Journal of Global Economics and Business **January 2022, Volume 3, Number 8, 57-81**
ISSN: Print 2735-9344, Online 2735-9352

CAUSAL EFFECT BETWEEN BALANCE OF PAYMENT AND FOREIGN DIRECT INVESTMENT IN OIL AND GAS SECTOR IN NIGERIA

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Abstract

The study examined the effect of balance of payment on foreign direct investment on the oil and gas sector in Nigeria. The study used ex-post facto research design and the population is made up of 5 oil and gas foreign investors in Nigeria. The sample size is the 5 oil and gas foreign investors. The study relied on reports from Central Bank of Nigeria for secondary data. The study employed various procedures in analysing the data such as correlation matrix, unit root test, co-integration and vector error correction model. The study found that causality ran from balance of payment to multinational corporations in Oil and Gas sector in Nigeria in terms of foreign direct investment which implied that balance trade openness caused increase in the inflow of FDI in Oil and Gas sector of Nigeria. This implied that balance of payment attracted more inflow of FDI in Oil and Gas sector in Nigeria. The study recommended that balance of payment policy in Oil and Gas should be formulated to encourage inflow of foreign direct investment in the sector in Nigeria. Government of Nigeria should seek for the assistant of Organization of the Petroleum Exporting Countries (OPEC) to direct investors in Oil and Gas to refine the oil and gas in Nigeria without exporting the raw material to their home country.

Keywords: *Balance of Payment, Current Account, Capital Account, Foreign Direct Investment.*

DOI: 10.31039/jgeb.v3i8.41

1. Introduction

The balance of payment policy of Government may also affect or attract foreign direct investment in any developed or developing countries of the world. The capital account and current account realized through effective policy of balance of payment may attract foreign direct investment inflows in any country ((Mohammed & Abdulmajid, 2018). Government in Nigeria engaged in balance of payment policy (expenditure reducing and expenditure

switching). Also, foreign direct investors have invested (equity capital, reinvestment earning and intra company loans) in Nigeria by influencing the balance of payments and general welfare of Nigeria, Government have also issued out balance of payment policy that foreign direct investors obeyed in carrying out their business in oil and gas. Yet, it is uncertain whether balance of payment affect foreign direct investment in Nigeria or foreign direct investment affect balance of payment.

From the extant literature, (Manpreet et al (2012); Siddiqui et al (2013); Danish et al (2013); Funda and Nesli (2015); Clainos and Rose (2015); Mohd (2016); Muhammad et al (2016); Kesaobaka et al (2017)). It is clear that majority were conducted on balance of payment and foreign direct investment from Asia, Africa, North America, South America, Antarctica, Europe and Australia but none of these studies used Oil and Gas Sector to address the problem. It is also realized that none of the mentioned studies used a period that covered 48 years and included 2017 in their studies.

The study is restricted to effect of balance of payment on foreign direct investment: evidence from Oil and Gas Sector in Nigeria covering the period of 1970-2017 (48years). The reason for choosing this period is that, it is within the period when Nigerian Oil and Gas Industry was discovered in 1956 by the Shell Group and the sector was largely dominated by Multinational Corporations until the early 1990s when Nigerian companies began to make a foray into the industry. The period is also chosen because of indigenization policy which started in 1972 with "the Nigerian Enterprises Promotion Decree" (NEPD) and the decree imposed several restrictions on FDI entry. The period is also chosen because government of Nigeria reduced the tax rate from 45% to 40% (from 1987 –1991), while between 1992 -1995, the rate was reduced to 35%, it was finally reduced to 30% from 1996 to date, to stimulate investment. It also includes foreign direct investment (equity capital, reinvest earnings and intra-company loans) and balance of payment (expenditure reducing and expenditure switching)

Hypothesis is stated as:

H_0: Balance of payment has no causal effect with foreign direct investment in Oil and Gas sector in Nigeria.

Concept of Balance of Payment

The concept of balance of payment was discussed in 1960s and 1970s by Mundell (1961), Fleming (1962) and Johnson (1972). It was an improvement on the Keynesian model of income

determination in an open economy. Balance of payments account is composed of four main elements namely; current account balances, capital and financial account balances, balancing items (Errors and Omissions) and reserves balances. Current account balances are further subdivided into trade balances, income balances and transfers balances. The balance of payment records transaction of goods, services and income, changes in ownership and other changes in an economy's holding of monetary gold, Special Drawing Rights (SDRs) and claims on and liabilities to the rest of the world (Imoughele, & Ismaila, 2015).

The conceptualize balance of payment to implies transaction of cash or provision of cash, receipt of real resources, goods, services, income, changes in claims and liabilities for a specific account period reflecting the capital account and current account of foreigners who transact business with the home country to ensure that they comply with financial requirement of the host country.

According to Marsha (1994), two types of policy measures are used in dealing with balance of payments problems. These are expenditure switching measures and expenditure reducing policies. Expenditure reducing policies refer to fiscal policy (conducted by changing government expenditure and /or taxes) and monetary policy which refers to changes in money supply, which in turn affect interest rate. Expenditure switching policies refers to devaluation (depreciation) and revaluation (appreciation) of the country's currency.

Concept of Foreign Direct Investment

Hymer (1960) was the first economist who considered foreign direct investment as the defining feature of the multinational corporation and tried to explain it in terms of its relative advantages vis-à-vis other forms of foreign operations and Foreign Direct Investment is the distinctive feature of multinational enterprises (or transnational corporations); a theory of foreign direct investment is a theory of multinational enterprise as an actor in the world economy (Hennart, 1982).

According to Uzoka (2012), foreign direct Investment is the inflow of foreign income into a particular economy through investment which involves multinational corporations. Njeru (2013) notes that FDI is the cross-border investment in which resident in one economy (the direct investor) acquires a lasting interest in an enterprise in another economy (the direct investment enterprise). OECD (2008) note that FDI is category of investment that reflects the objective of establishing a lasting interest by a resident enterprise in one economy (direct

investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor.

