Crude Oil Price Fluctuations and Nigerian Balance of Payments 1987-2017

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Abstract

Until we realized that oil is a blessing to a nation in disguise and put our heads in the same basket to move this country to the promised land when the proceed from oil will no longer be shared among capitalists but used for development of other sectors to boost export and strengthen balance of payments. Crude oil prices and balance of payment are two key elements of the Nigerian economy because of the over-dependence on the oil sector. Obviously, our economy depends on the oil sector and neglects other sectors of the economy (agricultural, manufacturing, and service) which makes the economy volatile to shock in oil price fluctuations. This leads to the syndrome of Dutch disease because oil revenues are perceived as the only hope for prospering our economic growth and development. This study investigates oil price fluctuations and Nigerian Balance of Payments using time series data spanning from 1987 to 2017 and employed Auto-regressive Distributive Lag (ARDL) model. It was discovered in the study that there exists a long run relationship between the balance of payments and the crude oil prices in Nigeria within the study period. Furthermore, the study revealed that in the long run, crude oil prices and exchange rate are the determinants of the balance of payments while the short run dynamics pointed out that the past value of inflation rate and crude oil prices are what determine the balance of payment direction in the short run. The study, therefore, recommends that the appropriate authorities should consider diversification of the economy export base from oil, exchange rates review, inflation control measures as well as interest rate monitoring so as to get the best balance of payments position.

Keywords: ARDL, Balance of Payments, Crude oil price, Nigerian economy.

JEL Classification: E32, E42,

1. Introduction

The Nigerian economy over the time is basically a mono economy that solely relies on single exports of crude oil products (Odularu, 2008) and has no actual effect on the world oil prices, meanwhile it is greatly vulnerable to global oil price uncertainty as an importer of refined petroleum products and heavy dependence on crude oil revenue (Sanya, 2015).

Since the oil boom era till date, there has been negligence to the robust agrarian resources and light manufacturing bases in support of morbid reliance on petroleum resources (Busayo, 2013). According to Broni-Bediako, Onyije, and Unwene, (2018), revenue from petroleum due to increasing prices of crude oil led to a recurrent decline of other sectors. Performances in the economy have led to a defect which is known as the "Dutch Disease Syndrome" which has been identified as-the structural economic imbalances arising from bungling of oil income that brings about adverse influence on the economy, thereby leaving the nation's non-oil outputs to gain lower prices in the highly competitive global market.

After the oil boom era, when the Nigerian economy benefited from a steady (BOP) surplus, her balance of payments has been fluctuating between positions of surplus and deficit. Nigeria has recorded well over fifteen deficits in her balance of payments account CBN (2010; 2011). So many reasons have been suggested for the factors causing balance of payments disequilibrium in the economy. According to Gbosi (2002), these reasons are due to fluctuations in the prices of crude oil, low improvement in non-oil export, high rate of imported goods and services, persistent decline in the country's foreign exchange and ineffectual industrial sector.

The recurrent importance of the creation of substitutes to fossil-fuel energy such as shale gas, solar, bio-energy and wind in the developed nations (such as the US) has reduced the demand for crude oil. Crude oil prices climaxed at $114.21 per barrel in 2012, this was followed by a descending trend that pushed the price to fall drastically to less than $54.41 per barrel from $114.21 per barrel between the periods of mid-2014 and early 2015 and currently at $33.62 p/bbl in the earliest parts of 2016 (BP Statistical Review of World Energy, 2015).

The topical nose-diving in crude oil prices indisputably charged the biggest economy on the African continent into an economic quicksand with devastating consequences on some of its main macroeconomic indicators. General price levels started to rise steadily while the currency exchange rates kept depreciating, bringing about enormous economic snags among the populace which in due course resulted in fiscal and economic disequilibrium. Interestingly, as crude oil prices kept dropping at the global market, the domestic pump price of petroleum products in Nigeria suffered distortions and upward review (Busayo, 2013; Ishmael, Mathew & Park, 2017). The problem is made complicated by years of corruption in the Nigerian oil sector, thereby worsening certain situations in the country which include poverty, unemployment, processing and distribution costs, social conflicts in oil-producing areas leading to pipeline vandalism, oil theft, kidnapping of expatriate oil workers, interference in the demand and supply of petroleum products (Eneji, Mai-Lafia, &Nnadi 2016).

