Lafia Journal of Economics and Management Sciences: Volume 9, Issue 2; 2024
ISSN: 2550-732X
Published by Department of Economics, Federal University of Lafia, Nigeria

Foreign Direct Investment-Global Oil Price Nexus: A Comparative Analysis for both Nigeria and Morocco

Moshood Kolawole Alabi[1] & Halimoh Olawunmi Odeniyi[2]
[1&2]Department of Economics, University of Ilorin, Nigeria.
Corresponding Email: alabi.mk@unilorin.edu.ng

Abstract
This study investigated the relationship between crude oil prices and foreign direct investment inflow in Nigeria and Morocco. The research was motivated by the critical role of Foreign Direct Investment in driving economic growth and the perceived influence of oil price on investment decision. Utilizing data from 1990 to 2022, the study employed Autoregressive distributed lag model (ARDL) and the Error correction (ECM) models to analyse the impact of oil prices on Foreign Direct Investment. The findings revealed that in Nigeria, global oil price and inflation rate were the most significant factors affecting foreign direct investment in both the short and long run. Oil price has a positive relationship with FDI while inflation rate has a negative relationship with FDI. In Morocco, oil price, real gross domestic product and interest rate have a positive impact on FDI. Oil price had a significant positive impact on Foreign Direct Investment in both countries. The conclusion to be drawn from this study is that there are different and similar factors affecting FDI inflow in various countries. A similar factor may have a positive relationship with FDI in a country and yet have a negative relationship with FDI in another country. The study recommends that the Central Bank of Nigeria should work towards reducing its inflation rate as this will help to attract FDI. Also, the government of Morocco should provide a conducive environment for all businesses to grow. When local production increases, it helps to attract FDI into the country.

Keywords: Economic Growth, Exchange Rate, Foreign Direct Investment, Oil Price
JEL Classification Codes: F43, F31, F21, Q41

1. Introduction

Countries worldwide have long recognized the pivotal role of Foreign Direct Investment (FDI) as a conduit for the transfer of technology and a vital catalyst for growth that surpasses the impact of domestic investment (Sucubasi, Trenovski, Imeri, & Merdzan, 2021). Consequently, governments persistently offer tailored incentives to attract foreign enterprises and stimulate

the establishment of companies within their borders. This strategic approach aims to foster an environment conducive to technological innovation and economic advancement, thereby positioning nations for sustainable development and global competitiveness.

Carcovic and Levine (2002) astutely observed that the economic justification for providing specialized incentives to entice FDI often stems from the conviction that foreign investment yields externalities in the shape of technology transfer and spillover effects. Building upon this insight, Kudaisi (2014) underscores the critical significance of FDI in the African context, characterized by pervasive challenges such as high poverty rates, exceedingly low savings and income levels. In such contexts, FDI assumes a pivotal role as a potential driver of economic development and growth, offering opportunities for technology diffusion, knowledge exchange, and overall socio-economic upliftment.

Nigeria has consistently attracted foreign investors who are drawn to its abundant natural resources and expansive market potential (Tumala, Olufemi, Omotosho, & Baruwa, 2012). Over the years, the nation has recorded a significant rise in foreign direct investment (FDI) inflows, reflecting its appeal to international investors. For instance, FDI inflow into Nigeria, was $580 million in 1990, $1.1 billion in 2000 and $8.84 billion in 2011, but by 2018, it dropped to $780 million. In 2021, it rose to $3.31 billion but fell to $900 million in 2022 (World Bank, 2023).

However, it is important to note that the pattern of FDI in Nigeria, as observed across Sub-Saharan Africa, tends to be heavily concentrated in extractive industries. This concentration underscores the dominant role of natural resources in bringing in foreign investment to the region. Scholars such as Morisset (2000); Asiedu (2002); and Ayodele and Sotola (2014) have pointed out that the various rates of FDI inflows among Sub-Saharan African countries can largely be attributed to the presence of natural resources, however, the domestic market size matters too in influencing investment decisions.

The significance of the market for crude oil and its impact on investor feeling has been extensively examined in various studies, reflecting the multifaceted nature of this market. Gong, Wen, He, Yang, and Pan (2016) delved into the extreme returns, extreme volatility, and investor sentiment, highlighting the varying influences of different return rate series on investor sentiment. Their findings, employing both Ordinary Least Squares and Quantile Regression methods, underscored the nuanced relationship between extreme returns, volatility, and investor sentiment. Given the pivotal role of crude oil in the economies of the Organization of the Petroleum Exporting Countries (OPEC) member countries, including Nigeria, attention to price

changes in the oil industry is paramount for investors and governments globally to avert potential challenges (Ibrahim & Mohammed, 2020).

Nigeria's status as a major oil producer underscores its reliance on oil revenue to finance its budget, which is contingent on daily oil production volumes and prevailing prices. The United Nations Commission on Trade and Development [UNCTAD], (2009) emphasized in its annual country report on Nigeria that while FDI has been significant in the gas and oil sector, it remains low in other sectors, hindering their development. FDI inflow to Nigeria is notably influenced by oil sector developments, global oil prices, and government policies in this domain. For instance, Nigeria's foreign investment inflow dropped by 19.4% to $377.4 million in 2023 from $468.1 million in 2022. Divestments made by major multinational oil and manufacturing firms was the reason for this (National Bureau of Statistics, [NBS], 2024).

According to Arbia, Sobhi, Karim, and Eddaou (2023), recent statistics highlight this upward trajectory, with FDI in Morocco surging by an impressive 52% compared to the preceding year. This surge not only reflects the growing confidence of international investors in Morocco's economic prospects but also solidifies its position as one of the leading investment destinations within the region. Such robust FDI inflows signify the country's ability to leverage its strategic advantages, including its geographic location, stable political climate, and ongoing efforts to enhance its business environment. These developments aligned with the findings of the latest UNCTAD (2022) world investment report which underscores Morocco's increasing prominence as an attractive destination for foreign investment. As Morocco continues to harness the synergies between technological innovation and FDI, it is poised to further bolster its economic growth trajectory and place itself as a dominant player in the global investment landscape.

