Investigating the Impact of Oil Export on Gross Capital Formation in Nigeria

Odo Stephen Idenyi, Udude Celina Chinyere, Okpoto Sunday Ituma
Department of Economics, Ebonyi State University, PMB 053, Abakaliki, E/State, Nigeria

Abstract
This study examined impact of oil export on gross capital formation in Nigeria for the period of 1980- 2015. The study specified the model as gross capital formation (GCF) being a function of oil export (OEX), real gross domestic product (RGDP) and exchange rate. The pre test carried out in the study are unit root test and co integration test while VECM econometric test was used to test the impact of the explanatory variables on the dependent variable. Based on the above stated econometric procedure, the study found out that: (i) oil export inversely and significantly impacts gross capital formation in Nigeria both in long run and short run within the period under review.(ii) real gross domestic product impacts gross capital formation in Nigeria in the long run during the study time. (iii) There is causal relationship existing between dependent variable and explanatory variables in Nigeria. The study concludes that oil export has not contributed to growth in gross capital formation in Nigeria. Based on the findings above the study recommend that government should legalize the operations of local (illegal) refineries operating in Nigeria and also make our local refineries to operate at full capacity so that it will lead to availability of refined products for domestic consumption and consequently discourage the importation of refined product from abroad thereby saving the country huge foreign exchange hitherto used for importation, to enable the revenue generated from oil export to be used for investment purposes that will boost the gross capital formation of the country which will in turn lead to economic growth.
Keywords: Gross capital formation, Oil export, Nigeria, Co integration and VECM.

INTRODUCTION

Prior to the oil boom of 1970 about 70% of Nigerian people had agriculture as their major source of income and the main crops widely produced are - beans, cashew nuts, groundnuts, kolanut, melon, palm oil, rubber and rice. Also cattle rearing, grazing of sheep and well-maintained livestock farm were also practiced in parts of rural Nigeria. The presence of large natural resources attracted foreigners and traders from different parts of the world to Nigeria. Overtime, the great opportunities available in the agricultural sector was abandoned due to the rising foreign exchange inflow from oil export. The rich deposits of oil and petroleum have served as the major income for the country throughout the years and its relevance to the capital formation of the country through increase in productivity cannot be over emphasized. This study agrees that oil constitutes about 90% of Nigerian exports earnings or foreign exchange earnings that make up our foreign reserve. Many economists( )are of the opinion both theoretically and empirically that oil export is the core engine that lead to increase in capital formation and in turn will lead to efficiency in productions and optimum allocation of resources. This would result to economies of scale through specializations in productions and promoting the diffusion of advanced technology. And also the importance of trade openness and rate of exchange in enhancing increase in the gross capital formation are very obvious. (Udoh, 2014)

Gross Capital formation is a term used to describe the net capital accumulation during an accounting period for a particular country, and the term refers to additions of capital stock, such as equipment, tools, transportation assets and electricity. Countries need capital goods to replace the current assets that are used to produce goods and services, and if a country cannot replace capital goods, production declines. Generally, the higher the capital formation of an economy, the faster an economy can grow its aggregate income and it shows something about how much of the new value added in the economy is invested rather than consumed. It is known as gross capital formation because the measure does not create any adjustments to deduct the consumption of fixed capital (depreciation of fixed assets) from the investment figures.(Shuaib and Dania 2015)

Oil export is a naturally occurring, unrefined petroleum product composed of hydrocarbon deposits and other organic materials, that is been obtained through oil drilling, where it is usually found alongside other resources, such as natural gas (which is lighter, and therefore sits above the crude oil) and saline water (which is denser, and sinks below). This crude oil is been exported as raw material to other countries. Crude oil is also known as black gold and it has various range of viscosity and can vary in color to various shades of black and yellow depending on its hydrocarbon composition. In the International market, the instability in price of crude oil has really affected the economy and has been like a challenge towards achieving desired revenue which will help in developing the manufacturing and production sector. The foreign exchange rate is one of the factor that often affects the price of oil since Nigeria export crude oil to other countries. (Uwakonye,2006)

According to Omankhanlen (2011) Exchange rate refers to the price for which the currency of a country

can be exchanged for another country's currency. There are many factors that can influence exchange rate, they include interest rates, inflation rate and trade balance etc. it is important to note that the influence of the above mentioned variables on the exchange rate can lead to appreciation of the country currency causing increase in the productivity of the economy which will in turn boost gross capital formation in the economy vice versa.

