International Journal of Energy Economics and Policy

ISSN: 2146-4553

available at http: www.econjournals.com

International Journal of Energy Economics and Policy, 2022, 12(3), 57-65.

Evaluating Oil Price Movement and Revenue Generation in Nigeria during Covid-19 Pandemic: Experience from Pre and Post Era

Charles O. Manasseh[1], Nnenna G. Nwonye[1], Felicia C. Abada[2], Ogochukwu Okanya[3], Anuli R. Ogbuagu[4], Felicia U. Eze-Dike[5], Osmond N. Okonkwo[6], Otene Samson[7], Okechukwu J. Akamike[8], John O. Okoh[7], Peter Offu[9], Emmanuel I. Ajudua[10], Chuka U. Ifediora[11]*

[1]Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria, [2]Social Science Unit, School of General Studies, University of Nigeria, Nsukka, Nigeria, [3]Department of Banking and Finance, Institute of Management and Technology, Enugu, Enugu State, Nigeria, [4]Department of Economics and Development Studies, Alex Ekwueme Federal University Ndufu Alike Ikwo, Achoro-Ndiagu, Nigeria, [5]Department of English and Communication Art, Ignatius Ajuru University of Education, Rumuolumeni PH, Nigeria, [6]Department of Economic, Alvan Ikoku Federal College of Education, Owerri, Imo State, Nigeria, [7]Department of Economics, University of Delta, Agbor, Delta State, Nigeria, [8]Department of Economics, Imo State University, Owerri, Imo State, Nigeria, [9]Department of Political Science, Alex Ekwueme Federal University, Ndufu-Alike, Kwo, Abakaliki, Nigeria, [10]Department of Economics, National Open University of Nigeria, Lagos, Nigeria, [11]Department of Marketing, University of Nigeria, Enugu Campus, Nsukka, Nigeria. *Corresponding author: chuka.ifediora@unn.edu.ng

Received: 13 November 2021 **Accepted:** 01 April 2022 **DOI:** https://doi.org/10.32479/ijeep.12616

ABSTRACT

The study focusses on evaluating oil price movement and revenue generation in Nigeria with emphasis on the era of pre and post covid-19 pandemic. Measures such as crude oil price, domestic production, crude oil export and revenue, and revenue generation were assessed before, during and after covid-19 pandemic. The evidence shows that oil price and revenue generation were negatively affected during Covid-19 pandemic era due to restriction on the movement of people and economic activities. Hence, the study further revealed a drastic fall in crude oil price and export, as well as domestic production (MBD) especially during the first quarter of 2020. While crude oil price appreciated slightly from June, the export and domestic production plummeted with a corresponding decrease in revenue generation which dropped deeply from $47 billion USD in 2019 to $8 billion USD in 2020. Further evaluation revealed that after the introduction of some measures by the government authorities, the Nigerian economic start to recover, which results to a slight improvement in crude oil price in December 2020, but later fell to 40.28 MBD in March 2021. Thus, other indicators such as domestic production and crude oil export has no sign of recovery between this period except for revenue generation which increases by $4 billion USD. Moreso, to control the aftermath of pandemic, we suggest for cohesive policy measures such as educating people on the benefits of Covid-19 vaccines and proper enforcement on the use of facemask. In turn, this will reduce the spread and promote economic activities in Nigeria. In addition, policies that could regulate oil price movement should be initiated. Consequently, it may likely encourage increase in revenue generation in Nigeria.

Keywords: Oil Price Movement, Revenue Generation, Covid-19 Pandemic
JEL Classifications: Q49, H27, I19

1. INTRODUCTION

Energy plays an essential role in the development of nations globally and it's a major sources of government revenue and as such it has a direct effect in economic growth of countries especially the developing nations. Based on its high demand, the oil markets are often dependent on market forces of demand and supply which is most time determined by global price index.

According to Hamilton (1983) fluctuation in oil prices have a direct influence in macroeconomic fluctuations, which have a ripple impact on general well-being of the economic indexes, it is perceived in many ways as fall in economic growth rate, high rate of unemployment, food commodities volatility, and difficulty in economic welfare (Hamilton, 1983). The epidemic of Covid-19 which originated in December 2019 from Wuhan in China blowout to over 200 countries across the globe has frighten emotion which have left the world in panic. Following the announcement of outbreak of Covid-19 and its effect on economic activities globally, there was a significant fall in the global GDP even beyond the forecasts by a study on energy and economic growth report (2020). Thus, many economies were affected especially the third world countries like Nigeria. Being a mono-economy, Nigeria experiences a stand still economic activities due to the collapse of crude oil price which fall from US$58/Barrel in February 2020 to US$32.29/Barrel March 2020 and even plummeted further to US$14/Barrel in April 2020 (Central Bank of Nigeria, 2020). In like manner, energy and economic growth report (EEG, 2020) further forecasted that biggest oil exporter in the region will expect a major decline in economic growth by –3.4% due to large drop in oil prices. Hence, the oil price fragility and the continued financial breakdown facing the globe could be of negative impact the rate of debt and revenue generation. As such, the proportion of the world's poor is expected to increase from 15% to 30% by 2030. In order to checkmate the outbreak of Covid-19 and its consequences, the Nigerian government adopted stringent measures such as total lockdown and closure of borders aimed at restricting international trade among others, further deepen the economy thereby leaving people in a state of confusion. As the Nigerian economy began to recess gradually, the productivity of other economies in Africa that largely depend in the Nigerian market (largest in Africa) drastically fall along with their revenue generation.

Considering the economic trend during the Covid-19 era and the performance of the Nigeria economy, EEG (2020) projected those countries in sub-Saharan Africa that are dependent on crude oil proceeds will be among the hardest hit, with average GDP decline of -2.8% in 2020. According to the EEG (2020) report, importation of basic necessity and of trade and commerce sectors could be devastating within this period. Building on this and other unpleasant situation, the Nigerian government pursued fiscal decisions from emergency loans with the purpose of improving the welfare of the people, though, many questioned the rationale behind such decision and its economic benefits given the fact that the objectives were defeated due to high level of corruption (Nwakoby et al., 2021). As such, some argued that the emergency loan may have been used to offset the huge gap in revenue generation due to incessant drop in the price of crude oil which fell from the predicted US$57 to US$30 (Nwakoby et al., 2021a; 2021b). Most likely, the drop in price of crude oil could cut revenue in half - that is from US$30 billion to US$15 billion. Amid, it has been argued that further reduction of around US$1 billion from Nigeria's share following OPEC's agreed production cuts and a new budget has been drawn up based on the reality of oil revenue reduction (EEG, 2020). Consequently, all sectors of Nigerian economy became weak, including the Petroleum Industry Bill (PIB). Hence, the responsibility of PIB to increase effectiveness and transparency of the sector, and bring operations in line with international standards is affected and this effect led to a delay in final investment decisions upstream projects, and subsequently resulted to lower production and lower oil revenue.

