Assessment the Influence of OPEC Spot Price Fluctuation on Movement of Prices of Industrial Companies Listed on Nigerian Exchange Group (NGX): Dutch Disease Experience and Efficient Market Hypothesis

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DOI: 10.56201/wjfir.v6.no1.2022.pg62.82

Abstract

This study examined the effect of Organisation of the Petroleum Exporting Countries (OPEC) spot price fluctuation on value of All share index Industrial Index (ININ) of Nigeria Exchange Group in Nigeria using time series data from 1981 to 2021. The study seeks to ascertain if OPEC spot price fluctuation alone can influence value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. Autoregressive Distributed Lag Model (ARDL) was employed in analysing the data sourced. Results of the study revealed that interest rate has a negative but not significant effect on value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in both short-run and long-run. Therefore, the study concluded that OPEC spot price fluctuation alone cannot significantly influence value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group, taking a bivariate regression model into consideration with only OPEC spot price fluctuation as the independent variable. Thus, the study recommended that OPEC spot price fluctuation should not be used alone to predict or influence the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. The study employed Granger non-causality test proposed by Toda and Yamamoto (1995) in both bivariate framework and both monthly and quarterly data in examining the relationship between the two variables. Nigerian industrial sector of the Nigeria Exchange (NGX) may be experiencing Dutch Disease due to dwindling stock performance of the sector. Dutch Disease theory predicts the manufacturing sector to decline as a result of mismanagement of caused of oil revenues which is subject to oil price volatility. Industrial Index of industrial companies is discovered to be characterized of Weak form Efficient Market Hypothesis that is consistent with random walk hypothesis, i.e., stock prices move randomly, and price changes are independent of each other.

Keywords: *Stock Prices, Dutch Disease experience, Efficient Market Hypothesis, Industrial Companies, OPEC spot price fluctuation and Organisation of the Petroleum Exporting Countries (OPEC)*

JEL Classifications: *O40, G15, G28, E44, N25, O16*

Introduction

Oil Market and Oil Prices

The oil market has been under pressure since the beginning of Russian-Ukraine war. Oil prices surged raising concerns about global shortages. World oil price outlook remains highly uncertain considering the difficulty of predicting oil prices in the well-integrated market. However, the outlook indicates higher crude oil prices. The World Bank forecasts that crude oil prices will average US$56 per barrel in 2021, up from an average of US$41.3 per barrel in 2020. In the medium term, the World Bank expects crude oil price to rise gradually to an average of $60.0 per barrel in 2022, rising afterwards to US$61 per barrel in 2023 and $61.9 per barrel in 2024. In consultation with the Nigerian National Petroleum corporation Ltd (NNPCL) and other stakeholders, a benchmark oil price of $61 per barrel has been proposed for 2022 and 2023 while US$62 per barrel is proposed for 2024. Considerations include factors underlying market fundamentals, global economic outlook and market sentiments.

In June, 2022 the global benchmark, the Brent crude oil futures was down trading at $116.66 per barrel while the United States benchmark, the West Texas Intermediate crude futures was trading at $115.80 a barrel. Oganisation of Petroleum Exporting countries and its allies, an oil cartel known as the OPEC+, has to increase oil production in the market to adjust its OPEC Spot price of crude oil. World crude oil price can be measured by world crude oil market, West Texas Intermediate (WTI) is commonly used as a standard, because crude oil sold in WTI is high-quality crude oil. This light-weight crude oil consists of low levels sulfur and very suitable as a fuel affects the oil price and thus set as a standard for oil trading around the world. The price of Brent consists a mixture of 15 crude oil from 15 different oil fields located in the North Sea. The quality of crude oil Brent is not as good as crude oil WTI, but still suitable if processed in-to fuel. The price of crude oil Brent is applied as a standard in Europe and Africa. Crude oil Brent is approximately one or two dollars cheaper than crude oil WTI, but four dollars higher than oil price (OPEC). Along with the new industrial countries, the needs of crude oil will escalate. The demand for crude oil will affect world crude oil price and also affect the country's economic matters if attributed to economic activities. The OPEC Reference Basket (ORB) gained $6.67/b, 12.3% increase, to average $61.05/b for March 2021.