Economic growth refers to the increase in the inflation-adjusted market value of the goods and services produced by an economy over a period of time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP, usually in per capita terms. It is also the geometric annual rate of growth in GDP between the first and the last year over a period of time. Absolutely, this growth rate is the trend in the average level of GDP over the period, which implicitly ignores the fluctuations in the GDP around this trend. An increase in economic growth caused by more efficient use of inputs (such as labor productivity, physical capital, energy or materials) is referred to as *intensive growth*. GDP growth caused only by increases in the amount of inputs available for use (increased population, new territory) is called extensive growth. (Albiman and Suleiman, 2016)

Statement of problem

Nigeria over dependency in oil as her major export is very high and estimate has showed that Nigeria receives most of her revenue for investment from the earning from oil export. It is estimated that Nigeria has 37.2 billion barrels of oil reserves (as of 2011) and produces an average of 2.13 million barrels per day (EIA 2013). The hydrocarbon sector also accounts for more than 75 per cent of the federal government's revenue. This suggests that Nigeria is heavily dependent on the oil sector for the majority of government spending, infrastructure and most economic development activities. With the increasing volatility of oil prices, the discovery of oil in other parts of the world and the instability of the global economy, oil imports from Nigeria to major economies such as the United States has steadily decreased. The U.S once imported 9-11% of its crude oil from Nigeria but in the first half of 2012, the share of imported oil from Nigeria to the U.S has dropped to 5% (EIA2013). The capacity of the oil export to facilitate gross capital formation and lead to economic productivity had been undermined by the debilitating effects of fluctuations in oil export earnings. Most developing nations such as Nigeria export mainly primary products, which are characterized by lower price and income elasticities of demand and supply than manufactured products. Since Nigeria import most of her capital goods and the level of technological progress depends hugely on gross capital formation which is partly a function of stable oil export earnings. The fall in the oil price would influence the revenue gotten from the oil export thereby leading to fall in gross capital formation, inability of the government to meet up with her spending. Therefore this study wishes to investigate the impact oil export on capital formation in Nigeria to be able to provide solution to the problem identified. The trend of oil export and gross capital formation for five (5) years interval are discussed below; in 1980 oil export was 13,632.30 while gross capital formation was 13,432.12, in the year 1985 it fell down to 11,223.70 and gross capital formation also fell to 5906.00; but in the year 1990 both oil export and gross capital formation increased to 106626.50 and 6254.40 respectively while in 1995 oil export rose to 927565.30 and gross capital formation fell to 4616.40; in the 2000 both oil export and gross capital formation increased to 1,920,900.40 and 6,394.70 while in 2005 oil export increased to 7,140,578.90 and gross capital formation fell to 6,136.60; in year 2010 both oil export and gross capital formation increased to 10,157,328.20 and 21,929.00; while in year 2015 both oil export and gross capital formation also increased to 13,832,023.68 and 17,041.00 respectively. So following the inconsistency in the trend this research work is set to investigate the reason for the fluctuation for the period under study 1980- 2015.

Research Questions

To provide answer to the problem identified above the study raised the following research questions

(i) Does oil export impact gross capital formation in Nigeria?

(ii) Did real gross domestic product impact gross capital formation in Nigeria?

(iii) Is there any causal relationship existing between the dependent variable and explanatory variables in Nigeria?

Objectives of the Study

The general objective of the study is to investigate impact of oil export on gross capital formation in Nigeria from the period of 1980-2015 and the specific objectives are:

(i) Determine impact of oil export on gross capital formation in Nigeria.

(ii) Investigate if real gross domestic product impacts gross capital formation in Nigeria.

(iii) Examine if there is causal relationship existing between the dependent variable and explanatory variables in Nigeria.

Scope of the Study

The study investigated the impact of oil export on gross capital formation in Nigeria from the period of 1980-

2015. The following variables where used, gross capital formation as dependent variables and real GDP, exchange rate, and oil export as the explanatory variables.