The downward oil price movements and its impact on policy decisions have affects fiscal and monetary plans, with its multiplier effects on production due to the effect on government spending. Consequently, resulting to a significant fall in household consumption, per-capita income, increase in the rate of poverty and hunger, reduced standard of living and economic prosperity. In light of the foregoing, this study evaluates oil price movement and revenue generation in Nigeria. The objective is to assess the state of crude oil price and revenue generation in Nigeria with emphasis on pre and post Covid-19 pandemic era. However, other sections of the paper are organized as follows. Section two discusses the review of related literature, while section three presents the research method and results obtained from stylized facts. Thus, section four discussed government efforts towards oil price stabilization and address the outbreak of Covid-19 pandemic. Finally, summary, policy implication and conclusion are presented in section five.

2. REVIEW OF RELATED LITERATURE

Crude oil is one of the bloodlines of both developed and developing nation because of its essential usage in everyday life across all industries and sectors of the economy, oil industries are the economic powerhouse. Oil is very essential because of its far-reaching impact in production of items and transportation system. Therefore, crude oil price means a lot for industrial development as such uncertainties and variations that alters global benchmark either by increasing the oil price or reducing it usually affect many sectors of the economy adversely either. So, variation or volatility in oil sector prices are most sensitive issues because of economy's heavy reliance on oil sector for revenue and growth. According to MCfeirlane (2021) oil price are detrimental to economic variables and it is closely watched by investors and economic policy managers globally. Changes in oil prices can send shock-waves throughout the global economy especially to oil producing and consuming countries and the market is highly dependent on global price index which is determine from supply and demand mechanism and it is highly subject to global fluctuation and such waves from economic fluctuation have significant impact on economic variables across sectors. Alekhina and Yoshino (2019) affirmed that amid several advantages of oil market to the global economy, oil price oscillation has a substantial impact on oil exporting and oil importing countries actual growth, consumer prices, inflation, interest rate and exchange rate. Alekhina and Yoshino (2019) further elucidated channels through which oil prices can affect the economy. They argued that oil price fluctuation affects the economy through fiscal/export channel. Through these channels general oil price fluctuation can affect oil importer's production cost and price level while exporters of oil are heavily affected by export revenue and government budget. In like manner, the transmission mechanism of oil price changes may lead to an increase of oil prices which impact positively on the oil exporting country inform of foreign exchange inflow, and appreciation in

exchange rate causes a weakening in the prices importation. Hence, resulting to low inflation rate and interest rate through monetary policy implementation. On the other hand, since export of oil are highly taxed, government generate surplus revenue from export as fiscal surplus and government spending increases and this have a positive ripple effect on productivity and economic growth.

Many studies have tried to highlight on the importance of this transmission and connectedness of the oil prices and different sectors of the economy; Adeleke et al. (2019) suggest that exchange rate is the mostly affected by oil shocks as exchange rate is the most transmission channel via which oil price shocks affects manufacturing output in Nigeria. Alekhina and Yoshino (2018) investigates the association between macro-economic variables of oil exporting countries and global oil prices using vector autoregressive model, they suggest that oil price variations have significant impact on non-OPEC oil exporting countries' interest rate, exchange rate, economic growth and consumer price index. Also, Zaghum et al. (2021) using Granger Causality tests and the static and dynamic connectedness spill over index methodology, examined the connectedness between oil shocks and agricultural commodities with data set of 2002 to 2020 with interest of examining the three global crises: Financial crisis and the European Sovereign debt crisis and Covid-19 pandemic crisis. The result indicates that shocks in oil prices are granger caused mainly by price changes of grains, live cattle's and wheat, also livestock is the largest. Sequel to Zaghum et al. (2021) study, it is very clear that transmission from global crises alters the global oil prices and affect negatively on macroeconomic variables. In as much as crisis violates the global indices in the downstream market, the ripple resultant fluctuations of oil prices could be dependent on other factors too, Malliaris and Bhar (2011) wrote on oil price and impact of the financial crisis 2007–2009 and the study stressed on US dollar and EU appreciation in addition to increased gold prices as the determent factors during the period. Li (2021) affirmed that the 2008 financial crisis impacted negatively upon the oil and gas sectors while Ural (2016) examined the impact of the financial crisis on crude oil price unpredictability, the study believed that oil market is characterized by high volatility. Kyohun et al. (2020) focused on how the global financial crisis affected the crude oil market and the result affirmed that the crisis negatively impacted on efficiency of the market and altered the long-term equilibrium.

Syed and Rania (2021) using Symmetric GARCH (1,1) and Asymmetric GJR-GARCH (1,1) model tried to compare Covid-19crisis, with the SARS epidemic of 2002 and the crisis of 2008, the result specifies that the impact Covid-19 crisis on oil prices is more uncertain and pessimistic compared to global financial crisis and SARS. Hou et al. (2016) employed VAR with sign restriction for two countries dynamics stochastic general equilibrium (DSGE) model which allow for contemporaneous interaction between Canadian and U.S variable. The study focused on the macroeconomic effect of oil price shock transmission on oil exporting country (Canada). The result reveal oil shocks have a stimulating impact on Canadian's aggregate demand and terms of trade, which reduces real wages, and also appreciate Canadian dollar. The counterfactual analysis showed that U.S interest rate have no impact on the Canadian output and interest rate. The crux of this study is to investigate the effect of oil price oscillation on crude oil revenue in Nigeria during Covid-19, strands of literature have tried to empirically study the impact of oil market price fluctuation on macroeconomic variables prior and during the crisis: Mukhtarov et al. (2021) explores the impact of oil price shocks on national income on Azerbaijan from 1992 to 2019 using structural vector autoregressive (SVAR) method, the result showed that increase in oil price shocks affects gross domestic product per capita and total trade turnover positively and exchange rate negatively. In Nigeria, Babalola et al. (2018) checked the effect of crude oil price on government revenue from 1983 to 2016, using Autoregressive model, they examined the short-run and long-run outcome of crude oil price alterations on revenue and found that government revenue was negatively impacted by world price in the first and second period. Revenue generation is part of the fiscal responsibility of the government, in Nigeria.