The Energy Information Administration (EIA) expects that global oil production will increase to match rising levels of global oil consumption. The rising oil production in the

forecast is attributed largely to the OPEC+ decision to raise production. Rising production is expected to end the persistent global oil inventory draws that have occurred recently and lead to relatively balanced global oil markets in the second half of 2021. Brent crude oil price is expected to rise from an average of $41.69 in 2020, to an average of $65.19 per barrel in 2021, reaching an average of $60.49 per barrel by the end of 2022. EIA expects that continuing OPEC+ with other supply growth - will outpace decelerating growth in global oil consumption and contribute to lower oil prices in 2022.

Energy Information Administration reported a sharp increase in total unplanned crude oil supply disruptions from 21.9mbpd in 2018 to 38.1mbpd in 2019 and a peak of 54.2mbpd in 2020. However, unplanned supply disruptions have declined significantly to 15.9mbpd between January and May 2021. As Figure 5.6 shows, over 80% of unplanned crude oil supply disruptions occurred in OPEC member countries in 2018-2021.

Islamic Republic of Iran, Venezuela, Kuwait, Saudi Arabia and Iraq founded the Organization of the Petroleum Exporting Countries (OPEC) in 1960 (OPEC, 2020). Later Qatar, Indonesia, Libya, the United Arab Emirates, Algeria, Nigeria, Gabon, Angola, Equatorial Guinea and Congo joined the cartel (OPEC, 2020). OPEC produces approximately 44% of the total crude oil production. OPEC tries to control the oil price by manipulating the supply and demand of the oil. Marginal revenue for OPEC is calculated subtracting the marginal revenue which the group would lose if it had to lower the price to all its prior clients from that marginal barrel. On the other hand, deducting the lost revenue to the member from the price would give the marginal revenue for the OPEC members. As a result, there is an arbitrary profit for the member countries if they produce a little more than the group agreed. the supply and demand of crude oil can be disrupted automatically due to political policy changes, war, interference of OPEC, speculation or financial crisis. Different macroeconomic factors are affected by this reason and oil prices spike up or go down. Global macroeconomic factors influence the oil supply and demand.

OPEC Reference Basket (ORB)

ORB introduced on 16th June 2005, is currently made up of the following:

Table 1

S/NO	NAME OF CRUDE OIL	COUNTRY
1	Saharan Blend	Algeria
2	Girassol	Angola
3	Djeno	Congo
4	Zafiro	Equatorial Guinea
5	Rabi Light	Gabon

6	Iran Heavy	Islamic Republic of Iran
7	Basra Medium	Iraq
8	Kuwait Export	Kuwait
9	Es Sider	Libya
10	Bonny Light	Nigeria
11	Arab Light	Saudi Arabia
12	Murban	United Arabic Emirates
13	Merey	Venezuela

Source: OPEC Annual Statistical Bulletin, 2022. Notes: the weekly, monthly, quarterly and yearly averages are based on daily quotations (Daily Basket Price)

According to OPEC 2022, OPEC share of world crude oil reserves is 1,241.82 billion barrels 80.4% while Non-OPEC 3.25billion barrels 19.6%

Table 2

S/NO	**COUNTRY**	**CRUDE OIL RESERVES IN BILLION BARRELS**	**OPEC SHARE IN PERCENTAGE**
1	Venezuela	303.47	24.4%
2	Saudi Arabia	267.19	21.5%
3	Iran	208.60	16.8%
4	Iraq	145.02	11.7%
5	UAE	111.00	8.9%
6	Kuwait	101.50	8.2%
7	Libya	48.36	3.9%
8	Nigeria	37.05	3.0%
9	Algeria	12.20	1.0%
10	Angola	2.52	0.2%
11	Gabon	2.00	0.2%
12	Congo	1.81	0.1%
13	Equatorial Guinea	1.10	0.1%

Source: OPEC Annual Statistical Bulletin, 2022.

