, the various guidelines and additional legal procedures start-up by the government to ameliorate the adverse effects of the COVID-19 disease on the country's economies, such as the extension of tenure of loans or financial resources, rescheduling of the timetable for reimbursement of interest and reimbursement of principal, appraisal, relinquishment or modification of agreements, expectations and percentages; in addition to a relinquishment of charges.

The Ministry of Petroleum and Energy Resources offers a crucial management role for the oil sector, with numerous other organizations performing diverse supervisory capabilities.

The Nigerian National Petroleum Corporation Limited is the state oil firm, it oversees and promotes the commercial interest of the Federal Government being a commercial legal entity under the Petroleum Industry Act 2021 that is subject to tax liabilities, payment of dividends to its shareholders with several subsidiaries acting in different capacities as the regulatory authorities and positioned throughout the administration of the petroleum sector.

The Department of Petroleum Resources was replaced with the Nigerian Midstream and Downstream Petroleum Regulatory Authority and the Nigerian Upstream Petroleum Regulatory Commission are the regulatory bodies in charge of monitoring and regulating oil and gas operations in Nigeria. The Nigerian Midstream and Downstream Petroleum Regulatory Authority is the overseer of the midstream and downstream petroleum activities while the Nigerian Upstream Petroleum Regulatory Commission is responsible for the upstream sector.

Before the enactment of the Petroleum Industry Act, 2021 the Department of Gas Resources (DGR) a Ministry of Petroleum Resources Department established under the 2008 National Gas Supply and Pricing Regulation to allocate domestic gas supply obligations and regulate gas operations. However, the obligation is now being executed by the Nigerian Midstream and Downstream Petroleum Regulatory Authority.

The National Oil Spill Detection and Response Agency (NOSDRA) ensures alertness, uncovering and responses to oil pollution in Nigeria's oil companies in compliance with the relevant legislation [39].

The Nigerian Content Development Monitoring Board (NCDMB) is responsible for the implementation of the Nigerian Oil and Gas Industry Content Development Act 2010.

Nigeria-Saotome Principe Joint Development Authority (JDA) is a treaty between both countries to manage exploration activities in the region of maritime overlap between the countries' National Environmental Standards and Regulations Enforcement Agency.

The concept of preparing the hybrid model designed by the authors is to combat the impacts of crude oil price shock on Nigeria's economy, to promote economic diversification and to focus less on the petroleum sector [40]. To promote energy diversification by integrating renewable energy and other low carbon energy sources into the national energy mix to promote technology development and to encourage active engagement of the citizens (especially youth) in the development of low carbon energy technologies. Review of the current legal frameworks on energy security, contracts and regulatory institutions in the oil and gas sector to ensure that they are compliant with the global low carbon energy transition objectives.

The implementation of the hybrid model (Figure 1) will consequently enhance the positive and significant contribution of oil production and prices in economic advancement and attainment of real growth and progress as evidenced in the empirical results. The diversification approach to energy generation will further provide a veritable mechanism for controlling the adverse effects of the negative external shocks on Nigeria's economy while preferring a better policy and legal options for improvement in the convergent of the system in its adjustment process to the long-run equilibrium.