In contrast to countries like Nigeria, Morocco is not a major oil-producing nation. The country has limited domestic oil reserves and production, which significantly mitigates its direct exposure to fluctuations in global oil prices. Morocco's energy landscape is characterized by a diverse mix of energy sources, including natural gas, coal, and renewable energy, which serve to reduce its reliance on imported oil and insulate its economy to some extent from the volatility of global oil markets.

Despite its relatively minimal role in oil production, Morocco, like many other countries, is still impacted by shifts in global oil prices due to its reliance on imported oil for meeting domestic energy needs. Fluctuations in oil prices can influence the cost of imported oil and petroleum products, thereby affecting the country's energy security, trade balance, and overall macroeconomic stability. Additionally, changes in oil prices can indirectly impact numerous sectors of the Moroccan economy, such as construction,

communication and transportation, and agroprocessing, which rely on oil-derived products for operations and production. This is so because oil serves as a factor input in running plant and machinery in various sectors of the economy.

Although we acknowledge the widely recognized effects of stock price volatility, returns, and profitability on investor sentiment, it is imperative to delve into the mechanisms through which crude oil prices exert influence on the flow of FDI to both Nigeria and Morocco. The UNCTAD (2022) investment policy review report highlighted a robust correlation between global oil prices and FDI into Nigeria. The evidence from the reports shows that the level of FDI in Nigeria is affected by oil prices.

Drawing from these reports, it is imperative to analyze and assess the potential impact of oil price changes on FDI inflows and ascertain the magnitude of their relationship on the two countries. This investigation gives us the opportunity to determine whether there will be a change in the FDI inflows for a nation that is known for oil production in comparison to a country that does not produce oil when there is a change in the oil. Therefore, obtaining a comprehensive understanding of how fluctuations in crude oil price affect FDI into the economy is essential. Such insight will empower authorities to carefully evaluate the consequences of policy decisions they make targeted at swaying oil prices in either direction.

The main objective of this study is to assess the impact of global oil price on FDI in Nigeria and Morocco. The justification for conducting this study lies in the crucial role that FDI plays in driving economic growth, technology transfer, and overall development in countries worldwide. By focusing on the relation between global oil price and FDI inflow in these two nations, this study aims to provide insight into the dynamics shaping investment decisions and economic outcomes.

The choice of Nigeria and Morocco as the focus of this study was as a result of the fact that these 2 countries are diverse and this study was out to capture that diversity within the African continent. Morocco is North Africa's leading recipient of FDI while Nigeria is the dominant FDI recipient in West Africa. Nigeria's vast natural resources, particularly its significant oil reserves, have historically attracted substantial foreign investment. The country's reliance on oil exports as a primary source of revenue highlights the critical role that commodity prices, particularly crude oil, play in shaping its economic fortunes. Nigeria offers a contrast to Morocco's economic structure, being more directly affected by global oil market dynamics. This comparative analysis will elucidate more on the differential impact of oil price fluctuations on FDI inflow between these two distinct economies. Though there are several

other countries and regions which could have been compared, this study was limited by time.

By focusing on both Morocco and Nigeria, the study seeks to show how oil price volatility can alter investment decisions and economic outcomes in nations with contrasting economic dependencies. Morocco, without a significant reliance on oil, provides a valuable contrast to oil-dependent economies like Nigeria. This approach enables an examination of how external factors—specifically oil price fluctuations—impact FDI inflows and economic resilience. This study contributes to the existing literature by expanding empirical evidence on the relationship between crude oil prices and FDI inflows, particularly in the specific contexts of Nigeria and Morocco and it would provide evidence for comparison on the possible differential effect of oil price on countries that are heavily reliant on oil and those that are not.

The rest of this study is organized as follows: Section 1 gave an introduction. Section 2 presents the literature review, section 3 states the methodology while section 4 discusses the result and findings. Section 5 is the conclusion and recommendations.

2. Literature Review

2.1 Conceptual Issues

2.1.1 Oil Price

Since its discovery in the 1800s, crude oil has been instrumental in shaping the global economy. As a vital energy source, crude oil occupies a central role in society, serving as a fundamental input for production and consumption at the global, national, and individual levels. Its status as a strategic resource commands the interest and focus of nearly every individual on the planet (Ademakinwa & Omokanmi, 2017). Crude oil's significance has grown to the point where it is regarded as a crucial linchpin in the operations of global, national, and local economies. Its importance is emphasized by the hypothetical scenario where, without oil, the primary distribution systems enabling economic transactions on scales beyond local levels would struggle, ultimately resulting in the collapse of the global economy (Saidu, 2024).

The global oil price fluctuates. A reduction in oil price has multiplier effect upon the different sectors of the economy. It affects government revenue, foreign reserve, investments and consumption. The consequences of this include decline in economic growth, a rise in budget deficits, and a reduction public services and infrastructure development. On the contrary, a rise in the price of oil can boost income for oil-exporting countries, increase public revenue and foreign earnings, and lead to increased investment in various sectors of the economy. However, it also raises concerns about

inflationary pressures and the potential for economic overheating (Bawa, Abdullahi, Tukur, Barda, & Adams, 2020).