Stock Market and All Share Index (ASI)

The Nigerian Stock Market is leveraging from the rise in crude oil prices, especially the oil and gas stocks which have remained on top among the indexes that measure different sectors on the Exchange. The total number of companies on the Nigerian exchange Limited (NGX) as at May 31, 2022 are 165 with total capitalization of ₦28.573trillion. The Industrial Index which measures the performance of manufacturing firms quoted on the Nigerian exchange Limited (NGX). According to data obtained from NGX, the All-Share Index, which measures the broad performance of all stocks ended with a total of 49,965.5 point in 2008. The Nigerian All Share (NASI) dropped below 50,000 Index points to close trading at 49,836.51 points on August 31, 2022.

The Nigeria All-Share Index represents the movement of all shares listed on the stock exchange market. It only includes shares in the computation of the index. It is with a base value of 100. The All-share index comprises of all shares that are listed on the Nigerian stock exchange market. NASI started in 1984 and grew in a slow but steady state from that time to the mid-2000s with index points between 1,000 and 20,000. A major upward trend was experienced between early 2007 and early 2008, which saw the index points climbing from 40,000 to 62,000. However, there was a sharp downturn in the market movement during the 2008/2009 global recession which influenced the index points as it reduced from 62,000 to 20,000. The index has since then been in a recovery state. It has risen to 40,000 which was its former state before the recession. The market is expected to keep going upward if there are no external influences.

The NGX has five sector indices. These are the NGX Consumer Goods Index, NGX Banking Index, NGX Insurance Index, NGX Industrial Index and NGX Oil/Gas Index. According to data obtained from NGX, The NGX Industrial Index was the hardest hit in terms of decline in August, 2022 dropping by 13.8 per cent to 1,777.14 points from 2,062.30 points. The Industrial Index monitors the performance of forty six (46) companies listed below which is designed to provide an investable benchmark to capture the performance of the industrial sector. It comprises the most capitalized and liquid companies in the manufacturing sector. Dangote Cement Plc, BUA Cement Plc, BUA Foods Plc and Nestle Nigeria Plc led the list of most valuable manufacturing companies in Nigeria forming the elite list of Stocks Worth Over One Trillion (SWOOT). Analysts say the negative sentiments were as a result of oil price variation which spark up liquidity crisis in the market. The stock market experts attributed the sentiments to uncertainties in OPEC+ crude oil prices and compounded by the fall in international oil price.

The Composition of Industrial Companies under Industrial Index (ININ) of Nigerian Stock Exchange (now Nigerian Exchange Group, NGX, Ltd)

Table 3

S/NO	NAME OF COMPANIES	S/NO	NAME OF COMPANIES
1	Academy Press Plc	24	Flours Mill Plc
2	Beta Glass Plc	25	Dangote Sugar Refinery Plc
3	C & I Leasing Plc	26	Honeywell Flour Mill Plc
4	Chellarams Plc	27	Multi-trex Integrated Plc
5	Cutix Plc	28	Transnational Corporation Plc
6	Dangote Cement Plc	29	Champion Breweries Plc
7	Eunisell Interlinked Plc	30	Guiness Nigeria Plc
8	Global Spectrum Energy Services Plc	31	International Breweries Plc
9	Greif Nigeria Plc	32	Nigeria Breweries Plc
10	John Holt Plc	33	Cadbury Nigeria Plc
11	Julius Berger Nigeria Plc	34	Nestle Nigeria Plc
12	Nigerian Aviation Handling Company (NAHCO) Plc	35	Northern Nigeria Flour Mills Plc
13	Red Star Express Plc	36	Union Dicon salt Plc
14	Ronchess Global Resources Plc	37	P.Z. Cussons Nigeria Plc
15	SCOA Nigeria Plc	38	Unilever Nigeria Plc
16	Skyway Aviation Handling Company (SAHCO) Plc	39	Vitafoam Nig. Plc
17	The Initiates Plc	40	Mcnichols Plc
18	Trans-Nationwide Express Plc	41	Nascon Allied Industries Plc
19	Tripple Gee and Co Plc	42	Berger Paints Plc
20	UAC of Nigeria (UACN) Plc	43	Meyer Plc
21	Premier Paints Plc	44	CAP Plc
22	BUA Cement Plc	45	BUA Foods Plc

23	Lafarge Cement WAPCO Plc	46	PortPaint Plc

Complied from NGX Statistical Bullettin, 2022.