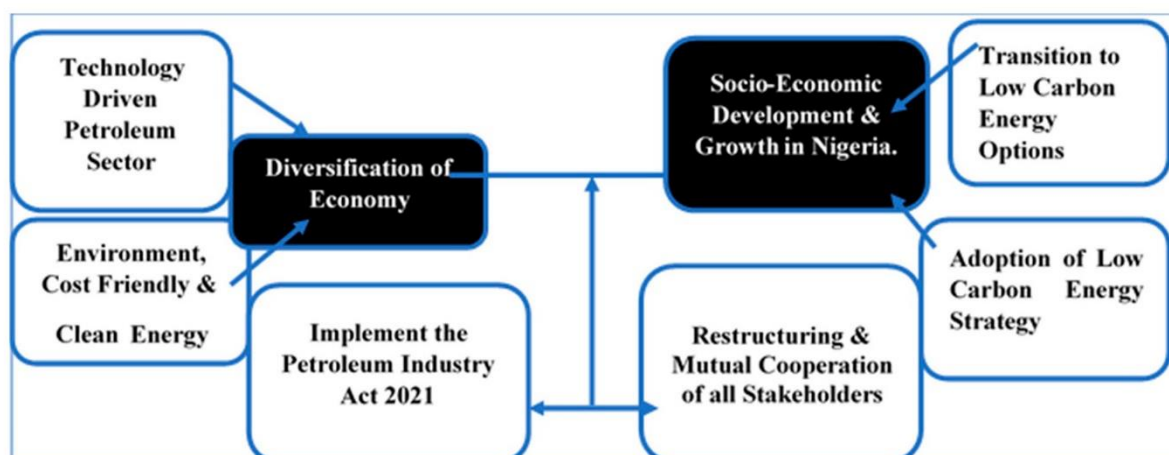


Figure 1. Hybrid Model Designed to Combat the Impacts of Crude Oil Price Shock on Nigeria's Economy. Source: The Figure was created by the authors.

5. Legal and Policy Response to Decline in Crude Oil Price Regime in Nigeria

The common law tenet of frustration provides that an agreement can be annulled by the process of law, where a variation in conditions makes it impracticable to execute such agreement, as conceptualised and anticipated, or where such impinging incidence occasions a fundamental variation such as the duties initially consented to by the parties. Distinct from *force majeure*, frustration does not automatically demand to be specified in the agreement [41]. The courts utilise very stringent tests in interpreting and ascertaining whether or not an agreement can be considered thwarted and incapable of being executed, as anticipated. It is satisfactory to prove that it has to turn out to be challenging, costly or not viable to execute the agreement or that it will be difficult to perform it. A party relying on this defence must cautiously evaluate the circumstances in question before relying on the defence of frustration to avert the inadvertent corollaries such as damages due to a repudiatory infringement of the contract by the individual relying on the doctrine of frustration as a defence.

Interruption occurrences requirements authorised the facility agent to modify the procedure or management of the facility on the incidence of disruption or event such as substantial distraction of reimbursement schedules, telecommunications schemes or fiscal markets, which are obligatory to activate payments to be made in correlation with the capacity, interference with the technical or systems-connected expenditures thwarting the execution of its reimbursement responsibilities with other parties.

The Federal Inland Revenue Service (FIRS) formulates measures to combat the consequences of the COVID-19 disease on taxpayers, including oil companies' relinquishment of overdue earnings sanctions for oil firms or taxpayers who pay their tax obligations ahead of time but present their tax revenues late [42]. Proof of tax reimbursement can be sent to the Federal Inland Revenue Service (FIRS) electronic mail address or tendered to the tax office. Enlargement of time for payment of Value Added Tax from the 21st day to the last day of the month, resulting from the month of payment. Taxpayers experiencing an obstacle in obtaining foreign exchange to pay tax obligations on their FOREX-denominated transactions can pay the Naira estimated, centred on the predominant Shareholders and Exporters FOREX window amount on the day of reimbursement.

The Central Bank of Nigeria's policy to combat the outbreak of COVID-19 is to boost the economy. Measures such as an enlargement of a one-year moratorium on main repayments, reduction of interest rate on all Central Bank of Nigeria intervention loans from 9 to 5%, establishment of NGN50 billion loan aimed to give credit facilities for families small or average-sized oil companies that COVID-19 has hit.

Functional refineries will gain access to domestic extractive resources and decrease the import of petroleum products, which requires scarce foreign currency reserves [43].

Absence of an effective legal regime to enhance the institutional capacities to implement transparency law and policies on managing oil revenues to combat corruption, mismanagement and resource curse. Effective transparency law is an integral part of petroleum revenues management, underpinning social, economic and environmental development with stringent institutions and good governance [44].

6. Hurdles Militating against Efficiency in Crude Oil Production in Nigeria's Oil Industry

The insecurity in the country due to consistent pipeline vandalisation and other critical oil and gas infrastructure with insignificant recorded arrest and prosecution. Between 2019 and 2020, Nigeria recorded over a thousand incidents of pipeline vandalisation, kidnapping, ransom payments and other practices of insecurity. Insecurity has harmfully obstructed the efficient production and exploration of crude oil in the industry-leading to a deterioration in investments, excessive costs or budget on security and a decline in the Federal Government's revenues from crude oil.