Aremo et al. (2012) employed structural vector auto regression method covering 1980 to 2009, examined the impact of oil price shocks on fiscal policy management. The result affirmed that oil price has significant impact on the fiscal policy variables and also oil price shocks affect economic growth first and fiscal expenditure. In, Malaysia, Hussain and Nora (2013) using Generalized Impulse Response function and variance decomposition under VAR explored the symmetric impact of oil price shock on the Malaysian economy and found positive and direct impact of symmetric oil shock on oil revenue and government expenditure. Yoopi (2016) found that oil price correlated with government revenue and export value and a decline in oil price does not cause decline in economic productivity in Indonesia. Globally, oil prices depend on the global oil price benchmark, this makes highly responsive to global crises: Algamdi et al. (2021) using autoregressive distributed lag model examined the impact of Covid-19 pandemic deaths cases on oil price in Saudi Arabia with a set of daily data from 22nd January 2020 to 14th June 2020 and found that the cases of death and the resultant ratio has a significant negative effect on oil prices. In transmission channel, the overall impact of oil prices is first received as a fiscal surplus or fiscal deficit, this also impacts on the whole macro economy's variables.

Numerous studies have tried to scrutinize the result of oil price shocks on the macro variables: Manasseh et al. (2019) using multi regression techniques studied the impact of oil revenue on the well-being of the Nigerian and they concluded that oil price fluctuation have no impact on well-being. They suggest that crude oil revenue should be save during the time of boom and control and management of excess crude oil account should be delegated to the central bank of Nigeria. Again, Manasseh et al. (2019) emphasized on the impact of oil price oscillation and dynamics of exchange rate on economic performance using multi regression analysis and generalized autoregressive conditional heteroscedastic (EGARCH) model from 1970 to 2013. The result revealed the rate of real exchange exhibit volatility of about 16% and 10% increase in oil price led to 19% increase in real exchange rate in the long-run, there is no sign of fluctuation in foreign exchange rate market during the period rather there exist a relationship between oil price, exchange rate dynamic and economic performance. Also, Adeleke et al. (2019) explored the relationship between crude oil price shocks and

macroeconomic performance in Africa's oil producing countries from 1980 to 2016 with panel structural vector-regressive model, and Hamiton index (1996), the study excluded Algeria, Nigeria, Egypt, Angola, Gabon, Equatorial Guinea, and Congo Republic because of data constraint. The result indicated that output reacts to sharp variations (increases and decreases) in oil price differs and also observed that structural inflation occurs as a result of sharp decline in prices of oil. Adeniran et al. (2014) supported the view that real exchange rate fluctuation has a positive significant impact economic growth while Akpan and Atan (2012), using quarterly data series for the period 1986 to 2010, suggested no evidence of strong direct relationship between changes in exchange rate and output growth in Nigeria.

Similarly, Akhmedov (2019) using Vector Autoregression model checked the impact of oil price shocks on selected Kazakhstan's macroeconomic indicators and found a positive impact of oil price shock on macroeconomic variables, Bulimu (2019) focused on oil price shocks impact on tax revenue and government expenditure in Kenya using data from 1980 to 2018, the VARM result indicates that oil price shocks has a negative effect on tax revenue, recurrent and capital expenditure for the period under review. Hem and Kamal (2015) using Structural VAR model examine examined the impact of oil shocks on output, inflation, and the real exchange rate from selected ASEAN countries (Thailand, Malaysia, Singapore, Philippines and Indonesia), revealed that there is cointegration, while impulse response function result indicates that in the wrong run, oil price instability have no impact on the ASEAN countries and price shocks does not explain a significant variation in any of the variables. Supported by the following studies; Adeniran et al. (2014), Akpan and Atan (2012), Ogundpe et al. (2014). Does oil price shocks affect government expenditure, Oriakhi and Osaze (2010) using Nigerian data from 1980 to 2009 conducted a VAR estimate, and the result indicates that oil price shocks have a positive and significant impact on government expenditure. Oluwatoyin and Adegboye (2014) applied granger causality test to check the impact of oil price shock and exchange rate instability on real GDP, they concludes that shock from price variation affects economic growth in Nigeria similarly Englama et al. (2010) explored the relationship between oil price and exchange rate volatility using data from 1999 to 2009, the co-integration test and vector error correction model revealed oil price fluctuation increases the volatility of exchange rate in short and long run.

Besides, Hakan et al. (2010) analyzed the effect of oil price shock on economic growth of selected MENA countries using a restricted vector autoregressive model where world oil price is imposed as an identifying restriction, the estimate reveals a significant and positive effect of oil price shock om the output of Syria, Qatar, Oman, United Arab Emirates, Algeria, Iran Libya and Kuwait, but does not have significant effect on Bahrain, Egypt, Jordan, Tunisia, Djibouti, Morrocco, and Israel. In Venezuela, Mendoza and Vera (2010), agreed to a positive impact of oil price shocks on economic growth using a generalized autoregressive conditional heteroscedastic (GARCH) technique, likewise, El Anshasy (2009) analysed the influence generalized moment (GMM) model to data set of 1970–2004 for 15 oil exporting countries to test the impact of oil price shocks on economic growth, the result indicates positive and significant effect of oil price on economic growth. Also, the following studies agreed on positive and significant impact of oil price shocks on macroeconomic variables Farzanegan and Markwurdt (2009), Jelilov et al. (2020), Rebecca and Marcelo (2006), Kim et al. (2014), Musa (2015), Gachara (2015). Another set of literature concentrated the relationship between Covid-19 and macro variables and such studies includes Nwakoby et al. (2021) utilized a data set of 2015–2021 to test the impact of Covid-19 on house hold consumption expenditure during pre and post Covid-19 crisis, the result indicates that Covid-19 crisis increased the rate of poverty headcounts, diminishes the level of happiness and increases hunger rate thereby reducing the overall well-being of Nigeria's. In another study Nwakoby et al. (2021), reviewed impact of Covid-19 on balance of payment in Nigeria, balance of payment captures the behaviour of current and capital account during Covid-19 and post era. The study shows that Covid-19 affected balance of payment negatively, as well as international trade and current account diminishes, the rank of Nigerian international competitiveness was low, whereas foreign remittances fell drastically, beside import was on the high side, while export was very low. More so Covid-19 effect could be detrimental to the economic performances and its ripple effect also affect oil prices during and after the lock down, strands of literature focused on the impact of Covid-19 on oil prices and they include Salisu et al. (2020), Apergis and Apergis (2020), Al-Marri et al. (2020), Asharf (2020).