This study will respond to two research questions: Do crude oil price fluctuations influence Nigeria balance of payments and what are the responsible factors for the dynamics of these fluctuations?

Nigerian balance of payments is vulnerable to crude oil price. Statistics show that from the period 1970 to 2014, Nigeria has witnessed thirty-one years of BOP disequilibrium (CBN, 2017). The first half of 1970's marking the era of oil innovation and exploration, the

economy enjoyed BOP surplus as the balance of payments rose from N46.6m in 1970 to N3, 102.20millon in 1974 nevertheless in 1975 it decreased to N157.5million. But 1976 to 1778 were marked by BOP deficit (Olisah, 2018).

This era of 1970's was governed by military regime and the balance of payments was in surplus. There was also institutional quality proxied by contract intensive within this period which money was on the increase in interest rate liberalization policy of the Structural Adjustment Programme (SAP) of 1986. One would have expected improvement in the ordnance to the anticipation of the theory. With the BOP, but that was not the outcome as BOP's trend continued to be deficit. Since 2005, Nigeria's balance of payments has been recording deficit; this may be partly due to high levels of interest and inflation rates experienced in the economy (Olisah, 2018).

The current account balance grew with an increase in oil revenue trends reflecting a rise in importation rate as oil proceeds grew. Current account balances dropped by 22.7% in 1982 and further by 14-6% in 1983 arising from a decline in oil earnings and restrictions in global trade through the stabilization act implementation, current account balances dropped by. (CBN, 2001).

According to CBN Annual Report (2011), there was an enhancement in the Foreign Sector in 2011 with a projected inclusive BOP surplus of N47.1 billion in deviance to an initial deficit of N1, 491.5 billion in 2010. The Current Account Surplus dropped to N1, 336.8 billion, which was lesser than the N1, 993.0 billion documented in 2010. This expansion was accounted for by the expanded deficits of 20.0 and 18.8 per cent in income accounts as well as services.

Balance of payments (BOP) position as at first quarter of 2018 endorsed that the country's external position remained strong but susceptible to crude oil and gas market. The temporary BOP figures for first part of 2018 published by the CBN showed that the overall BOP for Nigeria showed a surplus of US$ 7.32 billion in first quarter 2018. A viable BOP helps to sustain stability in the forex market and lessen exchange rate risk. Nigeria's influxes into the current account were dominated by crude oil and gas exports, accounting for 93.28 % of all exports and 64.46 % of all inflows (Sunday, 2018).

It is imperative when you discuss crude oil price fluctuations and BOP, the twin moves proportionately because during oil boom, BOP used to be favorable for developed countries that make good use of the proceeds from sells of crude revenue but in developing countries like Nigeria the reverse is the case. The huge revenues are spent on imported luxury goods instead of manufacturing goods thereby creating an unfavorable balance of payments. This is one of the reasons why crude oil is seen as a Dutch disease because most of the oil nations today suffer from extreme poverty, high unemployment, corruption, high crime rate, crises, terrorist, low growth rate, unfavorable BOP, etc. with decaying and backward economy. These occur because of primitive accumulation of oil revenue by the capitalist, who prefers the country should be under their nose. Oil was supposed to serve as a vehicle for development but it was sabotaged from the beginning (Otaha, 2012; Eneji et al 2016).

Crude oil is an exhaustible asset which makes it unreliable for sustainable development of the Nigerian economy. Therefore, reliance of the Nigerian economy on crude petroleum

earnings as the main basis of income is able to raise doubt about the elasticity of the impact of crude oil price fluctuations on macroeconomic unpredictability (such as interest rates, inflation rates, BOP, as well as exchange rate, among others) in the country. The Nigerian oil sector is a key sector because oil has been the life wire of all economic activities in Nigeria, and as such the need arises for the formulation of a suitable and needed exploration as well as marketing policies for the sector. Thus, the importance of assessing the comparative effects of oil prices on the country's BOP (Babatunde and Adekunle 2017).