The negative global influences of the COVID-19 disease on the petroleum sector have influenced the demands for crude oil in the international oil market, thereby occasioning a deterioration in crude oil value, which damagingly touched the economies of most developing oil-producing countries due to the dependence on crude oil as the major sources of government incomes. According to Statista, this has occasioned a decline in crude oil output from 2.07 thousand barrels of oil per day (mbpd) in the first quarter (Q1) year 2020 to 1.7 mbpd first quarter (Q1) of the year 2021.

Policy uncertainty in Nigeria's petroleum sector has discouraged existing and prospective investors and investment opportunities, thereby occasioning a forfeiture of earnings to the Federal Government owing to weak enforcement of the Petroleum Industry Act 2021, thereby creating an indeterminate business atmosphere [45]. The Petroleum Industry Act fails to address uncertainties regarding oil price guidelines, sanctions and ambiguous fiscal provisions, among others.

Poor oil and gas facilities are another challenges militating against the industry efficiency. The infrastructure deficit has affected crude oil exploration and production. However, the problem is significantly pronounced in the midstream and downstream petroleum sectors.

7. Methodology and Data Description

In order to establish the impact of crude oil price shocks on the Nigerian economy while accounting for the presence of COVID-19 pandemic, this study models real economic growth. Here, real gross domestic product is expressed as a function of crude oil production, price and COVID-19 captured as a dummy variable. the equation in its implicit form is expressed as:

$$RGDP = f(OPRD, COP, COV19DUM) \quad (1)$$

Equation (1) is its explicit form is represented as,

$$RGDP = \alpha_0 + \beta_1 OPRD + \beta_2 COP + \beta_3 COV19DUM + \mu_t \quad (2)$$

Equation (2) is transformed using logarithm approach as shown in Equation (3).

$$LRGDP = \alpha_0 + \beta_1 LOPRD + \beta_2 LCOP + \beta_3 COV19DUM + \mu_t \quad (3)$$

where LRGDP, real gross domestic product measured at constant basic prices; LOPRD, crude oil production measured in barrels of oil per day (mbpd); COP, crude oil price in US dollars (USD); α_0 is the constant term, β_1 , β_2 and β_3 are the slope coefficients in the model.

Sequel to Equation (3), real gross domestic product is expressed as function of crude oil production (OPRD), oil prices (COP) while taking into cognizance the era of COVID-19 pandemic (COV19DUM). All the variables were expressed as monthly time series obtained from the central bank of Nigeria statistical data for the period 2021.

In the first instance, the descriptive statistics (Table 1) of the variables were employed to general characteristics of the variables in terms of measures of central tendency, dispersion and normality. Afterwards, the unit root test was carried out to determine the level of stationarity of the individual series. This test was conducted using Augmented dickey fuller (ADF) test. The test was conducted at level and first difference to ascertain the order of integration of the variables. The data series were all integrated in order 1 (Table 2) at 1% significance level. Thus, the Johansen cointegration procedure (Table 3) was further applied in determining the existence of a long-run relationship between economic growth and its predictor variables. The normalized cointegrating estimates was explored to examine the long-run effect of crude oil production, prices and COVID-19 pandemic on real growth (Table 4) with the existence of a significant cointegrating relationship, the study utilized the vector error correction (VEC) to model the short-run, long-run coefficients and the mechanism of the adjustment process in the short-run (Table 5). The dynamics of the VEC systems was simulated through the impulse response functions in examining the impact of the oil price shocks on the Nigerian economy (Table 6). The analysis is executed with E-view software statistical package.

Table 1. Descriptive statistics.

	LRGDP	LOPRD	LCOP
Mean	4.031298	0.719073	4.278368
Median	4.095742	0.746688	4.286673
Maximum	4.534477	1.057790	4.932602
Minimum	3.532915	0.182322	2.658860
Std. Dev.	0.236781	0.159102	0.363588
Skewness	−0.683301	−1.356244	−0.576791
Kurtosis	2.608928	5.008273	4.006096
Jarque-Bera	16.16433	91.12603	18.74386
Probability	0.000309	0.000000	0.000085
Sum	774.0092	138.0621	821.4466
SumSq.Dev.	10.70848	4.834894	25.24954
Observations	192	192	192

Source; researchers' computation with E-view, 2022.

Table 2. ADF Unit Root Trest.