World Bank (2016) asserts that foreign direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. As well as the equity that gives rise to control or influence, direct investment also includes investment associated with that relationship, including investment in indirectly influenced or controlled enterprises, investment in fellow enterprises (enterprises controlled by the same direct investor), debt (except selected debt), and reverse investment.

The study conceptualize foreign direct investment to mean investment by foreign firms or affiliate into the host country by transferring their capital, knowledge, expertise and technology into the host country in order to generate profit and paying certain economic obligation such as taxes and also reinvesting their capital, providing equity capital to the host country and ensure good intra company loans.

Equity capital constitutes the value of the MNC's investment in shares of an enterprise in a foreign country. Equity capital consists of non-cash, which again is in the form of tangible and intangible components such as technology fee, brand name etc. It comprises equity in branches, all shares in subsidiaries and associates (except non-participating preferred shares that are treated as debt securities) and other capital contributions (Srivastava, 2003). Equity Capital is the foreign direct investor's purchase of shares of an enterprise in foreign country or direct provision of machinery (Ângelo, 2010).

Reinvested earnings consists of the sum of direct investor's share (in proportion to direct equity participation) of earnings not distributed as dividends by subsidiaries or associates, and earnings of branches not remitted to the direct investor. According to IMF guidelines (2008), these reinvested earnings are a part of FDI inflows, and should be recorded as inflow on the capital account of host country's balance of payments.

Reinvested earnings or profit reinvestment of multinational subsidiaries refers to subsidiaries reinvesting their own retained earnings into the existing operations. Retained earnings are a type of internal equity financing, that is, internally generated financing sources (Nguyen & Rugman, 2015).

Inter-company debt transactions include the short and long-term borrowing and lending of funds – including debt securities and suppliers' credits – between direct investors and subsidiaries, branches and associates. In sum, direct investment capital transactions include those operations that create or liquidate investments as well as those that serve to maintain, expand or reduce investments (Srivastava, 2003).

Corruption

Corruption is defined as the abuse of public office for private gain, dishonesty for personal gain, dishonest exploitation of power for personal gain; depravity; and extreme immorality (Usman, 2011). Lawal and victor (2012) argue that corruption is the biggest problems Nigeria has a bane to good governance, which has invariably translated into corrosive and perpetual poverty among the citizenry. This is as a result of the fact that the money that is supposed to be expended on social needs and infrastructures to engender development circulates among and within the few privileged and thereafter, taken abroad form investment. Corruption involves the injection of additional but improper transactions aimed at changing the normal course of events and altering judgments and positions of trust (Ojukwu & Shopeju, 2011).

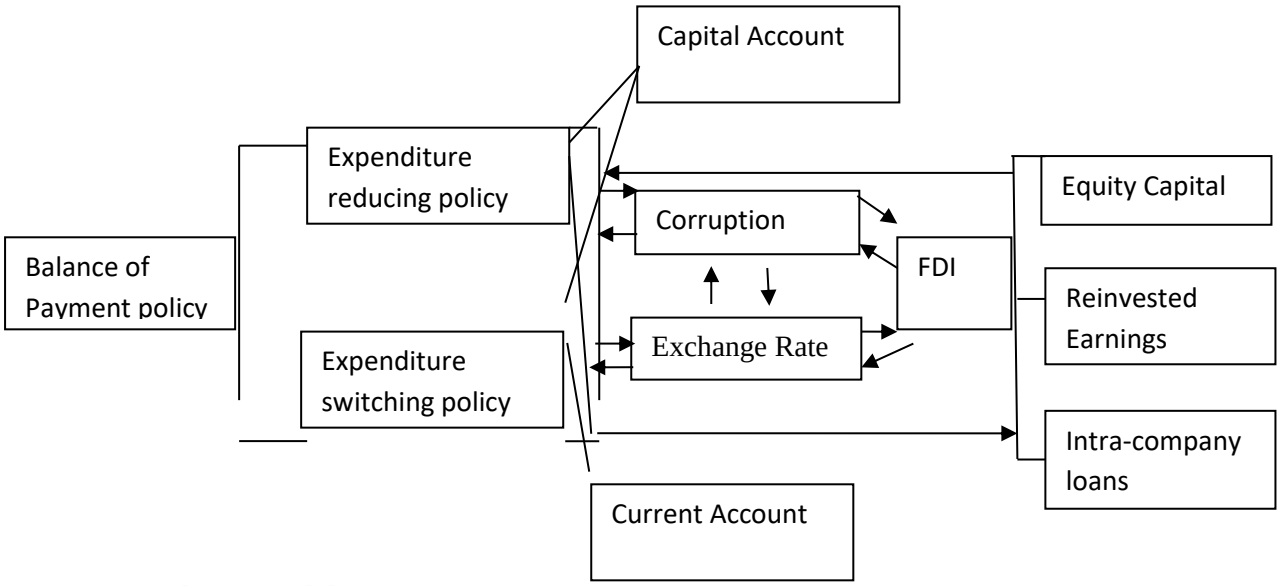
Exchange Rate

Exchange rate is domestic currency price of a foreign currency, matter both in terms of their levels and their volatility. Exchange rate is the rate at which the naira is converted to another currency (Becks, 2011). Exchange rate is the rate at which the naira is converted to the US dollar. Asher (2012) opines that exchange rate is used to determine the level of output growth of the country. It is also the price of one currency in terms of another (Enekwe et al 2013).

2. Conceptual Framework

The model also believes that government trade policies in terms of balance of payment allowed systematic record of all economic transactions between the residents of the reporting country and residents of foreign countries during a given period of time and this policy of reporting the all transitions of the FDI inflow into the host country attract foreign investors in the economy. The foreign direct investors knowing well that their transactions are noted and secure, invest their equity capital, reinvestment earnings and intra-company loans in order to repeatedly attract government trade policies on balance of payment, in terms of expenditure reducing policy and expenditure switching policy. The current account covers all transactions that

involve economic values and occur between resident and non resident entities while capital account is capital transfers and acquisition/disposal of non-produced and non financial assets inflow into the host country.