Statement of problem of the Study

The fluctuations in oil prices during the recent period has become a problem to be studied, especially if linked to changes in the value of All share index Industrial Index (ININ) of Nigeria Exchange Group.. This in turn represents the image of the direction of the global economy. Therefore, the problem can be represented in the following questions: Is there a relationship between the prices of OPEC reference basket (ORB) crude oil and All share index Industrial Index (ININ) of Nigeria Exchange Group.? How does OPEC Spot Price of crude oil affect the movements of All share index Industrial Index (ININ) of Nigeria Exchange Group.? Do All share index Industrial Index (ININ) of Nigeria Exchange Group. respond to the same degree of change in oil prices?

Significance of Research

The fluctuations in the prices of OPEC Spot Price of crude oil is an important topic because it is reflected in many aspects of the African, American, Europe and Asian economy. It is also important to know the relationship between the world oil prices and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. This contributes to giving investors a perception of how to respond to the stock price changes in oil prices which allows them to make the right investment decision.

Objective of the study

The research aims to identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Nigeria Exchange Group.

Hypothesis Development

The research is based on two main hypotheses: Hypothesis 1: There is a statistically significant correlation between changes in OPEC Spot Price of crude oil and Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group; Hypothesis 2: There is a significant

significance of the OPEC Spot prices of crude oil in the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group.

Literature review

Theoretical review

Dutch-Disease Theory

The Dutch-Disease is a concept that is used to explain the potentially harmful effect which a natural resource boom will have on the manufacturing sector of natural resource–rich country. Corden and Neary (1982) pioneered the use and theoretical analysis of the Dutch disease syndrome in their study of how small open country could suffer from de-industrialization following a natural resource boom. Their analysis is based on the assumption that the natural resource country has two sectors i.e the tradable and non-tradable sectors. Natural resource boom will affect the natural resource-rich country via the resource movement effect and the spending effect. The resource movement effect is the tendency for the booming sector to draw labour away from the non-tradable sector, thereby reducing output in that sector. The spending effect entails increase in government expenditure occasion by boom, which increase domestic absorption and concomitantly exchange rate appreciation (Neary & Van Wijinbergen, 1986).

Natural resource abundance can act as a blessing and a curse. A blessing because the discovery of natural resources or an increase in the world market price of a domestic resource, increases the income and thereby also the consumption possibilities in the economy. And a curse as it can cause Dutch Disease which can have severe economic effects in the short as well as in the long run and can act as an obstacle to development within the country. In the end it all depends on how the revenues are used. The importance of wise revenue management cannot be stressed enough. But to spend and manage large revenues wisely can be more complicated than it may first seem. There are endless ways to spend and manage them and there are no uniform solutions to cure Dutch Disease if the country against all odds gets infected by it. The Dutch Disease theory originated after the Netherlands found large sources of natural gas in the North Sea in the 1960s. As a result of the large capital inflows, which followed from increasing export revenues, the demand for the Dutch florin increased which in turn resulted in an appreciation of the Dutch exchange rate. This further led to greater difficulty for Dutch manufacturing goods to compete on the international markets.

The Dutch Disease theory has remained relevant to this day and is still affecting countries all over the world. With today's increasing world market prices for raw materials we are likely to find other affected countries in the future as well. Dutch Disease theory is now also used to explain negative effects from capital inflow caused for example by aid, remittances, beneficial terms-of-trade shocks or sharp productivity increases in export production. Hopefully this study along with other previous and future studies will increase the knowledge about Dutch Disease and will hopefully contribute to lessen the harmful effects that Dutch Disease causes.