There are studies relating to oil prices and balance of payments such as, Udede (2015), Alhassan and Kilishi (2016), Eme (2016) and Eneji, Mai-Lafia and Nnadi (2016) but their study coverage is limited and the method of analysis used did not capture the short and long run dynamics which seem to have created a gap. This study will examine the crude oil price fluctuations on Nigeria's BOP through an extended span of time using the Auto-Regressive Distributive Lag (ARDL) model to explore the dynamics of crude oil price fluctuations on BOP in Nigeria and determinants of the BOP. This study also endeavors to close some of the prevailing openings in the existing research on Nigerian economy.

Therefore, the study is structured into five sections. After the introductory section which acts as the precursor of this study, four other sections follow viz; literature review, methodology, discussion of results, and conclusion and policy implications.

2. Literature review
Ishmael et al (2017) define crude oil prices as the measurement of the spot value of several barrels of oil quoted in the global oil market. These barrels of crude oil comprise Brent Blend, New York Mercantile Exchange (NYMEX), West Texas Intermediate (WTI), OPEC basket price and futures price, among others. The Nigerian crude oil belongs to the OPEC Basket Price group which is the average price obtained from Nigeria which comprises other economies such as Mexico, Saudi Arabia, , Indonesia, Venezuela, Dubai, and Algeria. OPEC Basket price is lower in price compared to Brent Blend and WTI due to lower quality of oil.

Busayo (2013) conceptualizes crude oil price to be the value in dollars of a barrel of crude oil in the global market. Oil price fluctuation refers to the swings of instabilities in oil price over a duration or deviance from a benchmark. Therefore, crude oil price fluctuation is an extent of the fluctuations (i.e. incline and decline) of the worth of oil across a duration. Numerous factors have been identified as causes of oil price fluctuation. These factors include demand and supply of crude oil, OPEC decisions, and civil unrest. It is due to these fluctuations in the value of crude oil as well as Nigeria over-reliance on petroleum revenue that many economists raise concern about the future of the economy (Mgbame, Donwa & Onyeokweni 2015).

According to Jhingan (2010) "the BOP is a technique of itemizing payments and receipts in a country's transaction with other countries". Cohen sees the balance of payments as an instrument which shows a county's trading positions, variations in its net position as a foreign borrower or lender as well as changes in its official reserve holdings with other countries of the world.

The balance of payments can be defined as a methodical record of fiscal and financial relations for duration of time-say a year-between a country and other nations. These transactions involve provision of receipts and payments to the rest of the world (Imoisi, 2012).

Generally, transactions are classified into credit and debit entries; payments by a non-resident to a country are categorized as credit items while expenses by the country to other countries are classified as debit items. Fundamentally, the foreign sector of an economy is separated into capital and current accounts. The capital account comprises of direct investments and portfolio investment, being its short or long term, and capital transfers, whereas the current account includes all entries of current transactions, which are transactions that involve either of import or export of visible as well as invisible products, they also consist of services and merchandise (Imoisi, 2012).

Therefore, a worthwhile BOP position is seen as a current account position that could be an equitable development, debt servicing capability, growth forecasts and also macro-economic variables. To attain external as well as internal stabilities, balance of payments can be funded on a maintainable basis through movement of capital in its net worth on footings that are well-matched with the view that the BOP is associated with other elements in an equilibrium analysis (Imoisi, 2012).

Busayo (2013) investigated the impacts of oil prices, interest rates and external reserves on exchange rate volatility in Nigeria. The study used co-integration tests and VECM over the period 1970-2011 and finding showed that an average variation in crude oil price gave rise to about 2.8% variation in exchange rate instability in Nigeria. It was recommended that the authorities needed to expand from the petroleum sector to other segments of the economy so that the effects of crude oil prices on the economy would be reduced. Udede (2015) analyzed the influence of monetary policy on the Nigerian BOP over the statistical time series data from 1981-2015 using the OLS multivariate regression. BOP was used as the explained variable, while M2, interest rate, exchange rate and GDP as the explanatory variables, the cointegration test showed a sign of significant long run integration among the variables; Such that, M2 and exchange rate had positive coefficients while GDP and interest rates had negative coefficients but not significant in the case of interest rate. Alhassan and Kilishi (2016) evaluated the effects of oil price instability on instability of three key macroeconomic indicators (interest rate, exchange rate and real GDP,) which are highly volatile using the asymmetric and symmetric model. The symmetric model was outperformed by the asymmetric and the price of crude oil was a major cause of macroeconomic instability in Nigeria. They thus concluded that in handling macroeconomic instabilities in Nigeria, more credence should be shown to the asymmetric model. Consequently, necessity arose for the diversification of the bases of Nigerian economy among other sectors like the industrial sector as well as the agricultural sector so as to reduce the over-dependence of the economy on crude oil.