3. RESEARCH METHOD AND DISCUSSION OF STYLIZED FACTS

This study anchored on published stylized facts and graphical evidence to evaluates crude oil price movement and revenue generation in Nigeria with the quest to examine the state of crude of price movement and revenue generation during the pre and post Covid-19 era. Published data (stylized facts) used for the analysis such as crude oil price, Domestic Production and Crude Oil Export were sourced from OPEC Countries Statistics (2021) and Central Bank of Nigeria (2021), while Crude Oil Revenue is sourced from OPEC Countries Statistics (2021). In addition, in this section, the discussion is presented in parts. Part one discussed the state of oil price movement, domestic production and crude oil export during the pre and post Covid-19 pandemic era, while part two discussed crude oil revenue during the pre and post Covid-19 pandemic era in Nigeria.

3.1. Oil Price Movements during Pre and Post Covid-19 Era

The price of crude oil is exceptionally of great importance to Nigerian economy since all the sector of the economy depends on oil revenue to thrive. But it has been considered by many economists as highly volatile and consequently pose negative effect on Nigerian economy. The evolution of oil price variations dated back to the days of Hamilton (1983) who showed that oil price shocks have significant effect on macroeconomic activities in the United States. Ever since then, researchers have carried out empirical studies on oil price volatility on economic activity but there is no specific consensus on the empirical results.

Table 1 shows the outlay of crude oil price movement in pre and post Covid-19 era. Findings shows that Nigerian crude oil price on June 2019 was US$40.30/Barrel which appreciated to US$61.05/Barrel in August 2019. In September 2019, the price of crude oil further increased to US$65/Barrel and decreased to US$59/Barrel in October 2019 with a sharp increase of US$63/Barrel in November 2019. In December 2019, crude oil price increased to US$68.69/Barrel but towards the wake of Covid-19 pandemic in Nigeria in January 2020, the price of the crude oil lowered to US$66.68/Barrel. In the wake of the outbreak of Covid-19 pandemic in Nigeria in the month of February 2020, the price of crude oil greatly falls from initial US$66.68/Barrel of the previous month to US$32.29/Barrel. In the month of March, crude oil price crashed further to US$14.28/Barrel. Out of some government intervention policies and consideration of some sectors of the economy such as oil and gas sector, telecommunication sector, and health sector, movement of oil workers was approved within the country under strict adherence to guidelines of the Covid-19 regulations, the price of crude oil increased to US$27.90/Barrel in May 2020. In June 2020, the price appreciated to US$40.30/Barrel, and further appreciated to US$44.10/Barrel in July 2020 and US$45.06/Barrel in August 2020 respectively. Furthermore, the price of crude oil falls back to US$40.85/Barrel in September 2020 and even deeper to US$39.74/Barrel in October 2020. In November 2020, the price of crude oil appreciated to US$42.70/Barrel and US$50.82/Barrel in December 2020. In this Covid-19 era, government brought out policies that will limit the movement of people, goods and services so as to reduce the spread of Covid-19 in Nigeria which in turn hampered the growth and development of Nigerian economy.

Table 1: Crude oil price movement in pre and post Covid-19 Era in Nigeria

Year	Month	Crude Oil Price (US$/Barrel)	Domestic Production (MBD)	Crude Oil Export (MBD)
Pre Covid-19 Era				
2019	June	40.30	1.69	1.24
2019	August	61.05	2.09	1.64
2019	September	65.27	2.07	1.62
2019	October	59.10	2.05	1.6
2019	November	63.56	1.94	1.49
2019	December	68.56	1.96	1.51
2020	January	66.68	2.07	1.62
2020	February	58.45	2.07	1.62
Covid-19 Era				
2020	March	32.29	2.04	1.59
2020	April	14.28	2.04	1.59
2020	May	27.90	1.75	1.30
2020	June	40.30	1.69	1.24
2020	July	44.10	1.65	1.20
2020	August	45.06	1.65	1.20
2020	September	40.85	1.54	1.09
2020	October	39.74	1.61	1.16
2020	November	42.70	1.54	1.09
2020	December	50.82	1.34	1.01
Post Covid-19 Era				
2021	January	17.82	1.82	1.11
2021	February	28.79	1.98	1.50
2021	March	40.28	1.21	1.33

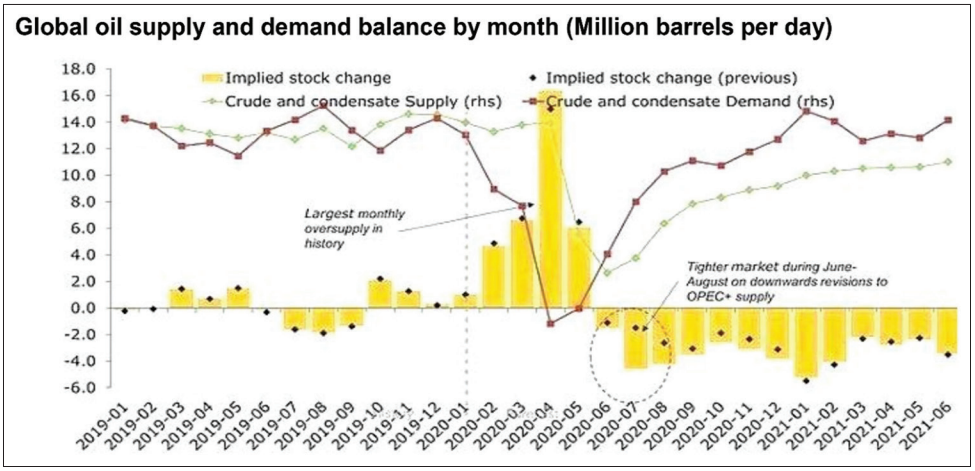
Source: Central Bank of Nigeria

On its own, crude oil price movements have negative economic implications especially for oil dependent countries even in the absence of outbreak of Covid-19 pandemic. It makes government investment decision indecisive, affect the efficiency of government budget, and slow down the government plan. Since Nigerian economy solely depend on oil revenue for sustainability, the unpredicted movement have a ripple effect on every other sector of the economy. In the presence of Covid-19 outbreak in the country, most of the economic activities were truncated, government ministries and all sectors of the economy embarked on total economic lockdown following the federal government guidelines. The lockdown in turn affected both the demand and oil production. The sharp fall in demand for crude oil with an increase in the supply further worsen the crude oil price and the revenue generation in the first quarter of 2020 (Figure 1) due to significant reduction in crude oil exports. Covid-19 incidence have multifaceted impact on the macroeconomic environment and this impact on crude oil sector and prices cannot be over-emphasized. The global lockdown restricted investment movement across countries and global trade and services was heavily affected. According to BBC News (2020), the United States oil prices recorded negative (–37.63USD) per barrel and this implied that producers paid buyers to take crude due to fear that storage capacity could run out. Again, negative impact of Covid-19 was much on the developing nations as majority are oil dependent economy. For example, 80% of Nigeria's revenue, foreign exchange earnings and foreign direct investment are highly dependent on the crude oil sector (DPR, 2020) and during this era of Covid-19, the overall economic welfare indicators degenerated due to revenue depletion, resulting from the reduction in the oil bench-mark from $57 to $28 per barrel which affected the GDP projection from 2.93% to –4.41% in 2020. The continuous reduction in oil prices have diverse effect on the Nigeria economy in year 2020, the Nigerian National Assembly passed a revised budget of 10.8 trillion Naira from 10.5trillion naira. The on-shore and off-shore oilfields and workers were heavily affected which resulted in loss of contract and jobs thereby further reducing productivity of the oil sector.