The Efficient Market Hypothesis

The EMH, one of the most accepted and eminent financial theories, stated that new information readily incorporated in security prices and market activities or analysis of historical and present data cannot help investors to predict future or to earn above average risk adjusted profit. Moreover, expected return based on this price is consistent with risk, implying that arbitrage opportunities are not viable to consistently identify and exploit. EMH is primarily based on random walk model, according to which information comes into market in random and unpredictable manner and price changes are thus expected to be random and independent. It is suggested that above average return is associated with above average risk.

Efficient market hypothesis rests on three crucial arguments or assumptions:

1. Investors are assumed to be rational and value securities on the basis of maximum

expected utility.

2. If investors are not rational, their trades are assumed to be random, offsetting any effect on prices.

3. Rational arbitragers are assumed to eliminate any influence irrational investors have on market/security prices.

Forms of Efficient Market Hypothesis

Efficient market hypothesis can be categorized into weak form, semi-strong form and strong form EMH. Weak form EMH is consistent with random walk hypothesis, i.e., stock prices move randomly, and price changes are independent of each other. It states that security prices reflect all market information regarding the security, i.e., historical price data. Therefore, it is not possible to beat the market by earning abnormal returns on the basis of technical (trend) analysis (where analysts accurately predict future price changes through the chart of past price movements of stocks). According to semi-strong form EMH, prices adjusted rapidly according to market and public information, i.e., dividend and earning announcements and political or economic events. So it is not possible to earn abnormal returns on the basis of fundamental analysis. Strong form EMH states that prices reflect market, public and private information, i.e., no investor has monopolistic access to information.

Weak Form Efficient Market Hypothesis

Weak form hypothesis assumes that security prices are adjusted rapidly on the arrival of new market information, i.e., past price and return trends. So it is not possible for investors to earn abnormal return on the basis of previous information. Researchers test the weak form efficient market hypothesis through measuring autocorrelation among returns and by examining the impact of different trading rules on stock prices.

Semi-Strong Form Efficient Market Hypothesis

Semi-strong form market hypothesis is concerned with the assumption that current prices fully reflect the publicly available information (announcement regarding earnings, dividends, stock splits, new issues, etc. and other economic or political events). Studies revealed that information regarding stock split is fully reflected in stock prices when actual stock split happens. Investors cannot gain from split information once it is announced publicly (Fama et al., 1969).

Strong Form Efficient Market Hypothesis

Strong form market hypothesis is concerned with the assumption that all available information is incorporated in security prices and no investor has monopolistic access to the private information. So no investor is able to earn above average risk-adjusted profit by anticipating the information.

Empirical review

Faraz (2020) investigated the relationship between crude oil prices and stock performance of European automobile manufacturers in Frankfurt stock exchange. The aim was to investigate whether high oil prices had a detrimental effect on auto investor returns and to analyse the performance of auto manufacturers in a high oil price movement using regression using OLS method adding oil factor in the asset pricing model of three Fama-French model. The results indicate that oil prices is not having a significantly adverse impact on automobile sector returns and stock performance. Crude oil prices appeared to have negligible effect on stock performance of European auto manufacturers. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Luo and Qin (2017) investigated the effects of oil price shocks and oil price volatility shocks on the Chinese stock market index and five sector returns employing the wavelet and autoregression approaches. The results indicated that oil price shocks positively affect Chinese stock returns. Also, oil price volatility shocks have significant and adverse effects on the Chinese stock market while the impact of realized volatility shocks is negligible. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Hu, Liu, Pan, Chen and Xia (2018) examined the long-run and short-run asymmetric effects of structural oil price shocks on the Chinese stock market using structural vector autoregression