Eme (2016) employed the Vector Auto Regression VAR model in investigating the dynamic association between crude oil price shocks and key macroeconomic indicators in Nigeria from 1970 to 2007. The investigation highlighted the asymmetric impacts of crude oil price shocks; for example negative and positive oil price shocks significantly upturn inflation and

also openly raises real national income via greater export incomes. However, portions of this gain were understood to be offset by losses from lesser demand for exports largely owing to the economic slump underwent by trading associates. The results indicated a robust positive link between positive oil price variations and real state expenditures. Surprisingly, the outcome pinpointed a negligible power of oil price fluxes on growth of industrial output. Additionally, the "Dutch Disease" condition was perceived through significant appreciation of the real effective exchange rate. In conclusion, the study recommended the need for diversification of government revenue from petroleum earnings, decline in monetization of petroleum income (fiscal discipline), increase in the rate of saving of proceeds from crude oil booms in the long run to tackle the issue of fluctuations of oil in the long run. Eneji, Mai-Lafia, and Nnadi (2016) examined the impact of crude oil price instability on macroeconomic indicators and sustainable development in Nigeria from 1990-2015 using the Vector Auto Regression (VAR) Model. The findings of the research showed that unemployment, real GDP, interest rates, balance of payments and exchange rates were substantially affected by the volatility of crude oil prices in Nigeria. Adverse shocks in the global petroleum market significantly influenced price volatilities. Furthermore, there were build-ups of inevitable inflationary pressures and significantly reducing government expenditures as well as revenues all owing to increasing importation. Therefore, diversification and a new source of energy was recommended.

Babatunde and Adekunle (2017) examined the relationship between exchange rate volatility and Nigeria's balance of payment from 1985-2015 using the Johansen co-integration test for long-run relationships, while both ARCH and GARCH were also employed to test volatility of the exchange rates. Findings of the study showed that there was no long-run relationship between BOP position and the exchange rate in the Nigerian economy during the period under review, while the coefficient of the ARCH effect was found to be statistically significant but the GARCH effect was not. The study recommended exchange rate devaluation and should be adopted by monetary authorities so as to boost and attract foreign investors which could bring about advancement in the BOP positions. Ishmael et al (2017) employed the Johansen system co-integration, the Granger Causality Test and VECM systems to examine the influence of variations in petroleum prices on economic progression in Nigeria through 1986 to 2015. The examined time series attributes displayed the presence of co-integration between the variables while the empirical effects pointed that the error correction term was negatively signed and were statistically significant in all the models.

Akatugba (2018) examined the effect of exchange rate volatility on BOP Problem in Nigeria through 1980-2016 employing the Generalized Autoregressive Conditional Heteroscedesticity Model statistical techniques; GARCH (1, 1) using BOP as the explained variable and exchange rate, real gross domestic product; Inflation rate, exchange rate volatility as explanatory variables. The findings asserted that exchange rate maintains a positive association with BOP. Meanwhile real GDP, inflation rate and volatility of exchange rate were inversely related to balance of payments. Therefore government should give more credence to exchange rate volatility in Nigeria. In addition, government should encourage export diversification so that a surplus balance of trade would be maintained which would make Nigeria naira to be strong against other currencies and also avoid further

depreciation of domestic currency in the future. Broni-Bediako, Onyije, and Unwene (2018) employed the Ordinary Least Square (OLS) techniques to examine the economic consequences of crude oil price instability on developing economies, using Nigeria as a case study through the periods of 1990-2015 regressing crude oil price volatilities on key macroeconomic elements. The result of the findings affirmed that changes in oil price (volatility) had effect on macroeconomic variables, although at capricious magnitude. This result showed that crude oil was the key source of foreign exchange income in Nigeria. Following the outcome of the study, it was resolved that volatility of crude oil price has positive relationship with the macroeconomic indicators examined. Also, instability in price determines the rate of interest, BOP, FDI as well as GDP. Diversification of the economic base was suggested as a solution so as to improve export production and improve the economy.