Source: *Researcher's Model, 2021.*

Empirical Studies

Siddiqui et al (2013) investigated relationship between FDI and current account (CA) in Pakistan using the Johansen-Juselius cointegration technique and the Granger causality test. The study results indicate that FDI and CA are cointegrated and thus exhibit a reliable long run relationship. The Granger causality test findings indicate that the causality between FDI and CA is uni-directional. However, there is no short run causality from FDI to CA and vice versa. Therefore, as a policy implication that FDI inflows may cause to the deterioration of the balance of payments in the long run should be taken into account when policy makers decide to implement policies to attract foreign investors.

Funda and Nesli (2015) studied the effect of foreign direct investment on balance of payment for turkey and reveal short and long term relationships between 1998.Q1- 2013.Q4 current account deficit figures and FDI, GDP for Turkey, GDP for EU, Real Interest Rate (RFO), Real Effective Exchange Rate (REDK) variables. As a result, while REDK, GDP_AB, RFO have positive effect on current account deficient, GDP_TR and DYY have negative effect on it.

The study is very good since it study the long run and short run relationship between the variables. The study did not indicate the statistical tools adopted in solving short run and long

run relationship problems. The study did not indicate the software statistical packages such as e-view, SPSS and Stata etc use in analyzing the data.

Mohd (2016) studied the impact of Foreign Direct Investment Inflows on Capital Account of India's Balance of Payments using secondary data collected from Department of Industrial Promotion and Policy (DIPP), Government of India; UNCTAD Database and Reserve Bank of India database while FDI Inflows data from DIPP and UNCTAD while the Balance of Payments data from RBI database. Thus, the annual data from 1991 to 2000 was transformed into the data from 1991-1992 to 1999-2000. The found that variable Foreign Direct Investment Inflows and the component of balance of payments Capital Account Balance (KAB) shows that there is an impact of Foreign Direct Investment Inflows on Capital Account Balance. However, the difference being, there is bi-directional causality between Capital Account Balance and Foreign Direct Investment Inflows. This means that Foreign Direct Investment Inflows impact the Capital Account Balance in India as well as the Capital Account Balance also impacts the Foreign Direct Investment Inflows.

The above studied use bidirectional causality to estimate that Foreign Direct Investment Inflows impact the Capital Account Balance in India as well as the Capital Account Balance also impacts the Foreign Direct Investment Inflows. The study adopted a good statistical tool to carry out the research but failed to indicate the software statistical package use in the study. The study could have use one type of sources of data but the adopted many sources of data which is wrong.

Danish et al (2013) investigated relationship between FDI and current account (CA) in Pakistan using the Johansen-Juselius cointegration technique and the Granger causality test. The study results indicate that FDI and CA are cointegrated and thus exhibit a reliable long run relationship. The Granger causality test findings indicate that the causality between FDI and CA is uni-directional. However, there is no short run causality from FDI to CA and vice versa. They found that policy implication that FDI inflows cause deterioration of the balance of payments in the long run.

The above study used uni-directional to study the variables. Johansen-Juselius cointegration technique and Granger causality test were use in the study which was perfect in the study in order to indicate the short run and long run relationship between the variables. The study did not state the software statistical package used.

Manpreet et al (2012) investigated the relationship between Foreign Direct Investment (FDI) and current account in the context of India. Using the Toda-Yamamoto (T-Y) granger causality technique for the period 1975-2009, our results indicate that FDI and current account are co-integrated in the long run. There is evidence of unidirectional causality from FDI to current account.

Kesaobaka et al (2017) examined the impact of current and capital accounts on foreign direct investment in South Africa. The cointegration test results reveal the presence of a long run economic relationship amongst the variables implying that they share a common linear. Furthermore, foreign direct investment has a significant and positive relationship with current account and capital account in the short-run. GDP, which was, introduced as a control variable in the system showed an insignificant and negative relationship with foreign direct investment

Manpreet, et al (2012) and Kesaobaka et al (2017) study used short run and long run relationship and indicated how the variables are co-intengrated in the study. The above studies did not state the software statistical package of e-view, SPSS and Stata. They also failed to indicate the population of the study and the sample size of the study as well as sample size determination.

Clainos and Rose (2015) investigated the impact of foreign direct investment on Zimbabwe's balance of payments for the period 1981-2013. The study utilises a linear model that takes foreign direct investment, the current and capital accounts as explanatory variables, while the balance of payments is the dependant variable. The study found out that foreign direct investment, current and capital accounts have significant influence on the balance of payments of Zimbabwe. The conclusion is that foreign direct investment has a huge impact on the balance of payments.

The study used linear model of regression to indicate the relationship to indicate the relationship between the dependent and independent variable. The study could use co-integration and Granger as well as vector error correction model to study the bidirectional relationship between the dependent variable and independent variable.

Muhammad et al (2016) evaluated the impact of foreign direct investment (FDI) on trade components (exports and imports) of Pakistan using annual data from 1975 to 2013. Engle and Granger two step cointegration method was used for conducting the analysis. This method was adopted because all the variables of interest were non stationary in level and stationary at first

difference. Results provide evidence of long run cointegrating relationship as well as short run relationship between FDI and trade components. A rise in FDI causes both exports and imports to increase.

The study is current and the period of study is from 1975 to 2013. The population of the study is not indicated in the study. The study failed to indicate the sample size of the study. The study used Granger and co-integration to determine the long run relationship between the variables. The Granger is used to test the direction of the causality.