Variable	ADF @Levels (1% Significance Level)			ADF@ First Difference (1% Significance Level)		
S/N	ADF Statistic	ADF Critical value	Remark	ADF Statistic	ADF Critical Value	Remark
LRGDP	−1.219928	−3.467418	NS	−3.622572	−3.467418	Stationary
LOPRD	−0.672520	−3.464827	NS	−18.19694	−3.464827	Stationary
LCOP	−3.167157	−3.464827	NS	−10.11860	−3.465014	Stationary

NS: Non-stationary. Source; researchers' computation with E-view, 2022.

The article investigated the necessity for tackling the impacts of the crude oil price shock on the country's economy with the legal and policy options using current literature. In addition, the article adopts a conceptual legal research method. It applies library-based doctrinal legal research techniques with primary and secondary sources of law such as judicial precedent and international conventions. It further utilises the potency of the existing legal framework, for instance, the Petroleum Industry Act 2021. This method in legal study is consistent with the regulation, and it is instantly accessible for confirmation. The additional rationalization for utilizing the technique was to authenticate the credibility of the results on the COVID-19 pandemic the impacts of petroleum price shock on Nigeria's economy with legal and policy options. The study proposed a hybrid strategy or model for cushioning the effects or impacts of crude oil price shock on Nigeria's economy.

Table 3. Cointegration Result.

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob. **
None *	0.379127	180.1280	47.85613	0.0000
At most 1 *	0.287320	90.52192	29.79707	0.0000
At most 2 *	0.132231	26.84210	15.49471	0.0007
At most 3	0.000947	0.178058	3.841466	0.6730
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
None *	0.379127	89.60605	27.58434	0.0000
At most 1 *	0.287320	63.67982	21.13162	0.0000
At most 2 *	0.132231	26.66404	14.26460	0.0004
At most 3	0.000947	0.178058	3.841466	0.6730

Source; researchers' computation with E-view, 2022. * Denotes the existence of at least 3 co integrating series in the oil price and economic growth model while ** Probability value of the ranked co integrated series at 1% level of significance.

Table 4. Normalized cointegrating coefficients (Standard error in parentheses).

1 Cointegrating Equation(s): Log Likelihood 1199.243			
LRGDP	LOPRD	LCOP	COV19DUM
1.000000	0.886680	0.156670	0.035058
Std. Error	(0.08623)	(0.04586)	(0.00988)
T-statistics	[10.28273]	[3.41626]	[3.54838]

Source; researchers' computation with E-view, 2022.

Table 5. Vector Error Correction Model.

CointEq1	LRGDP (−1)	LOPRD (−1)	LCOP (−1)	COV19DUM (−1)
−0.017698 (0.01127) [−1.57084]	1.000000	1.00000	0.156670 (0.04586) [3.41626]	0.035058 (0.00988) [3.54838]

Standard errors are in brackets while the T-statistics are in square parenthesis. Source; researchers' computation with E-view, 2022.

Table 6. Impulse Response.

Response of DLRGDP:				
Period	LRGDP	LOPRD	LCOP	COV19DUM
1	0.006651	0.000000	0.000000	0.000000
2	0.002532	−0.000733	−0.000419	0.000222
3	0.003034	−0.000254	−0.000130	0.000359
4	0.003880	−0.000785	−0.000243	0.000132
5	0.003257	−0.000398	−0.000322	0.000212
6	0.003380	−0.000482	−0.000197	0.000200
7	0.003495	−0.000516	−0.000216	0.000198
8	0.003384	−0.000495	−0.000265	0.000208
9	0.003419	−0.000498	−0.000236	0.000203
10	0.003430	−0.000504	−0.000232	0.000200

Source; researchers' computation with E-view, 2022.

Comprehensive restructuring of Nigeria's transparency legal regime on the oil and gas sector to guarantee global resilience against future socioeconomic shocks for sustainability [46]. Furthermore, there has been scarce research in assessing the strategies for cushioning the effects of the COVID-19 disease impacts on oil price shock on Nigeria's economy. Hence, the need to have a robust assessment of the strategies for cushioning the COVID-19 pandemic impacts on crude oil price shock on Nigeria's economy by utilising

policy documents to justify the need for this study. Furthermore, the article will be of enormous benefit by providing insight into the need to cushion the COVID-19 pandemic influences on petroleum price shock on the country's economy. The authors also appraised the quandaries and obtained extrapolations that established the findings of this study. The study contributes to the literature in this area by designing a hybrid model for combating the impacts of crude oil price shock on Nigeria's economy.