Review of Related literature
Theoretical Review
Theory of Comparative Advantage
The classical theory of comparative advantage was developed by David Ricardo in 1817 to explain why countries engage in international trade even when one country's workers are more efficient at producing *every* single good than workers in other countries. He established that if two countries are capable of producing two commodities engage in the free market, then each country will increase its overall consumption by exporting the good for which it has a comparative advantage while importing the other good, provided that there exist differences in labor productivity between both countries. Widely regarded as one of the most powerful yet counter-intuitive insights in economics, Ricardo's theory implies that comparative advantage rather than absolute advantage is responsible for much of international trade.

Trade theory and natural resources
Heckscher-Ohlin 1919 in his theory stated that the relative differences in countries' resource endowments are key to the standard of international trade. He argued that a country will export the good which requires the intensive use of the country's relatively abundant (and therefore cheap)factor for its production, and import the good which requires the intensive use of the country's relatively scarce(and therefore expensive) factor for its production. This includes cases in which the natural resource is directly exported (after a minimal amount of processing), rather than being used as an input in another good that is later sold in international markets. Hence, endowments of immobile and scarce natural resources may form a source of comparative advantage that guides the pattern of international trade.

Empirical Review
Shuaib and Dania (2015) examined the impact of capital formation on the economic development of Nigeria, using time series data from 1960 to 2013. The study applied Harrod –Domar model to Nigerian economic development model and tested if it has a significant relationship with Nigerian economy. The study explored various econometrics and statistical analytical method to examine the relationship between capital formation and economic development. The study tested the stationarity and/or different diagnostic tests of Nigeria's time series data. The entire tests rejected the null hypothesis and accepted the alternative hypothesis. From the empirical findings, it was discovered that there is a significant relationship between capital formation and economic development in Nigeria. The results corroborated with the Harrod-Domar model which proved that the growth rate of national income will directly be related to saving ratio and/or capital formation (i.e. the more an economy is able to save-and—invest-out of given GNP, the greater will be the growth of that GDP). The authors recommended based on the econometric results that the government should continue to encourage savings, create conducive investment climate and improve the infrastructural base of the economy to boost capital formation and hence promote sustainable growth.

Udoh (2014) studied the impacts of foreign direct investment (FDI) and Oil export on Economic growth in Nigeria from 1970 through 2011. The Augmented Dickey Fuller (ADF) unit root test was adopted to determine the stationary properties of the data, while the order of integration of the data was tested using the Johansen Co-integration test. The co-integration result produce two co-integrating equations, which confirms the existence of long-term relationship among the variables- Gross Domestic Product (GDP) and Foreign Direct Investment(FDI,) Oil Export, Exchange rate Inflation as well as Trade Openness. Also the ordinary Least Square (OLS) or short run regression analysis result shows that 87 percent of total changes in economic growth are explained by the explanatory variables. Equally the F-test/statistic value of 50.58807 shows that the model or equation has a good fit, which signifies that the exogenous variables are good explainers of changes in economic growth in the Nigerian economy. The t-statistic shows that foreign direct investment is not statistically significant in explaining the level of economic activities as a result of non-conducive environment for investment as well as oil theft. The negative value of the t-statistic on oil export could be explained by the fact that part of the oil exported are for refining abroad and later imported for domestic consumption. Premised on the above the study recommends that there should be improvement of institutions, economic and social infrastructure, so as to attract cross boarder investment. Also required is improvement of code of conduct on foreign direct investment to limit the repatriation of profits, which will ensure reinvestment, and increase the volume/value of FDI in Nigeria. In addition domestic investors/investment should be encouraged especially downstream of the oil sector, to increase the level of employment and economic activities. Policy makers should appreciate the effects of lag, in order to ensure appropriateness and consistency, in the implementation of policies.

Eze (2015) investigate the impact of crude oil export and corruption in Nigeria economy. The study

focused mainly on the revenue generated from oil export with the purpose of assessing oil exploration and corruption with the objective of investigating Nigeria's oil export and its contribution to the growth of economy and finding out if the level of corruption affects the economic growth in Nigeria. Based on the findings, the result portraits that oil export has significant impact on the economy despite its effect by corruption which appears to be negatively related to other economic variables. Therefore it recommended that the policy of oil and non-oil export promotion strategy should be taken serious by the government in order to effect a positive change. Federal government should pay more attention to sectors like agriculture and manufacturing.