Ownership, Location, and Internalization Paradigm Theory

This theory was first developed by Behrman and Grosse (1990) and Lecraw and Morrison(1991), but extends their analysis by incorporating the home country. The so-called OLI model is where OLI stands for ownership, location, and internalization. The framework is essentially based on the interaction between the O advantages of firms and the L advantages of countries and how these, in turn, affect the organisation of cross border, value-added activities (that is, the I advantages of MNEs) and the L advantages of countries and how these, in turn, affect the organisation of cross border, value-added activities (that is, the I advantages of MNEs). The schema contains eight components, or steps, which may precede some course of action, or set of actions, taken by governments.

The schema is essentially static in its approach. It assumes that, at a given moment of time, and within a particular global economic environment: MNEs possess a set of O-specific advantages and constraints and, according to their goals, and their opportunity sets and organisational structures, will pursue certain strategies to advance those goals. Similarly, nation states possess a set of L-specific advantages and constraints which, according to their goals and opportunity sets, will lead them to take certain actions. Such actions – as directed towards MNEs or to one or more of their affiliates – may range from the setting up of institutions designed to reduce information asymmetries and/or moral persuasion, through a gamut of more formal entry requirements and performance regulations to the outright prohibition of FDI in certain sectors, and/or allowing foreign investors only a minority equity stake in indigenous firms.

In terms of the eclectic paradigm, they believes that the answer rests, first, in the distinctive O-specific advantages of MNEs and the way in which they augment or combine these assets with the indigenous resources, competences and intermediate products of the countries in which they are producing; and second, in the knowledge that, by their actions, governments may be

able not only to influence the O advantages of their own MNEs (or potential MNEs), but also the attractiveness of their own L specific assets to inward investors. Governments, by their abilities to create new, or modify existing incentive structures, and influence market conditions and/or the efficiency of hierarchies, may also affect the capacity and willingness of both their own and foreign firms to internalise cross-border markets and to conclude collaborative alliances with foreign firms.

The theory further state that juxtaposition between the O advantages and strategies of MNEs and the L advantages and strategies of nation states is potentially of economic value to both parties. The actions of both governments as well as MNEs are fashioned by the interplay between the formal and informal institutions that support their activities. In the case of governments, the formal institutions include the different administrative systems employed, such as the institutions to enforce property rights, competition and the support of entrepreneurship and innovation. The incentive systems include the monetary and non-monetary rewards and penalties to support desired behaviour, including fiscal incentives, public recognition and fines.

The shared norms and values include a common understanding of the purpose and role of the government, the extent of individual rights and responsibilities, as well as the role of the family in economic and social life. Less directly, they also include many other aspects of national culture, including the values attached to equality, solidarity and honesty. In the case of the MNE, the formal institutions include, for example, specific structural forms (for example, a matrix organisation), the adoption of international accounting standards, and forms of corporate governance (for example, a one- or two-tier board). As in the case of governments, incentive systems include the monetary and non-monetary rewards and penalties that support desired behaviour, including bonuses, promotion and disciplinary proceedings. The values and norms reflect not only the belief systems and customs of the home country of the MNE, but also those of its key decision makers, any shared values and norms that exist within the organisation, as well as those of the host countries in which the MNE operates (Dunning & Sarianna, 2008).

The net income resulting from MNE activity is distributed between the investing companies and the countries within which they operate. This issue is usually of less concern to capital-exporting countries as the surplus earned by their own MNEs (net of the taxes collected by the host country) accrues to it. But it may critically affect the judgment of the host country of the economic viability of an inbound investment. Here, the balance of the negotiating strengths

and weaknesses of the two parties enters the picture. The outcome will affect the final structure and content of MNE activity and the actions taken by governments (Dunning & Sarianna, 2008).

Government action to affect the level and pattern of value-added activities by MNEs will, first and foremost, be a function of the interaction between the configuration of the L-specific assets, including institutional assets, under their jurisdiction, and the O-specific advantages of MNEs. Second, it will depend upon the government's evaluation of the likely impact of this interaction on their economic and other goals, as well as on the strategies they adopt to achieve these goals. Third, the ability of governments to modify their actions successfully depends, first, on the extent to which these actions are perceived by MNEs to advance or hinder their global or regional corporate objectives, and second, on the bargaining power of governments *vis-à-vis* that of the MNEs (Dunning & Sarianna, 2008).

3. Methodology

The study used ex-post facto research design or after-the-fact study. The population of this study included all the joint venture foreign direct investment in Oil and Gas sector in Nigeria. According to Nigerian National Petroleum Corporations, 2017, the population of this study is five (5) Oil and Gas foreign direct investors in Nigeria, as shown in the table below:

Table 3.1: Population of the Study

Name of the Company	Country of origin	Joint Venture Name
Royal Dutch Shell	Britain/Dutch	Shell Petroleum Development Company of Nigeria Limited (SPDC), usually known simply as Shell Nigeria
Chevron	America	Chevron Nigeria Limited (CNL)
Exxon-Mobil	America	Mobil Producing Nigeria Unlimited (MPNU)
Agip	Italia	Nigerian Agip Oil Company Limited (NAOC)
Total	French	Total Petroleum Nigeria Limited (TPNL)
Texaco (now merged with Chevron)	America	NNPC Texaco-Chevron Joint Venture (formerly Texaco Overseas Petroleum Company of Nigeria Unlimited)

Source: *Nigerian National Petroleum Corporations, 2017.*

The sample size of this study also included the five (5) Oil and Gas foreign direct investors (Multinational Corporations) in Nigeria. This is used because the study considered aggregate data of the sector and the listed foreign direct investors. The study used convenience sampling technique, since the elements of such a sample are picked only on the basis of convenience in terms of availability, reach and accessibility.

The study used secondary method of data collection. However, the study relied on reports from Central Bank of Nigeria for the data. The study used various procedures in analysing the data ranging from descriptive statistics, correlation matrix, unit root test, co-integration and Vector Error Correction Model.