8. Results and Discussion

In the first step of the analysis, the descriptive statistics of the series were examined (Table 1). This shows the average monthly growth in economy, oil production and price at 4.03%, 0.719% and 4.28%, respectively, are all positive. The median (4.096, 0.747, 4.287), maximum (4.534, 0.719, 4.933) and minimum (3.533, scores of the variables shows crude oil price with the highest growth. The standard deviation (0.237, 0.159, 0.364) suggest the greatest variability among the series with crude oil prices. The skewness portrays the observations were negatively skewed to the left and the right tails are longer. The Kurtosis scores greater than the critical value of 3.00 reflects a leptokurtotic and a steeper distribution while the Jacque Bera rejects the normality assumption. This implies that the series exhibit a fluctuating structure with possible heteroscedasticity. This further re-affirms the rationale for the oil price shock investigation [47].

In the next stage of the analysis, the unit root test of the time series was conducted using the augmented dickey fuller and the result presented in Table 2. The series were seen to contain a unit root at their levels at 1% level of significance. At this instance, null hypothesis of a unit root present in the series cannot be rejected. Hence, the study proceeded to apply a second differencing for all the variables with the result indicating a stationary series at this stage. The ADF test statistics for RGDP (-3.622 ; p -value < 0.01); OPRD (-1.197 ; p -value < 0.01) and COP (-10.119 ; p -value < 0.01) at second differencing with fixed effect reveals that all the series have no unit root. This obtained by comparing the value of the ADF statistic with its critical value. Greater ADF statistic denotes the attainment of stationary trend.

Consequently, the Johansen cointegration test (Table 3) was employed to determine the existence a long-run relationship. The cointegration test is based on trend assumption of a linear deterministic trend involving the unrestricted cointegration rank test of trace and maximum Eigenvalue. The Trace and maximum Eigenvalue statistics indicates 3 cointegrating equation at 5% level. This implies the rejection of the null hypothesis of no cointegrating variables at 5% significance level. It is therefore, established that there is the existence of a long-run relationship between COVID-19 pandemic, crude oil production, crude oil prices and economic growth in Nigeria within the scope of the current study [48].

The normalized cointegrating equation (Table 4) is analysed in a bid to examine the nature of the long-run estimates of the model in explaining economic growth in Nigeria. In this process the signs coefficients are interpreted in reverse sign as it is applicable in the mathematical representation of the equation.

As shown in Table 4, crude oil product significantly accounted for 0.887% of economic growth at 1% level of significant. This implies that a percent increase in oil product increase the country's real gross domestic product by a corresponding 0.887% holding other variables at a constant. Hence, crude oil production plays a significant role in Nigeria economy and could be seen as a significant determinant economic growth. In-depth analysis of crude oil prices indicates a significant positive effect on real economic growth. A percent increase in crude oil prices increases real growth by 0.157%. The result shows there is a direct but less than proportionate relationship between real economic growth and crude oil prices in Nigeria.

Notably, the estimated coefficient from COVID-19 dummy variable captured the positive and significant contribution of the pandemic to economic growth by 0.035. This could be explained by the intensive technological exploration and E-business transactions made possible with the effective deployment of internet for various online economic

transactions that enhanced real growth by some high powered technologically inclined business and organizations [49].

In order to ascertain the dynamic nature of the growth model, the vector error correction (VEC) model was further applied (Table 4). This provides us with the long-run and short-run coefficients inclusive of the model adjustment speed. In this study, additional restriction was applied on the beta coefficient of the long-run cointegrating equation for oil production. This becomes pertinent in order to satisfy the three basic requirements for the parsimony of the error term in VEC analysis. These includes the correctly signed coefficient, within the magnitude of 1 and also within significance level. An analysis the error correction term in Table 5 indicates that the result satisfied these conditions. The long run coefficient previous year's crude oil prices have a less proportionate effect on economic growth. The degree of elasticity of real economic growth to the variations in past year oil prices is inelastic at 0.14% but significant. The cumulative effect of COVID19 pandemic portrays a less proportionate and significant effect on real economic growth at 0.035%.