Uwakonye (2006) analyzed the impact of oil and gas production on the Nigerian economy: a rural sector econometric model. The paper shows the amount of oil being produced per day, as well as, the process by which the oil is brought to the market. The paper also shows the labor to GDP ratio, the major exports, and the major imports of Nigeria. Finally, an understanding of the ethnic struggle within Nigeria is looked at, as well as, the illegal oil racketeering that is costing the Nigerian governments billions of dollars. Until the people of Nigeria can take control of its government and rid themselves of the crushing militias that controls the politics in Nigeria, the people are doomed to suffer, the study asserted.

Albiman and Suleiman (2016) examined the relationship among export, import, capital formation and economic growth in Malaysia. This study used time series data from 1967-2010 and VAR analysis. For the co-integration test we found no long run relationship among the interested variables. For causality analysis, export ratio and economic growth granger cause domestic investment. The impulse response function show that, the economic growth responds both positive and negative way depending on time period, due to the shock of domestic investment, import and export. Meanwhile because Malaysia is an open economy, to ensure effectively utilization of domestic resources, reforms of new policies to ensure that, at least two variables either import, export or domestic investment re enforce each other in promoting economic growth over long run is needed.

Akpokodje (2000) explored the association between export earnings fluctuations and capital formation in Nigeria. Using a reduced form equation built around the flexible accelerator model and adopting a co-integration technique, it discovered that the current level of export earnings fluctuations adversely impinges on investment (that is, the change in capital stock) in the short run.

Emmanuel and Andrew (2014) studied the effect of gross capital formation on the economic growth of the CEMAC sub- region. It draws inspiration from the endogenous growth model. Data for the study is collected from the World Bank Development Indicators. The estimation technique used for this study is the Generalized Least Square estimation technique. The results showed that private investment has a significant positive association with economic growth. This is also the case of technical progress and infrastructural development. On the contrary, labour force tends to affect negatively economic growth in this sub-region. This suggests that countries of the sub region need to implement realistic employment policies.

Major Gap in Literature

Author	Topic	Methodology	Variables used	Findings	Gap
Udoh (2014)	The impacts of foreign direct investment (FDI) and Oil export on Economic growth in Nigeria from 1970 through 2011.	ordinary least squares (OLS)	Gross Domestic Product (GDP) , Foreign Direct Investment(FDI,) Oil Export, Exchange rate Inflation as well as Trade Openness.	the existence of long-term relationship among the variables- Gross Domestic Product (GDP) and Foreign Direct Investment(FDI,) Oil Export, Exchange rate Inflation as well as Trade Openness.	The scope of the study was 1970-2011 while the current research scope is 1980-2015. A four (4) years update and also that the study used ordinary least squares (OLS) while the current research used VECM.
Emmanuel and Andrew (2014)	The effect of gross capital formation on the economic growth of the CEMAC sub- region.	Generalized Least Square estimation technique	Gross domestic product, investment and employment rate, unemployment.	That private investment has a significant positive association with economic growth.	The study used Generalized Least Square estimation technique while the current study used VECM also the study variable was carried out in CEMAC sub- region while the current study is carried out in Nigeria.
Akpokodje (2000)	The association between export earnings fluctuations and capital formation in Nigeria.	Using a reduced form equation built around the lexible accelerator model	Export earnings fluctuations and investment.	That the current level of export earnings fluctuations adversely impinges on investment (that is, the change in capital stock) in the short run.	The work time is 2000 while the current study time is 2015 giving 5 years time gap and also the study variables are different from the current research variables such as exchange rate, real GDP.
Albiman and Suleiman (2016)	The relationship among export, import, capital formation and economic growth in Malaysia	ARDL technique	Export, import domestic investment and GDP.	That the economic growth responds both positive and negative way depending on time period.	The study used ARDL while current study used VECM and also that the study was done in Malaysia and the current research in Nigeria.

METHODOLOGY

Research Design

The study adopted causal comparative research method also called ex-post factor research design, this is because the data used already exist and cannot be manipulated. The variables to be included in the study model are gross capital formation as dependent variable, oil export, real gross domestic product and exchange rate as explanatory variables.