3.2. Revenue Generation during the Pre and Post Covid-19 in Nigeria

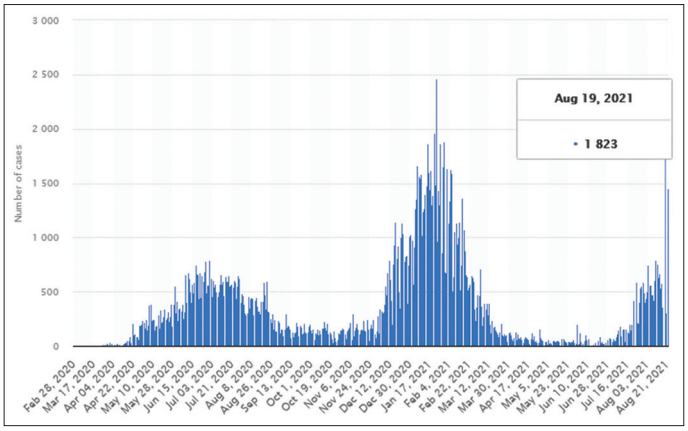
Oil and Gas sector remains the largest sector of economy in Nigeria and the overall economic activities depends on it to thrive. Funding of government economic budgets, policies, plans, objectives and programs depends on oil revenue. Evidence indicates that during the lockdown; there was 11% reduction in Agri-food system GDP because of restrictions on food supply services across the state. During this era, the subsectors that make up agri-food systems such as crops, livestock, forestry, aquaculture, and fisheries (i.e., agri-food systems) were exempted from "lockdown" policies initiated in early 2020 to curb the menace of Covid-19 outbreak by many countries. Beside the policy efforts, the exempted sectors were indirectly affected by the unwanted break in the supply chains and falling consumer demand. After its first confirmed case in 17th March 2020 and subsequent increase in the reported cases over the year (Figure 2), Nigeria's federal and state governments implemented lockdowns across most cities and states. This included closing all borders and many non-essential businesses. This led to a declining remittances and export demand caused by the global

Figure 1: Global oil supply and demand balance by month (million barrels per day)



Sources: Frontiers in Public Health | www.frontiersin.org

Figure 2: Number of new daily Covid-19 cases in Nigeria (Feb 28th, 2020 to Aug. 22th, 2021)



Source: Statista 2021

recission which further degenerated the revenue generation in the country. Evidence shown as presented in Table 2 revealed a significant variation in the internally generated revenue for the thirty-seven states in Nigeria. Though, it was obvious that the effect of Covid-19 spread was more severe in some state than others. According to NCDC (2021) reports, some states have recorded more Covid-19 cases than others, and such states includes; Lagos (77,115), Federal capital territory (FCT - 22,495), Rivers (12,288), Kaduna (9,774), Plateau (9,487), Oyo (8,711), Edo (6,521), Ogun (5,369), Ondo (4,501), Akwa-Ibom (4,330), Kano (4,235) and Kwara (3,899) with a corresponding deaths record of 664, 202, 154, 75, 65, 191, 223, 80, 95, 44, 114 and 62 respectively. These states especially Lagos, Kaduna and FCT are one of the high incomes generating states in Nigeria and since the outbreak of Covid-19, these states witness severe economic meltdown than other states and their internally revenue generation which have reduced drastically when compare to the 2019 records (Table 2). Consequently, the outbreak has made the Nigerian economy to be more fragile, as the rate of poverty, and unemployment of the households have on the increase with poor rate of and per-capita income and economic growth rate, thereby subjecting the country to vulnerability of external debt seen perceived as an alternative measure to curb Covid-19 menace. Since 2020, the country's debt profile has been a source of concern for policymakers and development practitioners as the most recent estimate puts the debt service-to-revenue ratio at 60%, which is likely to worsen amid the steep decline in revenue associated with falling oil prices. These constraining factors aggravate the economic impact of the Covid-19 outbreak and make it more difficult for the government to weather the crisis (IMF, 2020). Hence, this information may not be news because, even before the outbreak of Covid-19, Nigerian economy is faced with insecurity and oil price shock challenges, with narrowing GDP growth rate of about 2.3% in 2019 due to limited fiscal space. But since outbreak of coronavirus in February 2020, evidence have shown that the Nigeria recorded higher oil revenue and internally generated revenue in 2019 than in 2020 (Table 2), indicating the negative impact of Covid-19 on macroeconomic indicators has worsen the Nigeria economic situation. As such, the household incomes witness 9% points increase in the national poverty rate, with 33.3% unemployment and a total of 42.2% youth unemployment (NBS, 2020) in Nigeria.

In addition, the aspect of crude oil revenue generation in Nigeria also presented in Table 2 shows the annual crude oil revenue in Nigeria with much concentration in pre-Covid-19 era, Covid-19 era and post Covid-19 era. The evidence shows that in pre Covid-19 era, Nigeria received a total of US$59billion from the crude oil which it uses to fund the fiscal budget of the country. In year of 2011, Nigeria's greatly fell to US$10billion which is far beyond the previous year – difference of US$49billion. In the year 2012, crude oil revenue increased to US$34.01billion and further increased to US$65billion in 2013. It dropped to US$16billion in 2014 and even collapsed further to US$11billion in 2015 which could be attributed to effects from electoral violence in the year 2015. In 2016 however, the value of crude oil revenue was at US$32billion and there was a sharp fall of crude oil revenue US$17billion in 2017. In 2018, the crude oil revenue oscillates higher to 22.82 billion and even higher to US$47 billion in 2019. However, from 2010 to 2015, Nigeria generated a total of US$32.6 billion from crude oil, which fell to US$24.17 billion from 2016 to 2018 on average. Hence, in 2019 Nigeria generated a total of US$47 billion from crude oil, but the outbreak of Covid-19, it drastically dropped to US$8 billion, but little improvement in 2021