The evidence from the error correction term shows that 0.02% of the errors associated with external shocks are corrected per time. Therefore, it suggests that 2% of the error associated with last period owing to 100% change in the system. This implies that the real economic growth model has the potential to converge to equilibrium after experiencing an external shock.

The response of real economic growth to its own one standard innovation and one standard innovation from crude oil production, crude oil price and COVID-19 pandemic is presented in Table 6. It is shown that oil production and price exhibit a negative shock on real economic growth throughout the horizon while real GDP own one standard innovation and COVID-19 pandemic portray a positive shock effect. The real GDP own standard innovation maintained a positive shock but fluctuated between 0.002532 in the second horizon to 0.006651 at the first horizon. Crude oil production shows a one standard negative shock between -0.000254 in the third horizon to -0.000785 in the fourth horizon. Consequently, crude oil price exerts one standard innovation with the lowest negative shock (-0.000130) seen in the third horizon and -0.000419 in the second horizon. COVID-19 pandemic shows a positive shock impact in the short-run from 0.000359 in third horizon to 0.000198 in the 7th horizon. Hence, it is evident from this study that while oil production and pricing were characterized with a negative shock on real GDP while COVID-19 exerts a positive shock impact. Notably the shocks were characterized by fluctuating structure.

The joint graph of the response of Real GDP to its own standard innovation and the one standard innovations from its predictors are presented in Figure 2. The evidence from the graph it's the highest traceable to past real GDP innovations. Deeper analysis of the graph provides further conformation to COVID-19 positive shock innovation as shown with its trend above the baseline. Oil production and price with negative shocks is seen below the baseline trend. The positive and negative shock indicates a greater dimension of fluctuating structure within the first half of horizon which gradually dwindles with time along the second half of the horizon. This therefore, implies that the shocks are not sustainable in the short-run especially the negative shock effect [50].

Response to Cholesky One S.D. (d.f. adjusted) Innovations

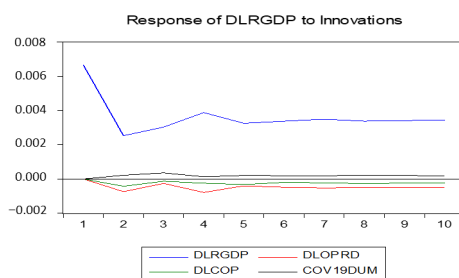


Figure 2. Response of RGDP to its own one S.D innovation, LOPRD, LCOP and COVID-19 one S.D. innovation.

9. Conclusions, Recommendations and Policy Implications

The Nigeria's escalating reliance on importations of refined petroleum products upsurges the insecurities concerning the accessibility of refined petroleum products at reasonable charges. Nigeria needs stringent transparent and best management practice laws to manage its petroleum sector's revenues for sustainability.

Permanent regulation of Premium Motor Spirit (PMS) pricing is not justifiable, predominantly regarding international influences on the value of crude oil and its downstream petroleum sector influence on Premium Motor Spirit (PMS) value or estimating in the domestic oil market has contributed to the scarcity of the petroleum commodities, hoarding of products and other unethical practices in the industry.

The macroeconomic policy undertaken to subsidise oil consumption may mitigate the severity of petroleum price change's effect on the economy, but this will affect the revenue-based of the Federal Government. If the subsidy is removed, it will shield the economy from incessant crude oil price fluctuations. The subsidy funds should be reinvested in other sectors to boost productivity in the country's petroleum sector.

The ineffective legal regime and weak regulatory institutions require the legislatures to enact effective and stringent laws that will strengthen the institutions in conformity with the current reality and best practices. Judiciary is to interpret and punish offenders for corruption and for increasing the financial burdens of the government via stringent transparency laws.

Lack of transparency and jurisdictional challenges, and the ambiguous scope of the oil and gas regulatory agencies' powers and functions are problems.

The downstream petroleum sector has experienced numerous challenges over the years, with dawdling growth as the sector is under threat due to the contemporary deterioration in crude oil values and the impacts of the COVID-19 disease. Though the authority has introduced various economic policies and more actions to combat the impacts of the challenges, alternatively, the Federal Government should completely deregulate the downstream petroleum sector to contribute meaningfully to Nigeria's economic growth. Subsidy funds should be utilised judiciously on infrastructure deficits in the country.