Model Specification

The model of this study is hinged on the model of Shuaib and Dania (2015), which enables the determination of the impact of capital formation on the economic development of the Nigerian from 1960 to 2013. The model is designed below:

$$RGDP = f(GCF, TGEXP, INTR, INF, EXR, EDR, INV) \qquad 1$$

Equation 1 above will be transpose in order to make gross capital formation dependent variable and real GDP an independent variable as seen in equation 2 below

$$GCF = f(RGDP, TGEXP, INTR, INF, EXR, EDR, INV) \qquad 2$$

To accommodate the variables used in this study the equation two (2) is stated functionally as

$$GCF = f(RGDP, OEX, EXR) \qquad 3$$

Where GCF= gross capital formation, RGDP = real gross domestic product, OEX = oil export and EXR = exchange rate

Equation 3 is presented in a linear form for estimation as follows;

$$GCF_t = \beta_0 + \beta_1 RGDP_{t-1} + \beta_2 OEX_{t-1} + \beta_3 EXR_{t-1} + \mu_t \qquad 4$$

Where GCF, RGDP, OEX and EXR are as explained above; β_0- β_3 are parameter estimate while μ_t is error term.

Data Discussion

The study variables specified in the model are discussed below;

Gross capital formation = this is measured by the total value of the gross fixed capital formation, changes in inventories and acquisitions less disposals of valuables for a unit or sector.

The real GDP is the total value of all of the final goods and services that an economy produces during a given year, accounting for inflation. It is calculated using the prices of a selected base year. To calculate Real GDP, you must determine how much GDP has been changed by inflation since the base year, and divide out the inflation each year. Real GDP, therefore, accounts for the fact that if prices change but output doesn't, nominal GDP would change.

Exchange rate is how much it costs to exchange one currency for another. Exchange rates fluctuate constantly throughout the week as currencies are actively traded. This pushes the price up and down, similar to other assets such as gold or stocks.

Oil export is the quantity of crude oil products transported across the state border to other countries.

Sources of data employed

The study employed data from International Monetary Fund- International Financial Statistics Online 2013 and Central Bank of Nigeria Statistic bulletin of various issues.

Estimation Procedure

To investigate impact of oil export on gross capital formation in Nigeria the following pre test are used: unit root test which was used to test for the stationary of the variables, Johansen Co integration test statistics also was used to ascertain if there are any co- integrating vector. Vector Error Correction Model (VECM) approach and Granger causality test statistic were used as econometric method of analyses. The VECM technique is selected because of its desirable statistical properties such computational simplicity, linearity, unbiasedness, minimum variance and zero mean value of the random term etc (koutsoyiannis 2003 and Gujarati 2005). However, we shall first determine the long-run reliability of the variables in the model through unit root test. The researcher used Johansen Co integration test for the purpose of this exercise.

ECM is a measure of the speed of adjustment of the short run relation to unexpected shocks. It is also measured as the effects of residual from the long run model. The long run feedback effect is indicated by significant of ECM terms while the significant coefficient of the individual variables are used to measure short run causality. Ogbonna (2010) opine that the error correction model must be negative and significantly different from zero. A negative coefficient of the error correction model means that in the event of a deviation between actual and long run equilibrium level, the long run relationship in subsequent periods would adjust back to eradicate this discrepancy. Perchance, a negative and significant coefficient of the ECM indicates that any short term fluctuations between the independent variables and the dependent variables result to a stable long run relationship between the variables. Although, a positive and non significant ECM does not invalidate a

regression result (Gujarati, 2005) which implies that in the event of a deviation between actual and long run equilibrium level, there will be no adjustment back to the long run relationship in subsequent periods to eradicate this discrepancy which invariably will require a different economic policy prescription to mitigate the attendant economic situation (Odo et al ,2015)

The researcher shall first carry out a unit root test on the variables in this model. This is because most macroeconomic time-series have unit root and the regression of a non-stationary time series on another non-stationary time series would produce a spurious regression. So to produce a meaningful estimate, the researcher conducted a unit root test. Thus, this study shall test the nature of the time series first to determine if they are stationary or not and if stationary of what order did they integrated. The order of integration will help the researcher in determining the long-run relationship among the variables. To carry out this, the Augmented Dickey Fuller test will be used.

After performing the unit root test, the research shall test for co-integration among the variables. Co-integration shows the presence of a linear combination of non-stationary variables that are stationary. In a case where co-integration does not exist, it means that the linear combination is not stationary and the variable does not have a mean to which it returns. The presence of co-integration however, means that there is a stationary long run relationship among the variables. The Mackinnon (1991) critical value or residual procedure will be adopted in this study.