Table 2: Internally generation revenue at state level and crude oil revenue

State	IGR 2021 (Jan-Jun) Billion (N)	IGR 2020 (Apr–Jun) Billion (N)	IGR 2019 (Jan-Dec Billion (N)	State	IGR 2021 (Jan-Jun) Billion (N)	IGR 2020 (Apr–Jun) Billion (N)	IGR 2019 (Jan-Dec Billion (N)
Abia	7,550,111,804.51	1,923,625,729.80	14,769,307,658.56	Katsina	7,488,763,752.00	3,436,455,090.00	8,496,742,119.00
Adamawa	6,086,576,008.62	2,124,142,282.99	9,704,660,185.42	Kebbi	7,334,953,729.18	2,177,650,276.57	7,367,334,837.13
Akwa Ibom	18,094,550,401.76	4,256,565,921.84	32,291,014,771.52	Kogi	9,613,667,379.00	2,012,402,383.85	16,389,026,388.86
Anambra	12,773,155,358.13	5,013,328,721.90	26,369,195,864.89	Kwara	15,978,612,886.36	2,140,787,045.95	30,646,731,408.92
Bauchi	9,467,289,020.25	1,367,246,792.63	11,696,955,884.75	Lagos	267,232,774,434.06	90,512,191,148.02	398,732,246,493.38
Bayelsa	6,415,292,830.28	2,510,947,252.00	16,342,762,531.98	Nasarawa	9,503,511,172.35	2,866,124,878.68	10,858,822,422.98
Benue	6,707,577,748.68	1,727,190,494.58	17,850,480,389.57	Niger	7,925,484,600.86	2,119,100,504.73	12,765,034,972.30
Borno	9,810,950,373.72	1,790,575,436.00	8,175,248,326.42	Ogun	54,823,454,372.03	9,069,046,778.51	70,922,590,495.89
Cross River	14,758,185,490.50	4,062,735,366.59	22,597,063,882.55	Ondo	17,908,118,155.96	5,419,063,997.59	30,135,881,918.26
Delta	41,934,182,750.80	11,534,986,935.77	64,678,796,991.57	Osun	13,669,823,438.82	1,935,782,026.19	17,922,394,523.43
Ebonyi	7,753,332,246.04	1,685,846,166.12	7,455,294,676.59	Oyo	25,191,713,455.75	10,419,154,582.32	26,746,460,235.93
Edo	17,644,442,655.28	4,502,506,895.21	29,478,406,024.31	Plateau	14,465,349,448.60	2,196,735,606.11	16,480,111,593.83
Ekiti	6,588,391,065.65	1,551,323,574.46	8,546,875,648.24	Rivers	57,324,672,372.42	27,940,686,367.22	140,398,744,302.7
Enugu	14,140,554,676.00	6,309,297,595.00	31,069,466,913.00	Sokoto	8,411,485,977.36	3,017,052,025.97	19,005,093,541.11
Gombe	5,441,036,136.73	2,682,397,875.93	6,803,064,814.10	Taraba	4,774,197,659.89	1,711,490,436.66	6,533,106,447.27
Imo	9,991,279,692.29	4,647,332,503.50	16,095,299,620.59	Yobe	4,031,033,046.55	1,961,750,365.92	8,444,634,099.09
Jigawa	9,327,730,762.30	1,097,145,177.64	12,926,658,146.29	Zamfara	8,404,576,644.25	3,517,239,713.61	15,416,043,399.76
Kaduna	26,429,424,219.47	4,355,550,537.78	44,956,576,583.38	FCT	69,072,879,664.43	14,476,423,980.47	74,564,180,835.31
Kano	15,054,248,572.67	9,659,814,175.39	40,593,701,332.48				

Total revenue generation		***Crude Oil Revenue***	
		2010-2015	US$32.6 billion
		2016-2018	US$24.17 billion
2019	N693,914,432,028.11 billion	2019	US$47 billion
2020	N259,731,696,643.5 billion	2020	US$8 billion
2021	N849,123,384,003.55 billion	2021	US$12 billion

Source: OPEC Countries Statistics (2019–2021) and National Bureau of statistics (2019–2021). 2019; Pre Covid-19 Era. 2020; Covid-19 Era, and 2021; Post Covid-19 Era. N; symbolizes Nigerian currency – Naira

(US$12 billion). In like manner, Nigeria experiences the same pattern in internally generated revenue as earlier pointed (Table 2). Given the height of these economic loses, the recovery path is shadowed and Nigerian economy becomes more challenging. Though, so many policies effort have been initiated and initiated to recover the economy and improve the standard of living of the people as discussed in the next section.

3.3. Government Efforts toward Stabilizing Oil Price and Control of Covid-19 Pandemic in Nigeria

In Nigeria, efforts have been made to enforce aggregate demand through increased government spending and tax cuts for businesses. These tremendous steps have been taken to stabilize the oil price movement and control the effect of Covid-19. In order to promotes the economic welfare, through the use of fiscal and monetary policies, reviewed and reformed with some sort of international politics especially on OPEC member countries for the purpose of stabilizing the fluctuations in oil prices and to control the spread and effect of Covid-19 pandemic on the economic agents. In this regard, expansionary policies were initiated to encourage employment and reduce the rate of unemployment and promotes aggregate output, while contractionary policies aim at reducing high rate of inflation which that stood at 16.63% with food inflation rate at 19.57% as at September 2021 (CBN, 2021). Furthermore, additional effort was made through the increase in public budget from 8.83 trillion naira ($24.53 billion) in 2019 to 10.59 trillion naira ($29.42 billion) in 2020, which represented about 11% of the national GDP. In like manner, viewing the private sector as the engine of growth, the entrepreneurship development is encouraged by incentivising small businesses and medium-sized businesses growth through the exemption and cut on company income tax rate revised downwards from 30 to 20%. According to Erkan (2010), Cameron (2006) and Nwaokoro (2010) irrespective of tax cut, the demand and supply of investors also depends on the management of risk factors (both socioeconomic, structural and religious), fiscal stability, and viable regulatory system such as private property protection, corruption control, and government effectiveness in law enforcement. Cameron (2006) stressed that the political risk alone is an inadequate condition for evaluating the efficacy of fiscal stabilization provisions, also geographical risk is included. For an effective contract to be maintained countries have to ensure some level of stability. In support of Cameron (2006) evaluation, Johnston (2010) argued that countries that do not provide stability mechanisms have relatively low political, geographical, financial risks and are less likely to feel the need for economic steadiness.