Table 1: Measurement of Variables

S/N	Variables	Measurement
1.	FDI	Equity Capital+ Re-invested Earnings+ Intra Company Loans (Foreign Direct Investment from abroad) (UNCTAD, 2012)
2	Balance of payment policy	Capital account plus current account (Lipsey & Chrystal, 2007)
3	Controlled variables	Corruption and Exchange rate (self decision based on the suitability of the work)
4	Exchange Rate	Exchange rate (Becksm 2011)
5	Corruption	Corruption Perception Index (Abramo, 2008; Razafindrakoto & Roubaud, 2010; Rose & Misher, 2010)

Source: *Author Computation, 2021.*

To test the causality and co-integration between balance of payment and FDC, at first, the stationary properties of the time series is checked by unit root test using Dickey Fuller test, it is based on the following regression equation with a constant and a trend in the form as follows:

$$\Delta Y_t = \beta_{1+} \beta_2 + \delta Y_{t-1} + \alpha i \sum_{i=1}^{m} \Delta Y_{t-1} + \varepsilon_t \text{----------} 1$$

Where Δ is the first difference operator and ε_t is the stochastic error term and δ is the number of lags in the variable. The null hypothesis (H_0) of a unit root indicates that the coefficient of Yt-1 is zero while alternative hypothesis (H_1) implies Yt is stationary. If the null hypothesis is rejected then the series is stationary and no differencing in the series is essential to establish stationarity or the null hypothesis of non-stationary is rejected if the ADF test statistic in absolute term is more than the critical test value at 5% level of significance.

The study asserted that if the data is found to be co-integrated in the model, the researcher carried out Granger test which is used to determine the strength and the direction of causality between variables.

Vector Error correction model explains the speed of adjustment towards the long run equilibrium. Initially, if the variables confirm the existence of co integration, then the Vector Error Correction Model (VECM) is estimated.

The study also noted if cointegration among variables solely shows a long run equilibrium relationship; in fact, there may be disequilibrium in the short run. To investigate the short run dynamics among the concerned time series variables, Vector Error Correction Model (VECM) is developed in this study. Vector Error Correction Model (VECM) is used to correct the short-run disequilibrium among the variables in the model and also to reconfirm the direction of causality of the variables in the model.

The mathematical model of this study is stated below

Y = a+bx ----------2

y = dependent variable

a= intercept or constant,

b = the coefficient and

x =independent variable

However, this mathematical model is expressed as a functional model based on the objectives of this study. The study incorporated trade openness and foreign direct investment as showing below:

Model: Balance of Payment and Foreign Direct Investment (Represented by BP and FDIOG)

BP= f(FDIOG,CPI,EXR) ---------- (3)

The model is also expressed as:

FDIOG =F(BP,CPI,EXR) ---------- (4)

All the series in models are expressed in a log- linear form from equation 3 & 4 into equation 5 and 6. This is an account that log linear specification provides consistent and reliable result. The further model specifications with log are stated below:

lnBP= (lnFDIOG+lnCPI+ lnEXR) ----------(5)

lnFDIOG = (lnBP+CPI+ EXR) ----------(6)

Using the above models, the Vector Error Correction Model specifications for hypothesis one are presented below:

$$\Delta lnFDIOG = \alpha_0 + \alpha_1 \Delta lnFDIOG_{t-1} + \alpha_2 lnBP_{t-i} \alpha_3 lnCPI_{t-i} + \alpha_4 lnEXR_{t-i} + Ect - 1 + \varepsilon_{t1} \quad \ldots\ldots 7)$$

$$\Delta lnBP = \beta_0 + \beta_1 \Delta lnBP_{t-1} + \beta_2 lnFDIOG_{t-i} + \beta_3 lnCPI_{t-i} + \beta_4 lnEXR_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (8)$$

$$\Delta lnCPI = \beta_0 + \beta_1 \Delta lnCPI_{t-1} + \beta_2 lnBP_{t-i} + \beta_3 lnFDIOG_{t-i} + \beta_4 lnEXR_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (9)$$

$$\Delta lnEXR = \beta_0 + \beta_1 \Delta lnEXR_{t-1} + \beta_2 lnCPI_{t-i} + \beta_3 lnBP_{t-i} + \beta_4 lnFDIOG_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (10)$$

From the above mathematical equations, Δ is changes, Ln is Natural Logarithms, FDIOGt is the aggregate foreign direct investment in oil and gas sector for the sample period, BPt is the aggregate balance of payment for the sample period, CIPt is the aggregate corruption perception index for the sample period and EXRt is the aggregate exchange rate for the sample period. BP_{t-1} is balance of payment, EXR_{t1} is the exchange rate while CIP_{t-1} is the corruption perception index. α_0 and β_0 are the constants, α_1 and β_1 are the coefficient of regressions, Ect is the error correction term, ε_{t1} and ε_{t2} are error term, and t is time in all the models 1 -3 presented above. The error term, ε_t is incorporated in the equations to cater for other factors that may influence the variables.

Table 2: Descriptive Statistics of the Variables

	FDIOG	BOP	EXR	CPI
Mean	1.30E+10	6508.771	62.11624	10.34167
Median	922321.4	607.5500	21.88610	1.800000
Maximum	27380.74	1124157.	305.3000	28.00000
Minimum	623.6100	-563483.9	0.505000	0.770000
Std. Dev.	4.84E+10	203028.9	74.88245	10.90002
Skewness	4.219725	3.029540	0.983229	0.499249
Kurtosis	20.65914	21.64367	3.283971	1.480237
Jarque-Bera	766.1390	768.5981	7.895200	6.613355
Probability	0.000000	0.000000	0.019301	0.036638
Sum	6.23E+11	312421.0	2981.579	496.4000
Sum Sq. Dev.	1.10E+23	1.94E+12	263546.9	5584.092
Observations	48	48	48	48

Source: E-Views 9.0 Output, 2021.