The need for the government to look beyond oil as the low oil price is unavoidable considering the global transitioning to low carbon sources of energy due to the adverse effects of fossil-fuel on the environment such as climate change. The critical element is the need to overhaul economic policies and legal regimes on petroleum during oil price volatility to sustain economic growth.

Any slight increase in the crude oil price will lead to increase in economic growth; therefore, effective legal and strong institutional frameworks are key to prudent petroleum revenue management, which is the bedrock of transparency and accountability of oil revenues. Both national and international law should be used as a tool to combat corruption and mismanagement of petroleum revenues. Stringent implementation of transparency laws is *sine qua non* to reducing the impacts of oil price shock on Nigeria's economy.

Despite the appalling outlook, it has the potential to turn the COVID-19 pandemic into a blessing in disguise for Nigeria by building more refineries for resilient and sustainable future for the petroleum sector.

The study concludes that diversification is a good option to increase the domestic supply capacity to limit the direct effect of imported fuel on domestic economy performance. Subsidy, which has distorted the market, should be removed to balance all sectors of the economy. The cost of subsidising fuel should be invested in the real sector of the economy to promote refined petroleum products and exportation.

There is a need to diversify from oil and gas by encouraging a viable engineering industry, particularly in the automotive plants, cement, textile and clothing industries, mining and agricultural industries. There is a need for an inclusive domestic energy policy for the inclusive growth of the petroleum sector to satisfy energy security and sustainability. The country needs to focus on the substitute for fuels and non-conventional sources such as biodiesel and ethanol from non-edible oils such as *Jatropha* can be a substitute for diesel,

and ethanol can be utilised as fuel for environmentally friendly cars, and it will decrease over-reliance on the importation of refined petroleum products. Nigeria needs to focus on research and development of energy-efficient technologies through fiscal incentives such as a yearly apportionment of funds and income-tax reimbursements.

The new models of private-public partnership and greater inter-ministerial coordination should be explored through diversification of energy supply to improve energy security.

There is a necessity to tackle energy infrastructure challenges in the sector by setting up efficient and appropriate energy incentives and tax concessions to encourage private investment in the oil industry and effective price competition. Rational pricing of petroleum products will encourage private investors to act commercially and to earn reasonable investments returns. The fiscal burden associated with fuel subsidies due to corruption and distorted incentive structures that hamper the nation's economic growth and development.

There is a need to build more new refineries and to rehabilitate the existing four oil refineries in the country. Establishment of more condensate refineries with 200,000 barrels per day to cushion the impacts of the COVID-19 disease and crude oil price shock on Nigerians. Nigeria needs to begin to refine more oil than the country presently imports because the price of Nigeria's crude oil does not rise as much as the cost of refined products that are being purchased, this is because crude oil being a primary product, when Nigerian buys the refined oil for local use, the value would have increased. An energy policy that will promote the use of other sources of commercial energy should be adopted to stimulate economic growth and development.

The Federal Government should create a supporting milieu for the private investors, both transcontinental and national, by offering good roads, electricity, water, tax holidays for the first few years of operations and concessionary duties on the importation of refineries equipment. Government should facilitate and expedite the issuance of licences, exploration permits, visas, and residence and work permit for foreign investors.

The study does not provide all responses to the impacts of crude oil price shock on Nigeria's economy. The study contributed to knowledge by designing a hybrid model to combat the impacts of crude oil price shock on Nigeria's economy.

However, it has provided insight into combating the menace in Africa's oil and gas sector. The future research should focus on the influence of global deterioration of crude oil prices shocks and weak national security architecture on Africa's economy and to use quantitative analysis methodology to evaluate the suggested propositions to further supplements the current literature on the subject.

Limitations of the Study: The exclusive dependence on existing literature to investigate the study due to insecurity in Nigeria. Some secondary data sources create huge hurdles in condensing precise data due to inaccurate statistics or data on COVID-19 pandemic: The impacts of crude oil price shock on Nigeria's economy, legal and policy options. Conversely, this study judiciously utilizes pertinent literature and other dependable information sources. An additional hurdle impedes obtaining access to information, which influences the effectiveness of individual meetings of many oil firms due to the prevalence of COVID-19 and its protocol that mandated social distancing and avoidance of public gatherings in the absence of face shield or mask and due to the prevalence of insecurity in the country.

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