Following the emergence of Covid-19 pandemic, federal government of Nigeria adopted various measures to check the spread of Covid-19 pandemic, guidelines and laws such as issue of inter-state travel ban within the country as such many sectors were affected, among which are the Nigerian Judicial Council (NJC) suspended all court sittings, Security and Exchange Commission (SEC) regulated entities, Nigerian Civil Aviation Authority, Small

and Medium enterprises, the Corporate Affairs Commission, the Nigerian Stock Exchange, among others. Nigerian Center for Disease Control (NCDC) enforced guideline for businesses and industries operating within the country and all other agencies.

4. CONCLUSION AND POLICY IMPLICATIONS

The study review oil price movement and revenue generation in Nigeria during Covid-19 pandemic era. Measures such as crude oil price in million dollars per barrel, domestic production, volume of crude oil export, and crude oil revenue were assessed in pre Covid-19 era, during Covid-19 era and post Covid-19 era. These measures were greatly affected negatively during Covid-19 pandemic era in Nigeria. The emergence of Covid-19 crisis compelled the government to enact some certain laws that will regulate economic activities, healthcare system, treatment and movement of people from one place to another. On a more serious note, crude oil price volatility left Nigerian economy almost at the verge of collapse. The oil revenue dropped, per capita income reduced, high rate of poverty and hunger, scarcity of food stuffs and hike in the price of little available ones. The federal government provided palliatives in the form of business firms by provision of micro-fund, and food stuffs but little or no palliatives was issued to the general public which are meant to cushion adverse conditions people are passing through due to harsh situations emanating from the menace of Covid-19 pandemic in Nigeria. Although government had issued some measures which includes travel ban on inter-state travel, social distancing, use of nose-mask, use of hand sanitizer before and after entering into a place that will contain more than 5 people. These strict government measures were harsh on people who the status of their jobs is either stagnated or dismissed which made them to have little or nothing to feed on. Scarcity of food supply, degenerated the populace into economic destabilization due to lockdown policies. Many firms were in great deficiency in lack raw materials, cost of maintaining the cost of running the business of companies were high which led to closure or temporal short down of such firms. Consequently, some firms could no longer pay the salaries of their workers resulting to lay-off of many workers.

Furthermore, proceeds from crude oil revenue remains the main source of revenue for Nigerian government in that the country is solely depending on crude oil proceeds for prosperity. The fluctuations in the crude oil prices, the quantity of domestic production, the volume of crude oil exports, and the crude oil revenue were all greatly affected by Covid-19 pandemic. Crude oil price depreciated to US$17.82 million barrel per day in January 2020 from US$47 million barrel per day in December 2019. This makes the decision of the government in terms of funding the fiscal budget to be hard, thereby making the government to borrow money to fund government expenditure. Based on the above abridgment, this study suggests that Nigerian government is advised to make maximum utilization of her fiscal and monetary policies to fix the unemployment and inflation problems created by business-cycle instability in the oil and gas sector of the economy due to outbreak of Covid-19 pandemic, while controlling the spread of Covid-19 in Nigeria.

REFERENCES

Abdullah, A., Bette, S., Dominique, H. (2006), Validity and efficacy of stabilisation clauses legal protection vs. Functional value. Journal of International Arbitration, 23(4), 317-336.

Adedayo, B., Akindele, E., Olamide, O., Olufemi, R. (2018), An empirical investigation into the effects of crude oil price on government revenue in Nigeria. Sumerianz Journal of Economics and Finance, 1(1), 22-30.

Adeleke, O., Ngalawa, H., Kutu, A. (2019), Crude oil price shocks and macroeconomic Performance in Africa's oil-producing countries. Cogent Economics and Finance, 7(1), 1607431.

Adeleke, O., Nwosa P. and Ngalawa H (2019), Monetary transmission channel of oil price shocks and the manufacturing sector in Nigeria. Sciencedo, 19(1), 90-113.

Adeniran, J.O., Yusuf, S.A., Adeyemi, O.A. (2014), The impact of exchange rate fluctuation on the Nigerian economic growth: An empirical investigation. International Journal of Academic Research in Business and Social Sciences, 4(8), 224-233.

Akhmedov, E. (2019), The impact of oil price shocks on selected Kazakhstan's macroeconomic indicators. Journal of International Studies, 12(4), 258-271.

Akpan, E.O., Atan, J.A. (2011), Effects of exchange rate movements on economic growth in Nigeria. CBN Journal of Applied Statistics, 2(2), 1-14.

Alekhina, V., Yoshino, N. (2018), Impact of World Oil Prices on Energy Exporting Economy Including Monetary Policy. United States: Asian Development Bank Working Paper Series no 828.

Algamdi, A., Brika S.K.M., Musa, A., Chergui, K. (2021), COVID-19 deaths cases impact on oil prices: Probable scenarios on Saudi Arabia Economy. Frontier Public Health, 9, 620875.

Al-Marri, A.N., Nechi, S., Ben-Ayed, O., Charfeddine, L. (2020), Analysis of the performance of TAM in oil and gas industry: Factors and solutions for improvement. Energy Report, 6, 2276-2287.

Apergis, N., Apergis, E. (2020), The role of Covid-19 for Chinese stock returns: Evidence from a GARCHX Model. Asia-Pacific Journal Economic, 27, 1-9.

Aremo, A.G., Orisadare, M.A., Ekperiware, C.M. (2012), Oil price shocks and fiscal policy Management: Implications for Nigerian economic planning (1980-2009). International Journal of Development and Sustainability, 1(3), 1121-1139.

Ashraf, B.N. (2020), Stock markets' reaction to COVID-19: Cases or fatalities? Research in International Business and Finance, 54, 101249.

Balouga, J. (2009), The Global Financial Crisis and the Oil and Gas Sector of the Nigerian Economy. International Association for Energy Economics, 4th Quarter.

BBC News. (2020), Business News. Available from: https://www.dpr.gov.ng/dpr-rolls-out-measures-for-oil-industry-survival [Last accessed on 2020 Jul 31].

Bulimu, A.B. (2019), Effects of Oil Price Shocks on Tax Revenue and Government Expenditure in Kenya. University of Nairobi library. Available from: http://erepository.uonbi.ac.ke/handle/11295/109622

Cameron, P. (2006), Stabilisation in Investment Contracts and Changes of Rules in Host Countries: Tools for Oil and Gas Investors. United States: Association of International Petroleum Negotiators.

