

## MACROECONOMIC IMPLICATIONS OF ECONOMIC DIVERSIFICATION AND OIL RESOURCE CURSE ON SUSTAINABLE DEVELOPMENT IN NIGERIA

SAIBU M.O and M.A LOTO

DEPARTMENT OF ECONOMICS, UNIVERSITY OF LAGOS, AKOKA LAGOS NIGERIA

### ABSTRACT

The paper examined the role of macroeconomic variables such real investments, trade openness, exchange rate, inflation rate, real per capital income, oil revenue in enhancing economic diversification and preventing resources curse hypothesis. It also established the threshold level for investment and the cost of avoiding the oil resource curse hypothesis for effective diversification in an oil rich African developing economy like Nigeria. Normalised Hirschman Index was used to determine degree of diversification while conventional fully modified ordinary least square (FMOLS) to estimate the models. The result showed that the systematic variation in diversification index is caused by variation in exchange rate, trade openness, inflation, gross fixed capital formation and gross domestic product and the results were not sensitive to model specification and estimation technique. The result confirmed the resource hypothesis. It is also established that there as much as 16% deficit in investment as the economy required a minimum of 30% investment as ratio GDP. Similarly, per capital income needed to stimulate economic diversification need to be raised beyond a threshold of \$1380.3 billion for effective diversification. The main policy implication is that investment level and per capita income must be greater than this threshold if the vicious circle poverty and sustainable development is to be achieved in Nigeria.

**Keywords:** Investment, Trade Openness, Exchange Rate, Economic Diversification, Resource Curse, Oil Revenue, Economic Growth, Nigeria

## INTRODUCTION

Recent research concludes that the African economies have failed to address the oil curse and they are far behind other countries, especially those in the G7, which possess huge reserves of oil wealth but have undertaken economic diversification to correct the ill-effects of an oil curse. This paper therefore takes an in-depth look into the Nigerian economy not only as a model but also as a reminder to other African oil producing countries of the struggles ahead. Nigeria economy is considered as the largest economy in Africa. Its per capita GDP is second only to South Africa with an economic growth averaged about 5% per annum in the last 10 years but has oscillated between positive and negative throughout the last one year due to oil prices.

Despite African continent being the home to some of the world's fast-growing economies according to World Bank report 2011, the prosperity of majority of African countries and the urge to diversify and transform into a booming economy has not been made possible by reliance only on revenues from primary resource exports. Though its resource wealth might have contributed to its overall growth, the economic volatility resulting from recent decline in oil wealth have offset the positive productive returns from greater economic concentration and reliance on oil resources (Elhiraika and Hamad, 2007). Recent empirical literature ( Haouas and Heshmati 2014), suggests that the income from oil production is more likely to have a negative development impact and the drivers of economic growth in such a country are vulnerable to external shocks outside of its control (Ahmadov 2012).

With the intense economic competition due to globalisation and coupled with continued shrinking of oil resources a major main source of revenues for most of the top African countries, economic diversification is widely seen as one of the pathways out of the "resource curse" for developing countries that are abundant in natural resources (Humphreys, Sachs and Stiglitz, 2007; Gelb, 2010). According to Ahmadov (2012) natural resource wealth or dependence on such resources can lead to heavy distortions in the economy, deindustrialization, and poor economic growth Proposed solutions to the economic aspect of the "resource curse" have abounded and have included requiring transparency of negotiated outcomes, stabilizing expenditures, using earnings for investment, introduction of special economic zones, direct distribution of resource rents to the population, and privatization of resource sectors (Rosser, 2007). Encouraging economic diversification in resource rich and resource-dependent countries has been one of the most frequently offered long term solutions among scholars and practitioners alike (Collier and Venables, 2007; Gelb, 2010; Gelb and Grasmann, 2010). However, despite its apparent economic benefits and multitude of actors and policies pushing governments to diversify their economies, not all resource-rich developing countries have pursued diversification and only few of those who attempted have been successful in their efforts to defy specialization in primary commodities.