2.1.2 Foreign Direct Investment

According to the World Bank (2016) foreign direct investment presents a distinctive class of cross-border investment characterized by a resident entity in one country exerting control or a substantial degree of influence over the management of an enterprise located in a different country. This control or influence is often facilitated through equity ownership, where the direct investor holds a significant stake in the target enterprise, typically 10% or more of the voting shares. Udoh (2014) characterized FDI as foreign capital inflow into an economy through investments made by multinational corporations (MNCs). This definition underscores the role of MNCs as key actors in directing foreign capital towards domestic economic activities, highlighting the pivotal role played by FDI in shaping the economic landscape of recipient countries. Also, the definition emphasizes the importance of understanding FDI not only as a financial transaction but also as a mechanism through which multinational corporations contribute to the flow of capital across international borders, thereby influencing economic development and growth trajectories in host economies.

2.2 Theoretical Review

2.2.1 Eclectic Paradigm Model

The eclectic paradigm according to Dunning (1980), states that three conditions must be met simultaneously before a firm can embark upon foreign direct investment. The first condition is that the firm should enjoy net ownership advantages over other companies in the market. The second condition is that the firm becomes profitable if they utilize the net ownership benefits for itself rather than selling to foreign firms. The third condition to be satisfied is that the firm becomes more profitable when they decide to commence production while considering location-specific factors outside the home country of the organisation.

Potential investors in the gas and oil sector of Nigeria and Morocco and indeed other sectors of these two economies would consider the three basic conditions put forward by Dunning (1980), when making their decision to invest or not. The global price of oil would be a major factor to be considered when potential firms are either thinking of investing in the oil and gas industry of Nigeria or Morocco or investing in other sectors of these two economies which would require oil as a major factor input.

Morocco, with limited oil reserves and a more diversified economy, may exhibit a more nuanced relationship between oil prices and FDI. While

higher oil prices may trigger more investment in energy-related infrastructure, Morocco's focus on economic diversification means that FDI inflows are influenced by factors beyond oil prices. Lower oil prices could attract FDI in other sectors such as manufacturing, tourism, and services, benefiting from reduced import costs and improved trade balances. Therefore, applying the Eclectic Paradigm model helps elucidate how changes in oil prices affect FDI dynamics in Nigeria and Morocco, taking into account their economic structures and policy responses to oil price fluctuations.

2.2.2 Assignment Theory of FDI

The Assignment theory of FDI examines both the volume and composition of foreign direct investment, distinguishing between cross-border acquisitions and Greenfield Investment (Nocke & Yeaple, 2008). It states that when two countries engage in free trade, differences in factor prices lead to Greenfield FDI and cross-border acquisitions. In Nigeria, being heavily reliant on oil, fluctuations in oil prices can significantly influence factor prices, potentially affecting the composition of FDI between Greenfield investments and acquisitions. During periods of high oil prices, the abundance of natural resources may attract Greenfield investments aimed at tapping into Nigeria's oil sector. Conversely, lower oil prices may lead to an increased focus on cross-border acquisitions as companies seek to capitalize on strategic assets in Nigeria's oil industry through acquisitions rather than establishing new ventures.

As for Morocco's non-oil-dependent economy, it may experience less direct impact from oil price fluctuations on factor prices. Consequently, the composition of FDI in Morocco may be less influenced by changes in oil prices compared to Nigeria. Instead, factors such as market size, natural resources other than oil, macroeconomic stability, and infrastructure development may play a more crucial role in bringing FDI to Morocco.

2.3 Empirical Review

Moshiri and Kheirandish (2024) assessed the impact of oil price shocks across 30 oil exporting and oil importing countries. Their results showed that all oil exporting nations gained from oil price shocks but the gain was reduced due to trade. Meanwhile oil price shocks had negative impact on the oil importing countries. Saidu (2024) investigated the non-linear relationship between oil prices, inflation and GDP for 8 oil importing African countries. He observed that oil prices and inflation positively affect GDP which is contrary to the findings of Moshiri and Kheirandish (2024).

Tala and Hlongwane (2023) investigated the effect of oil price changes on FDI in South Africa. Using ARDL and error correction model, the study

found out that oil prices had a significant negative effect on FDI. The study recommended that South Africa should diversify its sources of energy in order to prevent the economy from being vulnerable to oil price fluctuations.

Elheddad (2016) conducted a panel data analysis focusing on six oil-exporting GCC countries, examining the link between natural resource abundance, foreign direct investment (FDI), and the countries' GDP. The study revealed a negative correlation between the abundance of natural resources and FDI inflow in these GCC nations. This finding suggests that as the level of natural resources increases, FDI inflows tend to decrease. Furthermore, Elheddad observed a negative correlation between FDI inflow and the GDP of oil-exporting GCC countries. The implication is that increased FDI inflows lead to reduced GDP levels in these nations. These results underscore the dynamics between natural resource wealth, FDI, and economic performance in the GCC region. The panel data model employed by Elheddad allowed for a comprehensive analysis, considering variations across both time and individual countries.

Tambari, Failler, and Jaffry (2024) analysed the symmetric and asymmetric link between FDI, particularly, renewable energy investment. 6 African countries were studied which included net importers and net exporters of oil. They found out that oil price significantly affects investments, positively for some countries and negatively for others. Wong, Goh, and Hooi (2015) observed the interplay between FDI, oil prices, and the global financial crisis in Singapore. Findings revealed a close relationship between external shocks and foreign direct inflow in the short term. They identified external shocks, including the Mexican crisis, the Asian financial crisis, the global financial crisis, and periods of rising oil prices, exerted a notable effect on FDI in Singapore. These events significantly influenced the flow of FDI into the nation, underscoring the sensitivity of FDI to economic conditions and crises across the globe.

Mahmood and Alkhateeb (2018) examined the relation between foreign direct investment (FDI), domestic investment, and oil prices in Saudi Arabia. Employing the Autoregressive Distributed Lag (ARDL) methodology, their study revealed that economic growth is not a significant determinant of FDI inflow. However, favourable market conditions, bolstered by rising oil prices, exerted a positive impact on FDI inflow into Saudi Arabia.