Cameron, P. (2010), International Energy Investment Law: The Pursuit of Stability. Oxford: Oxford University Press.

DPR. (2020), DPR Rolls Out Measures for Oil Industry Survival. Available form: https://www.dpr.gov.ng/dpr-rolls-out-measures-for-oil-industry-survival [Last accessed on 2020 Jul 31].

El Anshasy, A. (2009), Oil Prices and Economic Growth in Oil-exporting Countries. San Francisco, CA: Proceedings of the 32nd International

IAEE Conference. p21-24.
Englama, A., Duke, O.O., Ogunleye, S., Isma F.U. (2010), Oil price and exchange rate volatility in Nigeria: An empirical observation. Central Bank of Nigeria Economic and Financial Review, 48(3), 1-10.
Erkan, M. (2010), International Energy Investment Law: Stability through Contractual Clauses. Netherlands: Walters Kluwer Law and Business.
Farzanegan, M.R., Markwardt, G. The effects of oil price shocks on the Iranian economy. Energy Economics, 31, 134-151.
Gachara, A. (2015), Channels through which oil price shocks affect economic activity in Kenya. International Journal of Energy Economics and Policy, 3(2), 143-152.
Hakan, M., Nildag, B. and Nukhet, D. (2010), The impact of oil price shocks on the economic growth of selected MENA countries. The Energy Journal, 31(1), 149-176.
Hamilton, D.J. (1983), Oil and the macroeconomy since World War II. The Journal of Political Economy, 9, 228-248.
Hem, C.B., Kamal, P.U. (2015), Impact of oil price shocks on output, inflation and the real exchange rate: Evidence from selected ASEAN countries. Applied Economics, 47(29), 3078-3091.
Hou, K., Mountain, D.C., Wu, T. (2016), Oil price shocks and their transmission in an Oil exporting economy: A VAR analysis informed by a DSGE model. Journal of International Money and Finance, 68, 21-49.
Hussain, B., Yusoff, N. (2013), Evaluating the Mechanism of Oil Price Shocks and Fiscal Policy Responses in Malaysian Economy. 4th International Conference on Energy and Environment (ICEE, 2031) Earth and Environmental Science. Vol. 16. United States: ICEE.p012010.
Jelilov, G., Abdullahi, C., Abdurrahman, I. (2020), Impact of Oil Price Fluctuation on the Economy of Nigeria, the Core Analysis for Energy Producing Countries. India: Interopen Book Serries.
Johnston, D. (2010), Stabilization Provisions Economic Logic. United States: Daniel Johnston & Co., Inc.
Kim, W.J., Hammoudeh, S., Hyun, J.S., Gupta, R. (2014), Oil price shocks and China's economy: Reactions of the monetary policy to oil price shocks. Energy Economics, 62, 61-69.
Kyohun, J., Suh, J.H., Lee, D., Ahn, K. (2020), Impact of the global financial crisis on the crude oil market. Energy Strategy Reviews, 30(1), 00516.
Li, T. (2021), The 2008 Financial Crisis and Its Effects on Gas and Oil. Available from: https://www.investopedia.com/ask/answers/052715/how-did-financial-crisis-affect-oil-and-gas-sector.asp
Malliaris, A., Bhar, R. (2011), Oil price and the impact of the financial crisis of 2007-2009. Energy Economics, 33(6), 1049-1054.
Manasseh, O.C., Abada, F.C, Ogbuabor, E., Okoro, O.E, Ebeke, A., Ozuzu, K.C. (2019), Oil price fluctuation, Oil revenue and well-being in Nigeria. International Journal of Energy Economics and Policy, 9(1), 346-355.
Mcfarlane, G. (2021), Oil Price Analysis: The Impact of Supply and Demand". Guide to Investing in Oil Market. Available from: https://www.Ivestopedia.com/article/investing/10061/oil-price-analysis-impact-supply-demand.asp
Mendoza, O., Vera, D. (2010), The asymmetric effects of oil shocks on an oil-exporting economy. Cuadernos Economics, 47, 3-13.
Mukhtarov, S., Humbatova, S., Mammadli, M., Hajiyev, N.G. (2021), The impact of oil price shocks on national income: Evidence from Azerbaijan. Energies, 14, 1695.
Musa, K. (2015), Diagnosing Dutch-Disease: Does Russia have the Symptoms? United States: IMF Working Paper No. 102. p14-32.
Nwakoby I, Manasseh, C.O., Ede, K.K (2021a), Did household consumption expenditure improve during Covid-19 in Nigeria: An overview of pre and post Era. American Based Research Journal, 10(7), 5179926.
Nwakoby, I., Manasseh, C.O., Abada, F.C., Okonkwo, O.N., Akamike, O.I. (2021b), A review of Covid-19 effect on balance of payment in Nigeria: An overview of pre and post Era. Management and Human Resource Research Journal, 10(8), 1-10.
Nwaokoro, J. (2010), Enforcing stabilization of international energy. Journal of World Energy Law and Business, 3(1), 103-110.
Ogundipe, O.M., Ojeaga, P., Ogundipe, A.A. (2014), Oil price and exchange rate volatility in Nigeria. IOSR Journal of Economics and Finance, 5(4), 1-9.
Oluwatoyin, M.A., Adegboye, F.B. (2014), An analysis of the effect of oil price shock and exchange rate instability on economic growth in Nigeria. Scottish Journal of Arts, Social Sciences and Scientific Studies, 18, 94-106.
Oriakhi, D.E., Osaze, I.D. (2013), Oil price volatility and its consequences on the growth of the Nigerian economy: An examination (1970-2010). Asian Economic and Financial Review, 3(5), 683-695.
Rizvi, S.K.A., Rania, I. (2021), Oil market volatility: Comparison of COVID-19 crisis with the SARS outbreak of 2002 and the global financial crisis of 2008. Economic Research-Ekonomska Istraživanja, DOI: 10.1080/1331677X.2021.1927788
Salisu, A.A., Ebuh, G.U., Usman, N. (2020), Revisiting oil-stock nexus during COVID-19 pandemic: Some preliminary results. International Review of Economic Finance, 69, 280-294.
Ural, M. (2016), The impact of the global financial crisis or crude oil price voilatility. Yonetim Ve Ekonomi Arastrimalari Dergisi, 14(2), 1-10.
Yoopi, A. (2016), OIL price, government revenue, export value and economic growth: Indonesia case. KEK Journal, 20(3), 194.
Zaghum, U., Gubarewa, M., Muhammad, N., Ayesh, A. (2021), Return and volatility transmission between oil prices shocks and agricultural commodities. Ecopaper, 16(2), 1-18.