The objective of this paper is to answer the following questions: (a) what are the major determinant of economic diversification in Nigeria? (b) What is the threshold level of investment for effective diversification of the economy? And (c) what is the cost of avoiding the oil curse? The main policy questions, such as the diversification of the economy, and the threshold of per capita income that will break the vicious circle and spur the development in Nigeria. Diversification has been the most important challenge for the continent in the last decade. Human capital, labour distribution, privatization vs. public spending, and productive investments are among the factors that must be considered when planning to diversify an economy in order to reduce

the country's dependence on the resource wealth to achieve overall economic growth. The paper used the normalised Hirschman Index to accurately determine sector concentration in Nigeria and deploy the conventional fully modified ordinary least square (FMOLS) technique to estimate the models. Two models will be specified estimate the effects of diversification on growth and also on resource dependence and abundance

## **ECONOMIC DIVERSIFICATION, OIL RESOURCE CURSE AND SUSTAINABLE DEVELOPMENT NEXUS: A CONCEPTUAL REVIEW**

An economy that does not seek and prepare to diversify and entrench sustainable development, can equally be ready to crunch. Nations of the world have been endowed with mineral resources differently, which is why they cannot live in isolation, (Bitrus, 2013). The argument as to whether primary resources rich nations of the world do better in economic activities or not, is a matter of whether there is diversification of their economies or not There are several reasons to study economic diversification as it unfolds in the oil producing developing nations. As pointed out by 'Kubursi' 'Were oil supplies everlasting, and the demand for oil strong and continuous, economic diversification would be pointless. The governments of the region would instead need only to ensure the distribution of oil revenues among the population' (Martin (2013). However, in the real world, oil resources are finite and experience shows that both the price of and the demand for oil have fluctuated considerably. A second factor that has brought diversification to the forefront of economic policy in the developing countries is the simple fact that oil revenues quickly crowd out any other economic activity.

Diversification' is defined in a variety of ways according to the field of application. In political economy, the conceptual underpinning of this study, diversification 'normally refers to exports, and specifically to policies aiming to reduce the dependence on a limited number of export commodities that may be subject to price and volume fluctuations or secular declines' (Routledge Encyclopedia 2001). Within political economy, diversification can take place through either horizontal diversification (new opportunities are sought for new products within the same sector, e.g. mining, energy or agriculture) or vertical diversification, which entails adding more stages of processing of domestic or imported inputs. Thus, vertical diversification encourages forward and backward linkages in the economy, as the output of one activity becomes the input of another, thus upgrading the value-added produced locally.

Given the aim of diversifying away from oil and gas revenues, how can development of the oil sector be seen as a part of the diversification strategy? Diversification as posited by Beblawi (2011) can be done within the oil sector itself. He divides the manufacturing sector into two categories: *oil-based* and *import substitution* industries. In addition to the extraction of oil and gas, the oil-based industries include refineries, the vast petrochemical sector and energy-intensive industries, oil-based industries are usually large-scale and capital-intensive projects and as such generally state owned. The import substitution industries include a diverse set of activities, most commonly food processing and the manufacture of construction materials.

However, processing crude oil (refining) and using gas as feedstock in petrochemical plants reduce the risk associated with fluctuations in international oil prices, create jobs (however few) and attain a higher value-added – as long as oil is present.

According to Martin (2014) Diversification through the establishment of import substitution industries is potentially much closer to the original aim of divesting away from oil. It also holds a much better prospect of survival after the oil era, if this industry has been accustomed to operate under market conditions during the oil era; that is, if it does not rely on favourable production conditions provided by the circulation of oil money in society.

Nigeria is among the top largest economies in Africa, with a GDP greater than USD 500 billion and which grew steadily at over 7 percent per annum between 2005 and 2014, but this growth has been slower in 2015 (Ministry of trade and industry, 2015). Despite the economy entering recession in 2016, the quick response and deliberate policy action of government as well as improvement in international oil market has fast-tracked the economic recovery and stable upward trend in real out growth and economic stability in Nigeria. . This growth was driven primarily by the non-oil sectors, such as financial services, telecommunications, and entertainment. Foreign direct investment (FDI) inflows have been strong, averaging billion per quarter since 2013, with over 70 percent of this in the non-oil sectors, which shows to a great extent Nigerian economy has been reasonably diversified.

Why might countries with rich oil or diamond or copper reserves want to diversify in the first place? Does this make sense, given their particular comparative advantage? How does investment in domestic economic diversification, as a strategy, compare with alternatives such as portfolio diversification through saving a high share of resource rents abroad to invest in a range of industries – or simply slowing the rate of reserve depletion to hold more assets under the ground? One argument is that diversified economies perform better over the long term. There is strong empirical support for this proposition; Hesse 2008, Leiderman and Maloney 2007 and others, cited by Alan Gelb (2010)