Muhammad (2021) investigated the link between oil price and FDI in Nigeria from 1970 to 2018. Their findings revealed that oil price is not a significant variable in determining FDI. Meanwhile, Olure, Gbadebo, and Ajiteru (2015) found out that in the long run global oil price has a negative effect on FDI in Nigeria. On the contrary, Ademakinwa and Omokanmi (2017) observed that a rise in oil price led to a rise in FDI and economic growth.

Kinuthia and Murshed (2015) carried out a comparative analysis of the determinants of FDI in Kenya and Malaysia. A second objective of the study was to assess the effect of FDI on economic growth in both nations. With the aid of a Vector Autoregression model, the study found out that FDI has a positive effect on growth for Malaysia, but it does not have the positive effect on growth for Kenya. It was concluded that policies implemented to attract FDI do not necessarily translate to economic growth. Rather, policies must be designed to enable transfer of technology from foreign firms to the host country. It is only then that economic growth can be realised through FDI.

Shafi and Liu (2014) focused on how oil price and exchange rates affect the Russian economy. Results showed a positive link between oil price, exchange rate and economic growth. They also showed that FDI has positive impact on macroeconomic variables in the society. The study recommends that the Russian government needs to consider the impact of macroeconomic variables when formulating policies aimed stimulating economic growth.

Kari and Saddam (2014) studied FDI, oil export and economic growth in the GCC countries. The study employed a vector error correction model. Findings revealed that oil price fluctuations lead to reductions in the level of FDI. As a consequence of this, economic growth is adversely affected too. The study recommends that policies that will help to attract FDI into the nation should be implemented. Razmi and Behname (2012) took a look at FDI in the oil exporting Islamic countries. They found that there is a negative relationship between oil extraction and the level of FDI. This poses a risk to the nation, and it has to be properly monitored.

Muhammad and Syed (2012) assessed the impact of oil price on macroeconomic variables in South Asian nations. With the use of OLS regression, the study observed an upward movement in oil price leads to an upward movement in FDI. Contrary to the findings of Muhammad and Syed (2012), Mehta (2014) uncovered a different relationship between oil price fluctuations and investment in Pakistan. Mehta's research revealed a negative impact of oil price fluctuation on investment within the country. This negative influence led to a deterioration of economic growth, primarily as a result of the role of oil price changes in exacerbating inflation. Mehta's study suggests that as oil prices fluctuate, they contribute to an increase in inflationary pressures within Pakistan. Consequently, the heightened inflation levels elevate the costs tied to investment. This phenomenon, wherein rising oil prices result in increased investment costs due to inflationary pressures, ultimately leads to a negative effect on investment levels and subsequently impacts economic growth adversely.

3. Methodology

3.1 Model Specification

The primary objective of this study was to assess the impact of oil prices on FDI in Nigeria and Morocco. The data used was for the period 1990 – 2022 based on availability of data. Following Kinuthia and Murshed (2015) we adapt their model with slight modification. Kinuthia and Murshed's model is given as:

$$FDI = f(D, C, B, E) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where FDI stands for Foreign direct investment, D stands for gross national income, C stands for several cost factors such as real wage rate, cost of infrastructure development and financial development. B stands for trade openness while E stands for macroeconomic stability proxied by inflation rate, exchange rate and Institutions. With regards to the modifications made, Oil price and interest rate were added as part of the explanatory variables based on economic theory and the empirical literature while some variables were dropped due to availability of data.

Thus, the model, for the two countries, shall be specified as follows:

$$FDI = f(OP, IR, IF, FX, GDP\ ) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The model for this study is expressed as:

$$FDI_t = \beta_0 + \beta_1\, OP_t + \beta_2\, IR_t + \beta_3 IF_t + \beta_4 FX_t + \beta_5 GDP_t + U_t \ldots (3)$$

Where: FDI (measured by net inflow in current US$) represent the Foreign direct investment, OP (measured by global Crude Oil Prices) stands for the Oil Price, IR is the interest rates (measured by measured as a percentage of the principal amount borrowed, expressed over a specific period of time, usually on an annual basis), IF is the inflation rates (measured in percentage), GDP is real Gross Domestic Product measured in constant 2015 US$ and FX represents the exchange rates (this is measured as the value of a country's currency in respect to another country, in this case Dollar). By expressing the natural logarithm of the equation, we have:

Ln is the natural logarithm while U_t represents the error term.

$$lnFDI_t = \beta_0 + \beta_1\, lnOP_t + \beta_2\, IR_t + \beta_3 IF_t + \beta_4 FX_t + \beta_5 lnGDP_t + U_t \ldots\ldots\ldots\ldots\ldots (4)$$

Equation 4 examines the impact of oil price on foreign direct investment (FDI) in Nigeria and Morocco while controlling for other variables. All data used was sourced from World Bank (2022) world development indicator, Central Bank of Nigeria (2022) statistical bulletin and the Organization of the Petroleum Exporting Countries (2022) Annual statistical bulletin.

Augmented Dickey-Fuller (ADF) Unit root test was carried out to ascertain the stationarity of the variables for both countries. The results revealed that the variables were integrated of order one for Nigeria. Next, ARDL-Bounds cointegration test was carried out to detect the presence or

absence of a long run equilibrium relationship. Results of the cointegration test for Nigeria indicated the presence of a long run relationship hence an error correction model (ECM) was estimated for Nigeria. However, for Morocco, the unit root test indicated that the variables were a combination of I(0) and I(1). Next, Engle-Granger cointegration test was conducted. Results of the cointegration test for Morocco revealed the presence of a long run relationship hence an error correction model (ECM) was estimated for Morocco too.