Finally, Olisah (2018) analyzed the impact of institutional quality on BOP position in Nigeria in the period 1970 to 2016 adopting the error correction mechanism. The result displayed a positive link amongst institutional quality proxied by contract intensive money (CIM) and BOP in Nigeria. The coefficient of CIM was significant at five per cent level with the value of 1.25. This implied an improving effect of good institutional quality on Nigeria's BOP position. The coefficients of exchange rate, price level and interest rate were -0.88, (0.25) and 0.24, respectively. This portended that while exchange rate appreciation and price increase had adverse effect on the BOP, a moderate rise in interest rate would lead to favorable balance of payment position. Government should ensure price stability to encourage demand for the nation's products. By so doing, investment and production would be enhanced, as well as export which would enhance BOP position.

3. Methodology

The data used for this study were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2017), National Bureau of Statistics (2017), and BP Statistical Review of World Energy (2017). The study employed the ARDL method of analysis, in order to obtain both short-run and long-run impact of crude oil price changes and determinants of the balance of payments as used by Imoisi (2012). However, the model was tailored to serve the actual purpose of this study. The model was specified in its functional form as follows;

BOP = f (OILP, EXR, INF, INT) …………………………………………………….…...1

For the purpose of empirical computation, the model has to be stated in a statistical form which will connote the technique of analysis as thus:

$$BOP = \beta_0 + \beta_1 OILP + \beta_2 EXR + \beta_3 INFR + \beta_4 INTR + \mu$$ …………………………..………2

Where the a priori expectation is as follows,
$\beta_1, \beta_2, \beta_3, \beta_4, \leq 0 \geq \beta_1, \beta_2, \beta_3, \beta_4$
Where,
BOP = Balance of Payment (dependent variable)
OILP = Crude Oil Price
EXR = Exchange Rate
INFR = Inflation Rate
INTR = Interest Rate
μ = Error term

In checking for the model fit, the Bounds test was mostly used instead of the traditional F-statistics since the Bounds test has its own F-statistics which is compared to the Pesaran values. A typical ARDL model is presented as

$Y_t = \beta_0 + \beta_1 y_{t-1} + ….. + \beta p y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + ….. + \alpha_q x_{q-1} + \mu_t$ ………………...……3

Where Y is the dependent variable and X is the independent variable and μ is the stochastic term. In furtherance of the analysis, the long run relationship was estimated too going by the regular classical linear regression model.

$Y = \beta_0 + \beta_1 X + \mu.$ …………………………………………………………………..……..4

In line with the research objective, the variables used in the analytical aspect of this study were time series natured and were of secondary source. Data for each of them was collected from published works.

4. Discussions of Results

Table 4.1: Descriptive Statistics

Variable	Mean	Standard Deviation	Maximum	Minimum	Observations
BOP	-0.03	0.12	0.37	-0.28	31
OILP	44.88	32.81	111.67	12.72	31
EXC	100.27	82.28	305.80	4.02	31
INFR	20.63	18.65	72.84	5.38	31
INTR	0.56	17.98	25.28	-43.57	31

Source: Author's computation using E-views, 2018

The descriptive statistics output in Table 4.1 shows the first parameter (mean) on the first column, the mean value of the dependent variable, BOP is -0.03 with a standard deviation of 0.12 which is a relatively low value. Its maximum value is 0.37 while its minimum value is -0.28. These values are close, thereby showing that there has not been much difference in the balance of payment positions over the years, hence, rates of increase or decrease are minute. The oil price has a mean value of 44.88 which is very large, compared to that of the BOP while its standard deviation is 32.81 which is also a high value, its maximum value is 111.67 while its minimum value is 12.72 which is smaller than the standard deviation and mean value. Furthermore, amongst the exchange rate, inflation and interest rates, the variable with the smallest mean value is interest rate with an average of 0.56 while its standard deviation is also the lowest at 17.98. All variables seem to be fairly distributed across series since their means, maximum and minimum values circle round their standard deviations. All variables included have 31 observations each.