A non-stationary series which can be transformed to a stationary series by difference d time is said to be integrated of the order d. A series X_t integrated of order d is conventionally denoted as:

$$X_{t-1}(d) \quad - - - \qquad (i)$$

If X_t is stationary, then there is no need for differencing; that is integration order of zero denoted as:

$$X_{t-1}(0) \quad - - - \qquad (ii)$$

These series with time variant mean and co-variance function is said to be integrated of order zero. While series that are differenced once to achieve stationarity, is said to be integrated of order one, that is

$$X_{t-1}(1) \quad - - - \qquad (iii)$$

The Augmented Dickey-fuller (ADF) and the Saragn-Bahrgv Dub-Watson (SBDW) test used is in this general format

$$X_t = a + \beta x_{t-1} + \beta T + \sum t \quad - - - \qquad (iv)$$

and

$$X_t = a + \beta x_{t-1} + \sum Ci \, p \, X_{t-1} + \beta T \quad - - - \qquad (v)$$

Where the n's are large enough to guarantee white noise residuals and T is trend.

The relevant test statistics for PP and ADF test is the ratio of β over its OLS standard error. The Null hypothesis is

$$H_0: X_{t-1}(1)$$

The test statistic has no t-distribution under the null hypothesis because of the theoretical variance of X_t though; Fuller (1976) reports tables and critical values for those t- ratios.

The next step would be to evaluate the order of integration of the residual generated from the static model. If the series of the model is co-integrated, that is the residuals is stationary, the researcher is guided towards error correction specification regression are non-stationary. Otherwise, we can apply the Unit root to check their stationarity.

The unit root test of the DF and ADF are respectively as follows:

$pU_t = \Phi U_{t-1} + dT$

$pU_t = \Phi U_{t-1} + \sum \delta i \, pU_t + dT$

In a case where co integration does not exist, it means the linear combination is not stationary and the variable does not have a mean to which it returns. The presence of cointegration however implies that a stationary long-run relationship among the series is present.

Presentation of Results
Unit Root Test
Table 1: Augmented Dickey Fuller Unit Root Test
Trend and Intercept (Series at Level)

Series	ADF Test Statistics	5% Critical values	Pval	Remarks
GCF	-2.067097	-3.544284	0.5454	Not Stationary
OEX	-1.333497	-3.544284	0.8626	Not Stationary
RGDP	-0.721299	-3.544284	0.9634	Not Stationary
EXR	-2.097551	-3.544284	0.5292	Not Stationary

Sources: Researcher's compilation from E-views 9

Table 2: Augmented Dickey Fuller Unit Root Test
Trend and Intercept (Series at 1st difference)

Series	ADF Test Statistics	5% Critical values	Pval.	Remarks
GCF	-6.662587	-3.548490	0.0000	Stationary
OEX	-5.673630	-3.548490	0.0003	Stationary
RGDP	-8.748622	-3.548490	0.0000	Stationary
EXR	-5.428908	-3.548490	0.0005	Stationary

Sources: Researcher's compilation from E-views 9

Table 3: Phillips Perron Unit Root Test
Trend and Intercept (Series at Level)

Series	PP Test Statistics	5% Critical values	Pval.	Remarks
GCF	-1.910264	-3.544284	0.6279	Not Stationary
OEX	-1.248593	-3.544284	0.8841	Not Stationary
RGDP	-0.755903	-3.544284	0.9603	Not Stationary
EXR	-2.148346	-3.544284	0. 5022	Not Stationary

Sources: Researcher's compilation from E-views 9

Table 4: Phillips Perron Unit Root Test
Trend and Intercept (Series at 1st Difference)

Series	PP Test Statistics	5% Critical values	Pval.	Remarks
GCF	-6.646358	-3.548490	0.0000	Stationary
OEX	-5.819628	-3.548490	0.0002	Stationary
RGDP	-8.662177	-3.548490	0.0000	Stationary
EXR	-5.428908	-3.548490	0.0005	Stationary

Sources: Researcher's compilation from E-views 9

Table 5: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No.of CE(s)	Eigenvalue	Trace statistics	0.05 Critical value	Prob**
None *	0.633032	67.47942	47.85613	0.0003
At most 1 *	0.465381	33.39504	29.79707	0.0185
At most 2	0.298030	12.10419	15.49471	0.1520
At most 3	0.002139	0.072816	3.841466	0.7873

Sources: Researcher's compilation from E-views 9
Trace test indicates 2 cointegrating eqn (s) at the 0.05 level.