4. Results and Discussion

4.1 Descriptive Analysis

Table 1 gives the descriptive statistics for Nigeria while Table 2 gives that of Morocco. The variables presented are FDI, Oil price, Gross domestic product, interest rate, inflation rate and exchange rate.

Table 1: Descriptive Statistics for Nigeria

Variables	FDI_NG	OP	IR_ NG	IF_ NG	FX_ NG	GDP_ NG
Mean	2.997	49.983	11.231	18.085	146.55	315.83
Max	8.841	109.45	23.242	72.836	425.98	535.30
Min	0.186	12.28	4.399	5.388	8.04	153.10
Std Dev.	2.614	31.319	4.320	16.108	116.64	143.00
Skewness	0.892	0.585	0.708	2.199	0.84	0.2098
Kurtosis	2.606	2.022	3.394	6.826	2.938	1.4122
Jarque-Bera	4.592	3.199	2.973	46.728	3.903	3.709

Note: FDI_NG represents Nigerian Foreign Direct Investment, OP Stands for Oil Price, IR_NG stands for Nigerian interest rate, IF_NG stands for Nigerian Inflation Rate and FX_NG represents Nigerian Exchange Rate, and GDP_NG represents the real GDP for Nigeria.
Source: Authors' computation, 2024.

Table 2: Descriptive Statistics for Morocco

Variables	FDI_MOR	OP	IR_MOR	IF_MOR	FX_MOR	GDP_MOR
Mean	1.693	49.983	4.861	2.536	9.154	79.93
Max	3.544	109.45	8.50	7.986	11.303	125.5
Min	0.165	12.28	2.48	0.303	7.750	43.30
Std Dev	1.107	31.319	1.982	2.152	0.851	28.41
Skewness	0.095	0.585	0.795	1.118	0.662	0.207
Kurtosis	1.625	2.022	2.130	2.995	3.034	1.579
Jarque-Bera	2.649	3.199	4.512	6.877	2.410	3.013

Note: FDI_MOR represents Moroccan Foreign Direct Investment, OP Stands for Oil Price, IR_MOR stands for Moroccan interest rate, IF_MOR stands for Moroccan Inflation Rate and FX_MOR represents Moroccan Exchange Rate and GDP_MOR represents the real GDP for Morocco.
Source: Authors' computation, 2024.

Table 1 shows that the average Foreign Direct Investment (FDI_NG) in Nigeria is approximately $2.997 billion, with a significant standard deviation of $2.614 billion, indicating high variability in the investment levels. The FDI ranges from $186 million to $8.84 billion, showing a wide disparity in FDI over the period studied. The mean oil price (OP) is about $49.98 per barrel, with a standard deviation of $31.31. This wide range (from $12.28 to $109.45) suggests considerable volatility in oil prices during the period. The mean interest rate (IR_NG) is 11.231%, with a standard deviation of 4.32%. The interest rates range from 4.39% to 23.24%, indicating fluctuations in monetary policy. The average inflation rate (IF_NG) is 18.10%, with a high standard deviation of 16.108%, reflecting considerable variability in inflation. The rates vary from a low of 5.39% to a high of 72.84%. The average exchange rate (FX_NG) is 146.55, with a significant standard deviation of 97.17. The rates range from 8.04 to 425.98, indicating substantial fluctuations in the currency value. For real GDP, the average was $315.83 billion.

Table 2 indicates that the average Foreign Direct Investment (FDI_MOR) in Morocco is about $1.693 billion, with a standard deviation of $1.107 billion, showing considerable variability. The FDI ranges from $165 million to $3.54 billion. The average interest rate (IR_MOR) in Morocco is about 4.86%, with a standard deviation of 1.982%. The interest rates range from 2.48% to 8.5%, revealing relatively moderate fluctuations. The average inflation rate (IF_MOR) in Morocco is 2.536%, with a standard deviation of 2.152%. The inflation rates range from 0.30% to 7.99%, showing lower variability compared to Nigeria. The average exchange rate (FX_MOR) is about 9.154, with a standard deviation of 0.851. The rates range from 7.75 to 11.30, indicating more stability in the currency value compared to Nigeria. For real GDP, the average was $79.93 billion.

In comparing the summary statistics from both tables, Nigeria has a higher mean FDI and a higher mean real GDP compared to Morocco. OPEC reference basket price was used for both countries. Nigeria has a higher average interest rate and greater variability compared to Morocco. This could indicate more aggressive monetary policies or economic instability in Nigeria. Nigeria experiences significantly higher and more variable inflation rates compared to Morocco, suggesting more economic volatility. Nigeria's exchange rate is much higher and more variable, indicating greater currency instability, while Morocco's exchange rate shows more stability. For Nigeria, the Kurtotsis values indicate that all variables have a flat distribution except interest rate and inflation rate which have more peaked distribution. For Morocco, the kurtosis values also indicate that all variables have a flat distribution except foreign exchange rate that has a more peaked distribution.

With regards to skewness, in both countries, the variables are all positively skewed.

4.2 Correlation Analysis

Table 3 and 4 present the Correlation matrix for Nigeria and Morocco respectively.

Table 3: Correlation Matrix for Nigeria

Variables	FDI_NG	FX_NG	IF_NG	IR_NG	OP_NG	GDP_NG
FDI_NG	1					
FX_NG	0.133124	1				
IF_NG	-0.310964*	-0.323347*	1			
IR_NG	-0.350796**	-0.661645***	0.435519**	1		
OP_NG	0.714951***	0.538703***	-0.382986**	-0.593043***	1	
GDP_NG	0.398611**	0.892309***	-0.380199**	-0.723170***	0.750926***	1

***, ** and * indicate significance levels at 1%, 5% and 10% respectively.

Note: FDI_NG represents Nigerian Foreign Direct Investment, OP Stands for Oil Price, IR_NG stands for Nigerian interest rate, IF_NG stands for Nigerian Inflation Rate, GDP_NG represents real gross domestic product and FX_NG represents Nigerian Exchange Rate

Source: Authors' computation, 2024.