(SVAR) model and the non-linear autoregressive distributed lag (NARDL). Findings revealed that the demand-side shocks of oil price have a significant impact on the Chinese stock market in the short-run and long-run, while the supply shock does not. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Muhammad, Jian-Zhou, and Muhammad (2019) studied the asymmetric impact of oil prices on stock returns in Shanghai stock exchange (2000-2018) estimating with asymmetric autoregressive distributed lag model. Bound testing method for the long run association. Cointegration exists between the oil prices and the stock returns. Both in the long and short run increase in oil prices have a negative impact on the stock returns of Shanghai stock exchange while decrease in the oil prices has a positive impact on the stock returns. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Tiwari, Jena, Mitra and Yoon (2018) investigated oil price fluctuation and sectoral performance of Shanghai stock exchange vector autoregressive model (VAR) and trend analysis oil price fluctuation adversely affect performance of equity in the short run but no correlation in the long run. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Xiao, Zhou, Wen and Wen (2018) investigated the impacts of oil price uncertainty on the aggregate and sectoral stock returns in China deploying quartile regression. Crude oil volatility index changes showed significantly negative effects on the aggregate and sectoral stock returns. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Groua in relation to Dutch Disease Experience and Efficient Market Hypothesis

Bildirici and Badur (2018) found that India, an oil importing country, has a bidirectional causality from crude oil price to stock market. Higher oil prices may increase the production cost in the oil importing countries and stock market return can decline due to lower profitability and dividend which means higher oil price has a negative impact on the Indian capital market. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis.

Al Samman and Jamil (2021) in Oman, Kuwait, Bahrain, Qatar, Saudi Arabia and United Arab Emirate, investigated the impact of falling oil prices at the beginning of 2020 on 82 industrial companies listed on the GCC stock markets using research methodology of panel least square (PLS) and panel generalised method of moments (GMM) with fixed and random effects in each country. There is a positive relationship between oil prices and share prices of industrial companies in the gulf countries. The share prices of industrial companies in the gulf cooperative countries (GCC) have been negatively affected by the decline in oil prices with the beginning of 2020. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Sharma, Giri, Vardhan, Surange, Shetty and Shetty (2018) studied the relationship between crude oil price and India's stock market impulse response function using standard deviation crude oil prices are negatively affected when a stock is given to stock indices. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Echchabi and Azouzi (2017) examined the possible effect of the oil price fluctuations on stock price movements in Oman with the use of time series analysis and Toda and Yamamoto's granger non-causality test on the daily Oman stock index-Muscat securities market index 2003-2016. Findings revealed that oil price fluctuations have a significant impact on stock index movements. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine

the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Adekunle, Bagudo, Odumosu and Inuolaji (2020) analysed the role of crude oil prices in predicting stock returns; examined the possibility of nonlinearities in the nexus between crude oil prices and stock returns of nine major oil and gas companies 2014-2019 ARDL model, cointegration test and vector error correction significant in-sample predictability of stock returns using crude oil prices; oil price matters in the predictability of stock returns in Nigeria. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Shehu and Hassan (2017) examined the asymmetric effect of oil prices shocks on stock market performance in the Nigerian Economy using Non-linear Auto-regressive Distributed Lags (NARDL) frameworks. It was discovered that positive changes in oil prices had no significant effect on stock market performance, while reduction in oil prices had negative and significant effect on the performance of the Nigerian stock market. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Kang, De Gracia and Ratti (2017) investigated the effects of oil price shocks on both us aggregate oil and gas stock returns and for selected oil and gas companies (Royal Dutch Shell, Exxon Mobil, BP and Chevron Corporation) Johansen cointegration and error correction model an oil demand-side shock has a positive impact on the return of oil and gas company stock for the USA; negative oil prices shock trigger negative responses from the oil and gas sector's returns. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis.

Hazem and Akhsyim (2018) investigated the relationship between oil price shocks and stock market returns in the three largest oil-producing countries Saudi Arabia, Russia and United