The table showed that Foreign Direct Investment in Oil and Gas (FDIOG) has a mean value (average) of 1.30 over the period of review. The table revealed that median value of 922321.4 which showed that the absence of outliers in the values. It has a maximum value of 272980.74 which was obtained in the year 2017. It also has a minimum value of 623.61; it was obtained in the year 1970, due to import substitution policy of 1970. The variable has a standard deviation of 4.84 which suggested that the value of the observation was spread across its mean value of 1.30. The skewness statistics of the variable was 4.219725, suggesting that was positive, while the kurtosis statistics of 20.65914 suggested that the observation was leptokurtic in distribution. The Jaque-Bera statistics 766.1390 with a probability value of 0.00 suggested that the FDIOG was not normally distributed at 5% level of significance and it was log to correct it to normal.

Table 2 above indicated that Balance of Payment (BOP) which allowed foreign direct investment in Oil and Gas Sector into Nigeria has a mean value of 6508.771 over the period of study and a median value of 607.5500. It has a maximum value of 1124157 which was obtained in the year 2004 due to expenditure reducing policy of the federal government of Nigeria. The variable has a minimum value of -56348.91 which was obtained in the year 2002 due to expenditure reducing policy of the federal government of Nigeria. The standard deviation value of 203028.9 which suggested that the observation was spreads around the mean value of

6508.771. The observations were positively skewed as suggested by the skewness statistic, 3.02954. The kurtosis statistics 21.64367 suggested that the observations form a leptokurtic distribution. The Jaque-Bera statistic that 768.5981 with a probability value of 0.00 suggested that the BOP was not normally distributed at 5% level of significance and it was log to correct it to normal.

Table 2 above showed that Exchange Rate (EXR) which is the determinant of both Government Trade Policies and foreign direct investment in Oil and Gas sector in Nigeria, has a mean value of 63.11 over the period of study and a median value of 21.88. It has a maximum value of 305.30 which was obtained in the year 2017 due to economic recession following a sustained drop in Gross Domestic Product (GDP) of about 2.06 percent in the second quarters of 2016, after falling by 0.36 percent in the previous three months. The Oil Sector continued to decline but at a slower pace and GDP annual growth rate in Nigeria was very low to 0.5% in 2017. The variable has a minimum value of 0.505 which was obtained in the year 1973 due to Indigenization Decrees of 1972 and 1974 which put the commanding heights of the Nigerian economy in the hands of Nigerians within the context of nationalism and there was low exchange rate since Nigerian were involved much in foreign exchange. The standard deviation value of 74.88245 which suggested that the observation were spreads across the mean value of 63.11. The observations were positively skewed as suggested by the skewness statistic value of 0.983229. The kurtosis statistics value of 3.283971 suggested that the observations form a leptokurtic distribution. The Jaque-Bera statistic value of 7.895200 with a probability value of 0.00 suggested that the EXR was not normally distributed at 5% level of significance and it was log to correct it to normal.

Table 2 above showed that Corruption which measured by Corruption Perception Index (CPI) which is the determinants of both Government Trade Policies and foreign direct investment in Oil and Gas Sector in Nigeria has a mean value of 10.34167 over the period of study and a median value of 1.80. It has a maximum value of 28.00 which was obtained in the year 2017 due to high level discovery of looted funds by public officers and politicians in Nigeria. The variable has a minimum value of 0.77 which was obtained in the year 1993 due to President Banbangida Military Government Economic Package- of introducing Structural Adjustment Programme (SAP) and at this time Nigerian Government was on the movement to high corruption. The standard deviation value of 10.90 which suggests that the observation were spreads across the mean value of 10.34167. The observations were positively skewed as

suggested by the skewness statistic value of 0.499. The kurtosis statistics value of 1.48 suggested that the observations form a leptokurtic distribution. The Jaque-Bera statistic value of 6.61 with a probability value of 0.03 suggested that the CPI was not normally distributed at 5% level of significance and it was log to correct it to normal.

Table 3: Correlation Matrix between FDIOG and Balance of Payment

	FDIOG	**BOP**	**EXR**	**CPI**
FDIOG	1.000000			
BOP	-0.003819	1.000000		
EXR	0.605833	- 0.129463	1.000000	
CPI	0.425952	-0.096233	0.884182	1.000000

Source: Researcher's computation using, E-views 9.0, 2012.

Table 3 showed the results of the correlation matrix by indicating Foreign Direct Investment in Oil and Gas (FDIOG), and showing that it has a weak negative correlation (0.003) with Balance of Payment (BOP). Foreign Direct Investment in Oil and Gas has a strong positive correlation 0.60 with Exchange Rate (EXR). However, Foreign Direct Investment in Oil and Gas (FDIOG) has a weak positive correlation 0.42 with Corruption Perception Index in Nigeria. Balance of Payment (BOP) has a weak negative correlation (0.12) with Exchange Rate (EXR). Balance of Payment (BOP) has a weak negative correlation (-0.09) with Corruption Perception Index. Exchange Rate (EXR) has a strong positive correlation 0.88 with Corruption Perception Index in Nigeria. These correlations indicated that the variables were appropriately selected and thus, there was no problem of multicollinearity.

Table 4: Unit Root Test on the Variables

Variables	**Level of stationarity**	**ADF-statistic**	**Significant values 1%, 5%, 10%**	**Order of Integration**	**Prob.(5%)**
LFDIOG	constant (exogenous): Trend	6.630399	-3.58, -2.92, -2.60	1(1)	0.0000*
LEXR	constant (exogenous): Trend	5.523439	-3.58, -2.92, -2.60	1(1)	0.0000*
LCPI	constant (exogenous): Trend	9.008773	-3.58, -2.93, -2.60	1(1)	0.0000*
LBOP	constant (exogenous) Trend	7.934580	-3.58, -2.93, -2.60	1(1)	0.0000*

Source: Author's Computation using E-view 9.00

Probability values are indicated by *

Table 4 showed that LFDIOG, LEXR, LCPI, and LBOP were not stationary at level and second difference but stationary at first difference due to the fact that the values of its ADF test statistics at first differences were greater than their corresponding critical values at 5% level of significance. Thus, LFDIOG, LEXR, LCPI, and LBOP were stationary at first difference. Also, the variables were integrated of order one 1(1) which signify that cointegration test, granger test and vector Error Correction Model test were appropriately and adequately needed in this study.