Table 4: Correlation Matrix for Morocco

Variables	FDI_MOR	FX_MOR	IF_MOR	IR_MOR	OP_MOR	GDP_MOR
FDI_MOR	1					
FX_MOR	-0.087324	1				
IF_MOR	-0.510193***	-0.171116	1			
IR_MOR	-0.721678***	-0.061772	0.611209***	1		
OP_MOR	0.739933***	-0.409228**	-0.279645	-0.680303***	1	
GDP_MOR	0.745455***	0.004888	-0.473647***	-0.861389***	0.733138***	1

***, ** and * indicate significance levels at 1%, 5% and 10% respectively.

Note: FDI_MOR represents Moroccan Foreign Direct Investment, OP Stands for Oil Price, IR_MOR stands for Moroccan interest rate, IF_MOR stands for Moroccan Inflation Rate, GDP_MOR stands for real gross domestic product and FX_MOR represents Moroccan Exchange Rate.

Source: Authors' computation, 2024.

The correlation matrix for Nigeria provides insight into the association between Foreign Direct Investment (FDI_NG) and other economic variables. The correlation between FDI_NG and oil price (OP_NG) is 0.715, indicating a significant positive relationship. Real gross domestic product (GDP_NG) has a positive correlation with FDI_NG at 0.399, suggesting that a higher real GDP might be associated with higher FDI. In Table 4, the correlation between FDI_MOR and oil price (OP_MOR) is 0.740, indicating a significant positive relationship. This suggests that higher oil prices might be associated with increased foreign direct investment in Morocco. Although some of the explanatory variables are correlated, the post diagnostic tests revealed no evidence of multicollinearity.

4.3 Unit root Test and Cointegration Test

Table 5: Augmented Dickey-Fuller Test for Unit Root Result (Nigeria)

Variables	Level ADF t-stat.	1st Diff ADF t-stat.	Probability value	Order of Integration
LnFDI_NG	-1.825333	-5.436795	0.0001	I(1)
LnOP_NG	-0.913947	-4.936855	0.0004	I(1)
IR_NG	-2.646015	-4.594380	0.0011	I(1)
IF_NG	-2.156271	6.214154	0.0000	I(1)
FX_NG	1.966160	-3.903894	0.0055	I(1)
LnGDP_NG	-0.654394	-2.886185	0.0585	I(1)

Note: FDI_NG represents Nigerian Foreign Direct Investment, OP Stands for Oil Price, IR_NG stands for Nigerian interest rate, IF_NG stands for Nigerian Inflation Rate and FX_NG represents Nigerian Exchange Rate

Source: Authors' computation, 2024.

Table 6: Augmented Dickey-Fuller Test for Unit Root Result (Morocco)

Variables	Level ADF t-stat.	1st Diff ADF t-stat	Probability value	Order of Integration
LnFDI_MOR	-2.080479	-13.90787	0.0000	I(1)
LnOP_MOR	-0.913947	-4.936855	0.0004	I(1)
IR_MOR	-3.535049	------	0.0157	I(0)
IF_MOR	-2.535620	-2.952612	0.0516	I(1)
FX_MOR	-1.977101	-4.496858	0.0012	I(1)
LnGDP_MOR	-3.446193	-------	0.0191	I(0)

Note: FDI_MOR represents Moroccan Foreign Direct Investment, OP Stands for Oil Price, IR_MOR stands for Moroccan interest rate, IF_MOR stands for Moroccan Inflation Rate and FX_MOR represents Moroccan Exchange Rate

Source: Authors' computation, 2024.

The ADF test result for Nigeria in Table 5 revealed that all variables are I(1). For Morocco, the ADF test result in Table 6 showed that the variables were a combination of I(0) and I(1).

Table 7: Engle-Granger Cointegration Test result for Nigeria

Variables	Tau-statistic	Probability	z-statistic	Probability
LnFDI	-4.101135	0.2885	-26.37084	0.1227
LnOP	-2.458572	0.9181	-20.78568	0.3494
LnGDP	-2.730928	0.8503	-12.91777	0.8367
IR	-3.409805	0.5899	17.81757	1.0000
IF	-2.791682	0.8315	-11.27348	0.9028
FX	-2.335736	0.9398	-10.29894	0.9327

Source: Authors' computation, 2024.

Table 7 presents the cointegration test result for Nigeria. Based on the tau-statistic, the z statistic for all the variables involved and their corresponding probability values which is greater than 0.05, we conclude that all variables are cointegrated.

Table 8: ARDL-Bounds Cointegration test for Morocco

Test Statistic	**Value**	**K**
F-statistic	3.843888	5
Critical Value Bounds		
Significance	**Io Bound**	**I1 Bound**
10%	2.08	3
5%	2.39	3.38
1%	3.06	4.15

Source: Authors' computation, 2024.

Table 8 presents the ARDL-Bounds cointegration test result for Morocco. The F-statistic 3.84388 is greater than the lower I0 bound and the I1 bound at 5% level of significance hence, we conclude that all variables are cointegrated.

4.4 Error Correction Model for Nigeria and Morocco

Based on the cointegration results, this study proceeded to estimate an error correction model for both countries. The results are presented in Tables 8 and 9 for Nigeria and Morocco respectively.