States to analyse wether oil price changes can predict stock market returns in the three largest oil-producing countries vector error correction models oil price changes driven by supply shocks exert a clearly positive impact on stock market returns in Russia, a negative impact on the USA and an ambiguous impact on Saudi Arabia. However, oil price changes driven by demand shocks have a positive impact on all three countries. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Zhang (2017) china studied the relationship between oil shocks and returns at six major stock markets unit root test; an asymmetric ARDL model, cointegration test it shown that the contribution of oil shocks to the world financial system is limited. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Antonakakis, Chatziantoniou and Filis (2017) in USA and Canada assessed whether the different oil price shocks spillover effects to stock market returns at different times considering both oil exporting and oil importing countries panel data regression method the aggregate demand shocks are not net transmitters of shocks to stock markets during economic turbulence, whereas the supply-side precautionary demand shocks are not transmitters of oil price shocks on us stock market returns; there is weak dependence between the oil prices and stock indices; in large oil producing and consuming countries like USA and Canada, there exists strong dependence between the oil prices and stock indices. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Wei, Qin, Li, Zhu and Wei (2019) explored nonlinear cointegration between international crude oil prices and stock market performance in China nonlinear threshold cointegration the exchange rate of the Chinese currency against us dollar is the most crucial factor that transmits the effect of oil price of oil price on china's stock market; crude oil price shocks is not directly transmitted to the stock market. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ)

of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis

Youssef and Mokni (2019) assessed the relationship between oil price and the stock market for oil-importing countries and exporting countries Russian, Canada, Norway, China, USA and Japan DCC-FIGARCH model positive relationship oil price change can stimulate oil-importing companies' profit. the result shows weaker evidence for oil-exporting countries in this study. The research did not identify trends in OPEC Spot Price of crude oil during the research period and identify the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period. This will allow the researchers to determine the relationship between OPEC Spot Price of crude oil and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group in relation to Dutch Disease Experience and Efficient Market Hypothesis.

Summary of Finding from Relevant Literatures

It is observed from relevant literature that there are mixed results on the effect of Price of crude oil on stock market performance (while some studies discovered significantly statistical and positive relationship between crude oil price and stock market development (Youssef & Mokni, 2019; Wei, Qin, Li, Zhu & Wei, 2019; Antonakakis, Chatziantoniou & Filis, 2017; Zhang, 2017; Hazem & Akhsyim, 2018; Kang, De Gracia & Ratti, 2017; Shehu & Hassan, 2017). Many researches also revealed significantly statistical and negative relationship between oil price volatility and stock market indices (Adekunle, Bagudo, Odumosu & Inuolaji (2020); Faraz (2020); Luo & Qin (2017); Hu, Liu,Pan, Chen & Xia (2018); Muhammad, Jian-Zhou & Muhammad (2019); Tiwari, Jena, Mitra & Yoon (2018) Xiao, Zhou, Wen & Wen (2018); Bildirici & Badur (2018); Al Samman & Jamil (2021) and few has no significantly relationship between oil price fluctuation and sectoral stock returns (Sharma, Giri, Vardhan, Surange, Shetty & Shetty, 2018; Echchabi & Azouzi, 2017).

The evidence provided by the empirical literature is that there are indeed heterogeneous responses to position on complex relationship between oil price volatility and stock market performance. Hence the need for assessment the influence of OPEC spot price fluctuation on movement of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group: Dutch Disease experience and efficient market hypothesis

Description of variables

Table 4

VARIABLE	MEASUREMENT	DESCRIPTION	SOURCE
OPEC SPOT PRICE FLUCTUATION	OPEC Reference Basket	OPEC Spot Prices	OPEC Annual Statistical Bulletin, 2021
MOVEMENT OF PRICES OF INDUSTRIAL COMPANIES LISTED ON NIGERIAN EXCHANGE GROUP (NGX)	Industrial Index Of Nigeria All-Share Index (Nigerian Exchange Group)	The Industrial Index monitors the performance of forty six (46) companies listed below which is designed to provide an investable benchmark to capture the performance of the industrial sector.	NGX Statistical Bulletin (2021)

NASI = Nigeria All Share Index proxied by

Industrial Index (ININ) of Industrial Companies Listed Stocks Listed on Nigerian Exchange Group(NGX) Ltd

ININ = Industrial Index

OPEC=OPEC Spot Price

$\beta 0$ = Constant Term

$\beta 1$ = Coefficients

μ = Error Term

$ININ = \beta 0 + \beta 1 OPECt + \mu$ ……Model

To improve on the linearity of the model, logarithm was introduced as follows:

$LogININ = \beta 0 + \beta 1 LogOPECt + \mu$ …… Logged Model

Jarque-Bera statistic for each of the variables studied (ININ, OPEC) has a probability greater than 0.05. Thus, the null hypothesis of a normal distribution is accepted for all the variables considered in the study. This implies that the data series

(variables) were normally distributed.