Table 5: Cointegration Results between Balance of Payment and Foreign Direct Investment in Oil and Gas in Nigeria

Variables	Trace Stat	Critical Value	Max-Eigen Stat	Critical Value	Probabilities
LFDIOG & LBOP	27.50683	15.49471	27.29213	14.26460	0.0005/0.6431
LBOP & LEXR	30.17970	15.49471	23.95045	14.26460	0.002/0.0126
LBOP & LCPI	15.78351	15.49471	10.16451	14.26460	0.0452/0.0178

Source: Researchers computation using E-views 9.0, 2021

The results of the Johansen and Josulius co-integration test presented in table above found that there was a long-run relationship between the variables at 5% level of significance. The result of the Trace test statistic indicated that there were two co-integrating equation at 5% level of significance for LBOP & LEXR and LBOP & LCPI. Similarly, the result of the Max-Eigen test also suggested that there were two co-integrating equation at 5% level of significance for LBOP & LEXR and LBOP & LCPI. It was also found that Trace test statistic indicated that there was one co-integrating equation at 5% level of significance for LFDIOG & LBOP. In the same vein, the result of the Max-Eigen test also suggested that there was one co-integrating equation at 5% level of significance for LFDIOG & LBOP. Therefore, there was a long-run relationship between Foreign Direct Investment in the Oil and Gas sector and Balance of Payment in Nigeria.

Causal Relationship between Balance of Payment and Foreign Direct Investment in Oil and Gas in Nigeria

Table 6: Vector Error Correction Model

Error Correction:	**D(LFDIOG)**	**D(LBOP)**	**D(LEXR)**	**D(LCPI)**
CointEq1	-0.007771	-0.231580	-0.000760	-0.007699
Standard Error	(0.01969)	(0.85070)	(0.00371)	(0.00755)
t-statistics	[0.39473]	[-5.53076]	[-0.20477]	[-1.01910]
CAUSALITY				
Causality runs from LBOP to LFDIOG Causality runs from LBOP to LEXR Causality runs from LBOP to LCPI Causality runs from LCPI to LEXR Causality runs from LCPI to LFDIOG Causality runs from LFDIOG to LEXR				

Source: Researcher's computation using E-views 9.0, 2018.

Table 6 revealed the vector error correction results which showed about 7% of short run disequilibrium was corrected by Foreign Direct Investment in Oil and Gas Sector (LFDIOG) in each period. The table revealed that 23% of short run disequilibrium was corrected by Balance of Payment of the Federal Government of Nigeria in each period and 0.076% of short run disequilibrium was corrected by Exchange Rate (LEXR) in each period. Similarly, about 7% of short run disequilibrium was corrected by Corruption in terms Corruption Perception Index in each period.

From the table, causality runs from LBOP to LFDIOG which implied that Balance of Payment causes increase in Multinational Corporations (FDI) in Oil and Gas sector. This implies that Balance of Payment affect Foreign Direct Investment in Oil and Gas sector in Nigeria. Other findings were that Balance of Payment attracted Exchange Rate, Balance of Payment attracted or caused Corruption, Corruption caused Exchange Rate increase, Corruption attracted or influence Foreign Direct Investment inflow in Oil and Gas sector while Foreign Direct Investment in Oil and Gas sector influence Exchange Rate in Nigeria.

4. Discussion of Findings

In table 5, the study found that causality ran from balance of payment to multinational corporations in Oil and Gas sector in Nigeria in terms of foreign direct investment which implied that balance trade openness caused increase in the inflow of FDI in Oil and Gas sector of Nigeria. This implied that balance of payment attracted more inflow of FDI in Oil and Gas sector in Nigeria. The study was in tandem with the findings of Ahmed (2011) who found that causality runs from balance of payment (current account) to foreign direct investment. The finding was in disagreement with the findings of Danish et al (2013); Manpreet et al (2012) and Muhammad et al (2016) who found that causality runs from foreign direct investment to balance of payment.

The finding in table 5 was that stability of the balance of payments depends on the value of imports and exports, on the degree of efficiency and product competitiveness, on the price level, international services and the international markets position. Deficit and surplus of the balance of payment influenced or attracted inflow of foreign direct investment. In the case of oil and gas sector was recorded with a deficit in the balance of payments, the national economy was incapable of providing exports corresponding to the amount of national currency existing abroad. Currency holders abroad would sell the amounts in the currency market, and where the currency supply exceed the demand then the currency depreciates. Alternatively, when the state achieves a surplus of the balance of payments, the foreign currencies can be used to buy oil and gas from abroad. Therefore, the currency demand is higher than the supply and thus appreciates (Iavorschi, 2014).

The study also found that balance of payment influence exchange rate which implies that balance of payment (current account and capital account) attract or influence the exchange rate and returned ensure inflow of multinational corporations in Oil and Gas sector (FDI) in Nigeria. An increase (depreciation) in the exchange rate stimulates an increase of exports, diminishes the imports and determines a tendency to stabilize the balance of payments. However, decrease (appreciation) in the exchange rate discourages exports, stimulates an increase in imports and generates instability in the balance of payments. Foreign direct investments have an influence over the evolution of the exchange rate: the more the currency of a state is stable, the higher the foreign investments flow is (Iavorschi, 2014).

The study realized in table 5 that balance of payment attracted corruption in oil and gas sector in Nigeria. Balance of payment in terms of current account and capital account which after analyzing may result to either surplus or deficit. If it is deficit it means that oil and gas product may be imported into Nigeria and if it is surplus, the reverse is the case to other countries of the world. The process of exporting and importing oil and gas even when there are refineries in Nigeria attracts corruption since the multinational corporations used this process to export the product to their own country and refine the product as well as importing the product to Nigeria at very higher prices.