Table 8: Result of the ARDL-Long run ECM estimated for Nigeria

Variables	Long run coefficients	Standard error
LnOP	3.279538**	1.376739
LnGDP	-3.068969	2.585327
IF	-0.083362**	0.034235
IR	0.304637***	0.162682
FX	0.002091	0.005634
C	4.267740	8.923537
	Shortrun coefficients	Standard error
D(LnOP)	1.339498*	0.380742
D(LnOP(-1))	-1.549903*	0.382802
D(LnGDP)	-12.937888*	2.899175
D(IF)	-0.061582*	0.011783
D(IF(-1))	0.031586*	0.009557
D(IR)	0.014922	0.030925
D(IR(-1))	-0.149820*	0.043674
D(FX)	0.003514	0.004114
ECT(-1)	-0.818336*	0.122132
R^2	0.849	
Observations	31	

***, ** and * represent significance levels at 10%, 5% and 1% respectively.
Source: Authors' computation, 2024.

Table 9: Result of the Error Correction model estimated for Morocco

Variables	Long run coefficients	Standard error
LnOP	1.273751**	0.483177
LnGDP	0.256394	0.669340
IR	0.114843	0.157857
IF	-0.017141	0.048705
FX	0.400030	0.218799
C	-9.803440**	4.186364
	Shortrun coefficients	Standard error
D(LnFDI(-1))	-0.364036*	0.096741
D(LnOP)	0.403647***	0.234108
D(LnGDP)	5.627854*	1.261378
D(IR)	0.471950*	0.111525
D(IR(-1))	-0.210112***	0.105886
D(IF)	-0.015125	0.036560
D(FX)	0.071346	0.098471
ECT(-1)	-0.878778*	0.151207
R^2	0.8855	
Observations	31	

***, ** and * represent significance levels at 10%, 5% and 1% respectively.
Source: Authors' computation, 2024.

4.5 Discussion of Finding

For both Nigeria and Morocco, the error correction terms, ECT(-1) in Tables 8 and 9 are 0.818 and 0.878 respectively. It indicates convergence to long run equilibrium. The implication of this is that the speed of adjustment from the short run to the long run equilibrium is approximately 82% and 88% respectively. It would take approximately (1/0.82) 1 year for Nigeria and (1/0.88) 1 year for Morocco for disruptions in foreign direct investment to fade out. In the short-run, global oil price has a positive and statistically significant impact on FDI in Nigeria and Morocco. A 1 % rise in oil price leads to a 1.34% rise in FDI in Nigeria while a 1% rise in oil price leads to a 0.4% rise in Morocco. This trend continues in the long run too for both countries. In the long run, a 1 % upward movement in the global oil price is associated with a 3.28% and a 1.27% upward jump in FDI in Nigeria and Morocco respectively. From this result, we can deduce that global oil price makes a bigger impact in Nigeria. This could be attributed to Nigeria's membership of OPEC. These findings are similar to those of Mahmood and Alkhateeb (2018) and Ademakinwa and Omokanmi (2017).

Real GDP had a negative and significant impact on FDI in Nigeria but a positive and significant impact on FDI in Morocco. A 1% rise in real GDP causes FDI to fall by 12.94% in Nigeria but causes FDI to rise by 5.63%. A likely reason for this is that while both countries still have room to grow, Morocco seems to have much bigger space for growth hence the reason for the positive association. These findings are similar to those of Elheddad (2016).

Inflation rate has a negative and significant impact on FDI in Nigeria in both the short and long run. A unit increase in inflation rate leads to a 6% and 8% decline in FDI in the short and long run respectively. Inflation rate was found to be insignificant in the case of Morocco. The policy implication of this is that the Central bank of Nigeria together with the Federal ministry of finance must strive to keep the inflation rate low

Interest rate has a positive and significant effect on FDI in Morocco but only in the short run while in the case of Nigeria, it is positive and significant but only in the long run. What this means is that high interest rates attract foreign investors into the country.

5. Conclusion and Recommendations

The distinct findings for Nigeria and Morocco emphasize the importance of country-specific factors in shaping FDI patterns. In Nigeria, Oil price, real GDP, inflation rate and interest rate are critical determinants of investment, suggesting that policies aimed at reducing inflation rate and managing the interest rate could influence investment flows. For Morocco, oil price, real GDP and interest rate are the main determinants; hence managing interest rates could be crucial for attracting FDI. Overall, the study underscores the need for policymakers in both countries to consider the unique economic conditions and investor perceptions when formulating strategies to enhance FDI. By understanding and addressing the specific factors that drive or hinder investment, countries can better tailor their economic policies to attract and retain foreign capital, ultimately supporting economic growth and development.

Based on the findings of this study, the following recommendations are proposed to enhance Foreign Direct Investment (FDI) in Nigeria and Morocco: It is recommended that the government of Nigeria together with the Central Bank of Nigeria should implement contractionary policies that can help to reduce inflation because it serves as a disincentive for investors. In the case of Morocco, it is recommended that the government of Morocco should provide a conducive environment that will stimulate economic growth because increased economic growth attracts FDI. Furthermore, the central bank of Morocco should maintain stable interest rates.

References

Ademakinwa, A. R., & Omokanmi, O. J. (2017). Oil price shocks and foreign direct investment (FDI): Implications for economic growth in Nigeria (1980-2014). *Journal of Economics and Sustainable Development, 8*(4), 170-177.

Arbia, A., Sobhi, K., Karim, M., & Eddaou, M. (2023). FDI, information and communication

technology, and economic Growth: Empirical evidence from Morocco. *Advances in Management & Applied Economics, 13*(6), 189-214.

Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: Is Africa different? *World Development, 30*(1), 107-119.

Ayodele, T., & Sotola, O. (2014). *China in Africa: An evaluation of Chinese investment* (Working paper series). Initiative for Public Policy Analysis.