Table 4.2: Unit Root Test

Variables	ADF Statistic	5% Critical Value	Order of Integration
BOP	-9.15	-2.97	I (1)
OILP	-4.84	-2.97	I (1)
EXC	-4.67	-2.97	I (1)
INFR	-3.69	-2.99	I (0)
INTR	-6.67	-2.97	I (1)

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

Table 4.2 shows the Augmented Dickey-Fuller test of a unit root. The results show that all variables are stationary after first differencing except for inflation rate which was stationary

at levels. This means that, all variables are integrated at I(1) while inflation is integrated at I(0), hence, the variables are of different levels of integration. The implication of this is that the choice of model for the analysis will be the Autoregressive Distributed Lag (ARDL) model if only the bound test shows that the variables are co-integrated or otherwise Vector Autoregressive model (VAR).

Table: 4.3 Bounds Test

F-Statistic	Degree of Freedom	P-value
7.712742	(4, 18)	0.0008

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

 F-statistic is said to be significant if the probability of f-statistic is less than or equal to 0.05. From the result obtained above, the probability value of f-statistic is 0.0008 which is less than 0.05. This means that the explanatory variables are jointly significant in explaining the balance of payments at 5 percent level of significance. The results presented on the table 3 shows the F-statistic to be 7.71 while the p-value is 0.0008. The null hypothesis is that there is no cointegration between the variables in the model. Going by the p-value, we rejected the null hypothesis and hence concluded that there existed cointegration between the included variables.

Having made the choice of the model due to the lag suggestions by the Akaike Information Criterion (AIC) and the Schwarz Information Criterion (SIC), the ARDL model which is known as the conditional ECM is presented below:

Table 4.4 shows a short-run estimation of an error correction model. The result shows that lagged value of crude oil price has a coefficient of -0.0033 which means that there is a negative relationship between crude oil price and BOP, hence, a percent increase in the lagged value of crude oil prices will lead to a decrease of 0.003 percent in the current value BOP. This relationship is significant going by the p-value of 0.0482. The implication is that high oil revenue will make the economy rate of importation to be higher than the rate of exportation which will result in a fall in BOP position. That is, an increase in oil price will lead to a high demand for the Dollar which will depreciate the Naira and appreciate the Dollar. The result is in line with Alhassan and Kilishi (2016) and Eneji, et al (2016) who obtained that oil price is a key factor of macroeconomic instability in Nigeria.

Table 4.4: Conditional ECM

Variable	Coefficient
D((BOP)-1)	0.2973
	(0.1875)
D((OILP)-1)	-0.0033**
	(0.0017)
D((EXC)-1)	-0.0002
	(0.0015)
D((INFR)-1)	0.0046**
	(0.0018)
D((INTR)-1)	-0.0009
	(0.0016)

R^2 = 0.78, Durbin-Watson-statistic = 1.79; Source: Author's computation using E-views, 2018.

The study also found a negative and insignificant relationship between exchange rates and balance of payments, a percent increase in the lagged value of exchange rate lead to a

decrease of 0.2 percent in the current value of BOP. The implication is that a decrease in the exchange rate is likely to promote a favorable balance of payments position in Nigeria. This finding confirms the Dutch disease theory which postulates that an increase in oil revenues will make Nigeria naira to be stronger against other nation currencies, thus leading to balance of payments disequilibrium (Milan, Otaviano, and Ekaterina, 2010). More so, the elasticity approach which is built on the Marshall-Lerner condition, asserts that exchange rate changes restore equilibrium in balance of payment (BOP) by devaluing a country's currency (Udede, 2015). The monetarist however, explained that exchange rate devaluation will only improve balance of payments condition in the long run as against short run argued by the elasticity approach (Udede 2015). According to the absorption approach to the theory of balance of payments, the correction of a deficit in the balance of payments by means of devaluation is possible if only the rate at which devaluation would induce increases in the national output of goods and services is greater than the propensity to absorb (Akatugba, 2018). This discovery strengthens the claims of Milan, Otaviano, and Ekaterina, 2010, Udede, 2015, Eme 2016, Akatugba, 2018 and Olisah 2018.

The study found that inflation rate has a significant positive relationship with the balance of payments. This is not as always expected because, in the real sense, people will expect that an increase in general price level will result to balance of payments deficit. The small coefficient size (0.0046) of inflation shows that a lower inflationary rate will promote the external sector economy and is significant. It implies that a moderately inflationary rate is essential for a favorable balance of payments position. This finding gives support to the structuralists theory of inflation which posits that inflation is essential for economic growth as well as lends support to the monetarist theory of inflation. The result obtained is contrary to the finding of Eme (2016), Akatugba (2018), and Olisah (2018) that inflation has adverse effect on the BOP.