The study found that in table 4.14 that corruption attracted exchange rate in Nigeria. The more society is corrupt and is rated by the corruption perception index as high, the exchange rate tend to increase drastically. The exchange rate in Nigeria was stablised in 1970s and was more than dollars but when corruption was pronounced in Nigeria, the exchange rate from Naira to Dollar is very high in Nigeria.

The study found that foreign direct investment in oil and gas sector in Nigeria influenced exchange rate. Foreign investors do not invest more in a country where the exchange rate is low but invest in a country where exchange rate is high. However, the reason why foreign direct investment attracted exchange was that they were investing more in Nigeria and this cause continuous increase in exchange rate each year and month.

The study found out that there was a long run relationship between FDI in Oil and Gas and balance of payment in Nigeria. Also, there was a long run relationship between balance of payment (BOP) and exchange rate in Nigeria on one hand, and between balance of payment (BOP) and corruption on the other hand. The study is in line with the findings of Atif, Nabila, Mahnuz and Rooma (2012) and Mihaela (2014) who found that there is a long run relationship between multinational corporations (FDI) and Balance of payment. The reason for each finding was that Nigerian Government has a long terms contract with multinational corporations and even when into partnership with multinational corporations in Oil and Gas to extract the oil and export it to home country of the multinational corporations and import back to sell to the host country – Nigeria at very higher price.

The study also found that there was a negative association between multinational corporations in terms of foreign direct investment in Oil and Gas sector in Nigeria and balance of payment. The study is in disagreement with the findings of Eirc (2013) and Mohd (2016) who found a

positive association between multinational corporations in terms of foreign direct investment and balance of payment. The findings from the reviewed of extant literature was not in line with the findings of this analysis. The reason for this finding is that multinational corporations in terms of foreign direct investment have negative association with balance of payment as Ozoigbo and Chukuezi (2011) noted that there are four main reasons for this assertion. Most of the imported technologies came under the industrial property system of restrictive patterns and license. This is a very sensitive barrier for Nigeria. The implication of this is that Nigerians cannot copy and internalize these technologies even if they have the capacity. Because of this, Nigeria has to make do with dependent development, which has several deleterious economic consequences. The MNCs jealously guard the technological know-how of their technologies by way of refusing to use of competent staff. The MNCs instead use mere technicians who are at the last rung of productive process and simply assemble together what they knew not how it was produced. By implication Nigerians cannot learn from the technicians the intricacies involved in the production of the material or product. Another point of skillful deceit by the MNCs is the fact that where qualified and competent indigenous staff are to be exposed to the technological know-how of a type of production. Sometimes the type of technology they are exposed to is so sophisticated that they are mesmerized by it. In some cases, the high capital that may be needed simply embarrasses the nation in that they cannot afford it instead they prefers to forget about it. The MNCs increase the mal-distribution of income in Nigeria and other less developed countries. The case of oil workers earning in a month what some federal civil servants earn in a year does not augur well with the development of the nation. This step creates a class-conscious society, which does not help development as such. Therefore, the type of technology that the MNCs imported into the country is the one that serves the few urban elite because only they have the resources to get at it while the generality of the populace continue to face stark underdevelopment.

The study also found a strong positive association between multinational corporations in terms of foreign direct investment in Oil and Gas sector in Nigeria and exchange rate. The reason is that more multinational corporations investment in Nigeria may increase foreign exchange rate. Multinational corporations do not invest more in a country that has less exchange rate but investment more in a country that has high exchange rate.

The study found that there was weak positive relationship between foreign direct investment in Oil and Gas and corruption in Nigeria. Also, there was a weak negative relationship between

balance of payment and exchange rate in Nigeria. It found that there was a weak negative relationship between balance of payment and corruption in Nigeria. It found that there was a strong positive relationship between exchange rate and corruption in Nigeria.

5. Conclusion and Recommendations

The study concluded that balance of payments has been influencing or attracting (foreign direct investment in Oil and Gas sector in Nigeria since 1964, fifty years after Amalgamation of Nigeria in 1914 Nigeria was at the height of BOP surplus among other proving trends and this attracted foreign direct investment in Nigeria. It was the world's largest producer of groundnuts, palm oil, and petroleum was making its way into the national account. For a long period now, Nigeria has suffered from an undiversified export basket and a somewhat inflexible import basket, as 95% of all exports are made up of oil and gas which attract FDI in it in Nigeria. As a result, the inflow of export receipts is highly dependent on energy prices and the performance of one main sector and the foreigners are attracted to invest in Oil and Gas sector in Nigeria. In spite of the strong domestic demand for foreign goods and despite high oil prices in 2015 till date, as well as low production due to bombing in the Niger Delta region, Nigeria's trade balance still attracted FDI to invest more in the oil and gas sector in the country.

The study recommended that balance of payment policy in Oil and Gas should be formulated to encourage inflow of foreign direct investment in the sector in Nigeria. Government of Nigeria should seek for the assistant of Organization of the Petroleum Exporting Countries (OPEC) to direct investors in Oil and Gas to refine the oil and gas in Nigeria without exporting the raw material to their home country. This is expected to result in Nigeria's exports competitiveness in the sector, that will lead to increase in exports and investment, which will further increase the foreign exchange earnings, and improve the Gross Domestic Product (GDP) of the nation as well as reducing import of oil and gas in Nigeria. Organization of the Petroleum Exporting Countries (OPEC) should intensify the process of regular monitoring of the operation of FDI to ensure compliance with prudent guidelines and promote transparency in conducting their activities in Nigeria. The government should also move with Organization of the Petroleum Exporting Countries (OPEC) to embark on efficient and effective policy by making exports costly and imports cheaper, thus, leading to a favourable balance of payments position in oil and Gas sector in the country.

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