Vector Error Correction Estimates (Long-Run Result)
The upper chamber of the vector correction result showing that there is long run association between gross capital formation and the explanatory, as also represented by the nor4malied co-integrating equation;
GCF = -14672.50 -0.002879OEX + 0.040385RGDP -16.94025EXR

Table 6: System Equation (Vector Error Correction Estimates Short-Run Result)

	Coefficient	Std.Error	t-Statistics	Prob
ECM (1)	-0.576542	0.086852	-6.638253	0.0000
GCF (-1)	0.201328	0.130254	1.545650	0.1334
RGDP (-1)	0.011548	0.009917	1.164456	0.2541
OEX (-1)	-0.001059	0.000378	-2.800686	0.0091
EXR (-1)	23.90558	22.48191	1.063325	0.2967

R-squared = 0.628339, F-statistics = 9.467511, pro(F-statistics) = 0.000023, DW=1.629954
Source: Researchers' compilation from E-view 9

Discussion of Result
Unit Root Tests

In the ADF and PP result presented in table 1 and 2 above respectively showed that the dependent variable (gross capital formation) and the set of the explanatory variables (oil export, real GDP and exchange rate) were not stationary at level but became stationary at 1st difference which is said to be integrated of the same order 1 (1) The Johansen co-integration test result presented in table 3 above indicated two (2) co integrating equation showing that there are long run relationship existing dependent variable and the explanatory variables. As seen by the first and second trace statistics of that their value is greater than 5% critical value [i.e (67.47942 > 47.85613) with P-value of 0.0003 and (33.39504 >29.79707) with P-value of 0.0185 respectively.

Vector Error Correction Model
The error correction mechanism result met the required condition of being negative, fractional and statistically significant. The coefficient of ECM (-1) is -0.576542 and the P-value (0.0000) therefore the negative sign of the coefficient satisfied one condition and the fact that the P-value is less than the critical value of 0.05 satisfied the second condition statistical significance.

The (R^2) is 0.628339 showing that 62.8% of the total variations in gross capital formation is accounted for, by the explanatory variables: oil export, real GDP and exchange rate while the remaining 37.2 % in gross capital formation is attributed to the influence of other factors not included in the regression equation. Durbin Watson statistics is 1.629954 which is approximately 2 showed the absences of auto correlation among the residuals**.**

Causality Test
As showed in the above result, the ECT (-1) is negative, fractional and significant implying there is a causality running between the dependent and explanatory variables.

IMPLICATION OF THE RESULTS
Johansson co integrating test indicated the presence of two (2) co integrating vector proving that there exist long run relationships among the variables. The nature of long run relationship in the equation are seen in normalized co-integrating coefficients and the upper chamber of the VECM as stated below:
GCF = -14672.50 -0.002879OEX + 0.040385RGDP -16.94025EXR
The estimated coefficient of the variables, OEX and EXR bore negative sign indicating negative long run relationship with GCF. This did not agree with the appirori expectation of the economic theory which state a positive association between them though it is in agreement with the work done by Eze (2015); RGDP bore positive sign showing positive long run association with GCF is in agreement with a work done by Emmanuel and Andrew (2014) and also in agreement the appiror expectation of the economic theory. In the short run OEX also has inverse relationship with also GCF which is in disagreement with economic theory. The negative relationship of oil export (OEX) with gross capital formation in both long run and short run indicates that as OEX is increasing GCF will be decreasing leading to also a reduction in the economic growth of the country. This can be attributed to the country over dependence on the imported good for survival, the revenue generated from the export of oil is been used for the importation of goods and service in the economy and that is the reason the country is having unfavourable balance of payment. Therefore government should embark on any policy that would change and legalize all the local illegal refineries operating in Nigeria and also make our local refineries to be operating very well so that it will lead to increase in the local production of the things she import to enable the revenue generated from oil export to be used for other purposes such as boosting the gross capital formation of country which will in turn lead to economic growth.