Bawa, S., Abdullahi, I. S., Tukur, D. S., Barda, S. I., & Adams, Y. J. (2020). Asymmetric impact of oil price on inflation in Nigeria. *CBN Journal of Applied Statistics, 12*(1), 85-113.

Carcovic, M., & Levine, R. (2002). Does foreign direct investment accelerate economic growth? In H. T. Moran, E. Graham and M. Blomstrom (eds.), Does FDI promote development? Washington, DC: Institute of International Economics.

Central Bank of Nigeria (2022). *Annual statistical bulletin.* www.cbn.gov.ng

Dunning, J. H. (1980). Towards an eclectic theory of international production: Some empirical tests. *Journal of International Business Studies, 11*(1), 9-31.

Elheddad, M. (2016). Natural resources and FDI in GCC countries. *International Journal of Business and Social Research, 6*(7), 12-22.

Gong, X., Wen, F., He, Z., Yang, J., Yang, X. & Pan, B. (2016). Extreme return, extreme volatility and investor sentiment. *Filomat, 30*(15), 3949-3961.

Ibrahim, U. A., & Mohammed, Z. (2020). Assessing the impact of capital market development on economic growth: Evidence from Nigeria. *IOSR Journal of Economics and Finance, 11*, 1-15.

Kari, F., & Saddam, A. (2014). A long-run dynamic analysis of FDI, growth and oil export in GCC countries: An evidence from VECM Model. *Canadian Social Science, 10*(1), 76-82.

Kinuthia, B. K., & Murshed, S. M. (2015). FDI determinants: Kenya and Malaysia compared. *Journal of Policy Modelling, 37*(2), 388-400.

Kudaisi, B.V. (2014). An empirical determination of foreign direct investment in West Africa countries: A panel data analysis. *International Journal of Development and Economic Sustainability, 2*(2), 19-36.

Mahmood, H., & Alkhateeb, T. T. Y. (2018). Foreign direct investment, domestic investment and oil price nexus in Saudi Arabia. *International Journal of Energy Economics and Policy, 8*(4), 147-151.

Mehta, A. M. (2014). Searching for hills among plateaus, mountains and plains; understanding determinants of economic growth in Pakistan. *Journal of International Business and Economics, 2*(2), 83-90.

Morisset, J. (2000). Foreign direct investment in Africa: Policies also matter. *Transnational Corporation, 9*(2), 107-126.

Moshiri, S., & Kheirandish, E. (2024) Global impacts of oil price shocks: The trade effect. *Journal of Economic Studies, 51*(1), 126-144.

Muhammad, A., & Syed, A. A. (2012). Impact of oil prices on country's economy: A case study South Asian Countries. Available at *SSRN* 2147341.

Muhammad, S. (2021). Oil Price and foreign direct investment in Nigeria: New evidence from structural breaks and a nonlinear analysis. *CBN Bullion, 45*(4), 58-66.

National Bureau of Statistics (2024). Annual Statistical Report. Available online at: www.nigerianstat.gov.ng

Nocke, V., & Yeaple, S. (2008). An assignment theory of foreign direct investment. *The Review of Economic Studies, 75*(2), 529-557.

Olure, B. A., Gbadebo, S., & Ajiteru, T. (2015). Falling oil price, exchange rate volatility and macroeconomic variables in Nigeria. *Journal of Investment and Management, 4*(1), 25-33.

Organization of the Petroleum Exporting Countries (2022). *Annual Statistical Bulletin.* Available online at www.opec.org

Razmi, M. J., & Behname, M. (2012). FDI determinants and oil effects on foreign direct investment: evidence from Islamic countries. *Advances in Management & Applied Economics, 2*(4), 261-270.

Saidu, M. T. (2024). Does price of oil and inflation have an impact on the GDP of Africa's largest net oil importers? Evidence from a non-linear heterogeneous panel ARDL. *OPEC Energy Review, 48*(1), 36-47.

Shafi, K., & Liu, H. (2014). Oil prices fluctuations and its impact on Russian's economy. *Asian Journal of Economic Modelling, 2*(4), 169-177.

Sucubasi, B., Trenovski, B., Imeri, B., & Merdzan, G. (2021). The effects of FDI on domestic investments in Western Balkans. *Shs web of conferences, 9*, 07059.

Tala, L., & Hlongwane, T. M. (2023). How oil price changes affect foreign direct investment inflows in South Africa? An ARDL approach. *International Journal of Economics and Financial Issues, 13*(2), 115-123.

Tambari, I., Failler, P., & Jaffry, S. (2024). Understanding the interplay: Oil price and renewable energy investment in Africa's net oil importing and net oil exporting countries. *Resources Policy, 91,* 104875.

Tumala, M. M., Olufemi, A. I., Omotosho, B. S., & Baruwa, O. A. (2012). Survey of foreign assets and liabilities in Nigeria 2011 report. *CBN Journal of Applied Statistics, 3*(2), 1-8.

UNCTAD. (2009). *Investment policy review for Nigeria*. New York and Geneva: United Nations Conference on Trade and Development.

UNCTAD. (2022). *World investment report.* New York and Geneva: United Nations Conference on Trade and Development.

Udoh, M. D. (2014). The impacts of foreign direct investment (FDI) and oil export on economic growth in Nigeria from 1970 - 2011. *Research on Humanities and Social Sciences. 4*(24), 113-123.

Wong, K. N., Goh, S. K., & Hooi, H. L., (2015). Foreign direct investment, oil prices and global financial crisis: Evidence from Singapore. *Journal of Applied Economic Sciences, 10*(4), 494-504.

World Bank. (2016). Annual Report 2016, World Bank publication. Available online at: www.thedocs.worldbank.org

World Bank. (2022). World Development Indicators 2022, World Bank publication. Available online at: www.databank.worldbank.org