Also, the result in Table 4.4 shows an inverse insignificant relationship between interest rate and balance of payments. The coefficient of interest rate is -0.0009 meaning that a rise in interest rate, would effect 0.0009 declines in the balance of payments. This finding confirms the Keynesian and classical theories of interest which postulate that at higher interest, there will be less borrowing which in turn leads to low capital and as such, low investment or production activities (goods and services) resulting to a decline in balance of payments positions. The implication is that a reduction in the rate of investments or production activities will result to a rise in the prices of available commodities in the economy thereby making these commodities more expensive and as such leads to a decline in the overall demand for them. The decline in the overall demand for export will then lead to unfavorable balance of payments position. This is in line with Udede (2015) and Olisah (2018) who concluded that interest rate should be low to ensure availability of credit to investors, and will in turn enhance domestic productivity which will increase the rate of export over import.

The coefficient of determination, (R^2) shows goodness of fit of the regression line or the amount. From the result, about 78% of the variations in the dependent variable is explained by the explanatory variables while the remaining 22% is capture by factors outside the model. Furthermore, the Durbin Watson statistic of 1.79 is within the region 1.75 to 2.50.

Table 4.5: Long-run Dynamics

Variable	Coefficient
OILP	0.0042
	(0.0009)**
EXC	0.0023
	(0.0004)**
INFR	0.0017
	(0.0015)
INTR	-0.0016
	(0.0014)

R^2 = 0.13, D-W = 2.02 F-statistic = 8.06, P-value = 0.04; Source: Author's computation using E-views, 2018.

From Table 4.5, oil price coefficient has a positive and significant relationship with balance of payments. However exchange rate as well as inflation rates both have positive relationship. Thus, exchange rate has a significant relationship with the BOP while inflation rate has no significant relationship with balance of payments. Meanwhile, interest rate maintains a negative relationship which is not significant.

The F-statistic shows that in the long run, the models are jointly significant in explaining the variations in the balance of payments in Nigeria, although the low R-squared value shows that there could be improvements on the variables.

5. Conclusion and Policy Implications

This study investigated oil price fluctuations and Nigerian balance of payments using data spanning from 1987-2017. The study employed the Auto Regression Distributive Lag (ARDL) technique of estimation in investigating the variables and found that crude oil price fluctuations had a significant impact on the balance of payment within the study period in Nigeria. The crude oil price and inflation rate were significant while exchange rate and interest rate were not significant factor that influenced the country's balance of payments position.

It was further discovered from the study that crude oil price, exchange rate and interest rate were negatively related to balance of payments, while inflation rate was positively related to balance of payments. It was discovered that the balance of payments has a long run relationship with all the variables included in the model. Based on the findings from this study, it is therefore concluded that oil price is a major factor of macroeconomic instability in Nigeria. It has negative influence on the country's balance of payment position due to over-dependence on oil revenue and poor performance of non-oil export. Exchange rate is a decreasing function of balance of payment as much as interest rate is. Furthermore, a moderately low inflationary rate is an increasing function of balance of payments.

Based on the findings the following are recommended; First, government should focus on diversification of the economy from oil to other sectors, such as the agricultural sector, service sector, trade, and commerce sector, tourism or recreational centers, etc. so as to have many export commodities and services which will open up different sources of revenue for the economy and reduce over-reliance on oil earnings and hence a favourable balance of payment position. This can be achieved by providing basic social amenities and

infrastructural facilities, protection of infant industries from foreign competitors by placing tariffs, embargo, licensing, etc. and appropriate government policies and incentives so as to boost productivity of the non-oil sector for export activities. Secondly, the government should also aim at a favorable exchange rate to avoid foreign goods inexpensive as against local products so as not to discourage exports as decreasing exchange rate promotes export. Since inflation was found to be beneficial to balance of payments, the government should adopt inflation control measures, this will help to keep a moderate rate of inflation and as such, increase the purchasing power of income. Among the instruments for inflation control are the monetary and fiscal policies. Finally, the Central Bank of Nigeria should give special directives to commercial banks on the level of interest in order to keep interest rate low. They should also ensure availability of credit to investors to enhance domestic productivity which will increase the rate of export over import and as such lead to a favorable balance of payments position.

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