SUMMARY OF FINDINGS
This study examined impact of oil export on gross capital formation in Nigeria for the period of 1980- 2015. The study specified the model as gross capital formation (GCF) as function of oil export (OEX), real domestic product (RGDP) and exchange rate. The pre test done in the study are unit root test and co integration test while VECM econometric test was used to test the impact of the explanatory variables on the dependent variable. Based on the stated result above the study find out that:
(i) Oil export inversely and significantly impact gross capital formation in Nigeria both in long run and short run within the period under review. real gross domestic product impacts gross capital formation in Nigeria in the long run during the study time.
(iii) There is causal relationship existing between dependent variable and explanatory variables in Nigeria.
The (R^2) is 0.628339 showing that 62.8% of the total variations in gross capital formation is accounted for, by the explanatory variables: oil export, real GDP and exchange rate while the remaining 37.2 % in gross capital formation is attributed to the influence of other factors not included in the regression equation. Durbin Watson statistics is 1.629954 which is approximately 2 showed the absences of auto correlation among the residuals**.**

RECOMMENDATIONS

Based on the findings above the study recommend that government should legalize all the local (illegal) refineries operating in Nigeria and also make our local refineries to be operating at full capacity so that it will lead to increase in the local production of the things she import to enable the revenue generated from oil export to be used for other purposes such as boosting the gross capital formation of country which will in turn lead to economic growth.

CONCLUSION

This study examined impact of oil export on gross capital formation in Nigeria for the period of 1980- 2015. The study specified the model as gross capital formation (GCF) as function of oil export (OEX), real domestic product (RGDP) and exchange rate. The pre test done in the study are unit root test and co integration test while VECM econometric test was used to test the impact of the explanatory variables on the dependent variable. Based on the stated result above the study find out that:

(i) Oil export inversely and significantly impact gross capital formation in Nigeria both in long run and short run within the period under review. (ii) Real gross domestic product impacts gross capital formation in Nigeria in the long run during the study time.

(iii) There is causal relationship existing between dependent variable and explanatory variables in Nigeria.

The (R^2) is 0.628339 showing that 62.8% of the total variations in gross capital formation is accounted for, by the explanatory variables: oil export, real GDP and exchange rate while the remaining 37.2 % in gross capital formation is attributed to the influence of other factors not included in the regression equation. Durbin Watson statistics is 1.629954 which is approximately 2 showed the absences of auto correlation among the residuals. Based on the findings above the study recommend that government should embark on any policy that would change and legalize all the local illegal refineries operating in Nigeria and also make our local refineries to be operating very well so that it will lead to increase in the local production of the things she import to enable the revenue generated from oil export to be used for other purposes such as boosting the gross capital formation of country which will in turn lead to economic growth.

Reference

Akpokodje, G (2000) The effect of export earning fluctuations on capital formation in Nigeria African Economic Research Consortium.

Albiman, M. Md. and Suleiman, NN. (2016) The relationship among export, import, capital formation and economic growth in Malaysia: Journal Of Global Economics 4(2) 2375-4389.

BigBen , C. O. (2010), Trade balance effect of exchange rate devaluation in Benin Republic. International journal of social science: 2(5), 138-151.

Emmanuel, N. O. and Andrew, W. V. (2014) studied to know if gross capital formation matter for economic growth in the CEMAC sub-region;EuroEconomica2 (33) 1582-8859.

Eze, O. J. (2015) Analysis of oil export and corruption in Nigeria economy: International Journal of Economics, Commerce and Management United Kingdom, III (7) 112.

Gujarati, D. N. (2005). Basic econometrics 4th. Ed. (Tata McGraw- Hill Edition) New Delhi: Tata McGraw-Hill publishing company ltd.

Omankhanlen, A.E. (2011) The effect of exchange rate and inflation on foreign direct investment and its relationship with economic growth in Nigeria: Annals of "Dunarea de Jos" University of Galati Fascicle I. Economics and Applied Informatics XVII, 1584-0409.

Ricardo D. (1817). On the Principles of Political Economy and Taxation. London, Chapter 7

Shuaib, I. M & Dania, E. N.(2015)Capital formation: impact on the economic development of Nigeria: European Journal of Business, Economics and Accountancy 3 (3) 2056-6018.

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.

Uwakonye, M. N. (2006) The impact of oil and gas production on the Nigerian economy: a rural sector econometric model, International Business & Economics Research Journal 5 (2) 61.