Correlation – is an analysis measuring the strength of a linear association between variables. The coefficients of the relationship to be estimated are assumed to have a unique mathematical form. That is, the variables are easily identified. The relationship to be estimated is correctly specified.the concept of unit roots in time series. Estimate the DF, ADF and PP tests using appropriate software. the concept of cointegration in time series. Multiple Regressions, Vector Auto Regressive (VAR) Models, Non-Stationarityand Unit Roots and Cointegration and Error Correction Model. Multiple Regression Model and Statistical Test of Significance. Test will be conducted to resolve Econometric Problems (Heteroscedasticity, Autocorrelation and Multicollinearity)

Excerpt from Statistical Analysis of Research Variables

Correlation and the impact of changes in the OPEC Spot Price of crude oil on the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the period. Table (5) shows the correlation values and the effect of oil price changes in value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the research period.

Table 5: The correlation and the effect of OPEC Spot Price of crude oil in the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group during the period

Sig	F	R2	C
0.000	112.628	.4680	0.684

It appears through the table that there is a positive correlation between OPEC Spot Price of crude oil and values of the relationship value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. The value of this relationship was recorded at 0.684 and this value shows the existence of a moderate strength relationship between OPEC oil prices and the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. This proves the validity of the first sub-hypothesis emanating from the main hypothesis that "there is a statistically significant correlation between OPEC Spot Price of crude oil and value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group." The value of the coefficient of determination (R2) between the two variables was (0.468), that is (47%) of the changes in the value of the index caused by changes in oil prices and 53% for other reasons and factors. Also note that the value of (F) has reached 112.628 and the value of F Sig has reached 0.000, which is lower than the value of F Sig tabular value of 0.05. This gives an indication of the significant effect of OPEC Spot Price of crude oil on the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group and this proves the validity of the first sub-hypothesis of the second main hypothesis.

Conclusions and Recommendations

The OPEC Spot Price of crude oil recorded an upward trend during the research period, which means increasing demand. Therefore, value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group recorded an upward trend with stability in all indices of the research sample. The value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group achieved the highest return. The response of three of the indicators are similar to the change in OPEC Spot Price of crude oil, where the direction of the impact was positive, although its intensity varied so that the highest impact of OPEC Spot Price of crude oil was recorded in the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. The effect of oil prices did not appear in the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group. Based on the this results, the researchers believe that the world oil prices can be used as an indicator to identify the trends of the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group so that investment strategies in stocks can be based on future oil prices, and education for investment in the value of Industrial Index (ININ) of Industrial Companies in Nigeria Exchange Group of the owners of savings money, because usually the trend of price values upward in the medium. Conducting a scientific study to look at the relationship between international oil prices in more depth with increasing variables and financial markets and for longer periods of time to reach more capable models in providing a better understanding of this relationship. It is difficult to generalize a specific framework for the relationship between oil prices and stock indices. Directing investors with interest in studying oil prices before discussing the movements of stock indices, especially during periods of high volatility.

The analysis has been based on the NGX data from 1981 to 2021 and the Nigerian crude oil prices. The data has been subjected to time series econometric analysis and found to be non-stationary. The study concludes that the Nigeria stock market and the oil price are tied together in the long run. A rise in the price of oil leads to a decline in the return performance of the market. Although this is in line with theory, it is considered abnormal for an oil producing economy like Nigeria. It is therefore recommended that the country should ensure that the revenue from oil is prudently utilized in order for it to impact positively on the economy. The finding also further corroborates the critical importance of refining the Nigerian crude oil locally, to conserve foreign exchange, and eliminate importation of refined petroleum products and its attendant general deleterious effect on the economy in terms of imported inflation, high production cost, and pressure on foreign exchange and the consequential decline in stock prices in particular.

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