There is no doubt that oil has contributed substantially to Nigeria's revenue since its discovery in 1956 and more especially, since 1970 when its price was on the upward trend. Yet, oil receipts and their management have challenged governance to the core over time in Nigeria (WTO, 2015) Deeper economic diversification is an urgent necessity to undertake structural transformation, buffer the domestic economy from externally transmitted shocks and accelerate growth accompanied by job creation. In line with the identified importance of economic diversification, since the period the Structural Adjustment programme was introduced in Nigeria, concerted efforts had been made to diversify Nigerian export sector by promoting non-oil exports (Ogbonna, Uwajumogu, Chijioke and Agu, 2013). The importance of this sub-sector cannot be over-emphasized. Nigeria's non-oil exports which can broadly be classified into three, namely: agricultural produce, manufactured exports and solid minerals has great potentials. It is only of recent that the export potential of solid minerals was brought to the fore. The interest to promote non-oil exports was borne out of not just its huge potentials for foreign exchange earnings, but also for its employment generation and poverty reduction capability through the extensive backward linkages it offers as well as the desire to diversify the country's production base. According to Iyoha and Oriakhi (2002), in spite of SAP, the well-publicized attempts to diversify the economy have not been successful.

Harb (2008) found that oil revenues have no long-run effect on the macro performance of the economy and as such, cannot be blamed for a bad performance of the economy, Zafar (2004) argues that volatility has become a prominent and endemic feature of the world economy, and pronounced fluctuations in commodity prices, especially oil, have had a negative effect on the

macroeconomic performance of many developing countries. He stressed that the management of volatility is very difficult in oil-exporting countries in the developing world because fiscal revenue and macroeconomic performance are highly sensitive to fluctuations in the international oil price and thereby call for diversification. (Cited by Nwanne, 2014).

The year 2009 was overcast by the global financial and economic crisis, which was precipitated in August 2007 by the collapse of the sub-prime lending market in the United States. The crisis led to the crash of most other sectors and markets across Europe with consequent effect on developing economies especially oil-export dependent countries like Nigeria. The impact was aggravated by the reduction in crude oil production, due to the persistent restiveness in the Niger Delta region and pipeline vandalism and theft. The spiral effect of the global economic crisis on Nigerian economy continued in 2009 with the exorbitant lending rate mounting pressure on the stock market as a result of massive borrowed fund in the market. It is evident from the foregoing that the recent global economic crisis has further revealed that Nigerian economy is excessively exposed to external shocks. Although various factors have been adduced to Nigeria's poor economic performance, the major problem has been the economy's continued excessive reliance on the fortunes of the oil market and the failed attempts to achieve any meaningful economic diversification, reflecting the effect of the so called "Dutch disease". The need to correct the existing structural distortions and put the economy on the path of sustainable growth through diversification of non-oil product export is therefore compelling.

A review of the Federal Government revenue profile in the last half-decade showed that oil earnings accounted for over 80.0 per cent of the foreign exchange earnings, while the non-oil sector, despite its improved performance, contributed 20.0 per cent (CBN, 2010), thus revealing the extent of the vulnerability of the economy to swings in the price of oil in the international market. The renewed emphasis on the production of Shale oil in the United States and other alternatives to fossil-fuel energy, such as solar, wind and bioenergy in the advanced economies, has reduces oil demand and price, and further weaken Nigerian earnings. Thus, in the absence of concerted efforts to shore-up and widen the revenue base, there will be reduction in crude oil revenue and excess crude oil receipts savings in the coming years with grave macroeconomic implications. The performance of the non-oil export sector such as agricultural sector, manufacturing sector and solid minerals sector in the past three decades leaves little or nothing to be desired, in spite of the efforts to promote non-oil exports in Nigeria.

Abogan, Akinola and Baruwa (2014) note that an assessment of the trend and patterns of activities in the non-oil sector of Nigeria revealed that despite the various policies, strategies and reform programmes, the contributions of the sub-sectors of this sector have been dismal, disheartening and below its full potential. The share of non-oil export in the country's total export earnings has remained very low and it was 1% in 2008 (CBN, 2008), and up 4.8% in 2013 (CBN, 2013). Ezeudu (2014) notes that recent proactive efforts from the private sector, export processing free zone scheme and Nigeria Export and Import Bank (NEXIM) especially efforts of the banking sector to finance exportation of commodities are becoming noticeable in the nation's export profile, with the traditional commodities like cocoa, being upstaged by new ones like cashew nut, ginger and sesame seed in the foreign market. This suggestion, however, needs to be empirically proved to be reasonable and acceptable. In view of this identified importance of economic diversification, this study seeks the diversification of non-oil export product as a precondition for accelerated real economic growth in Nigeria.

## EMPIRICAL REVIEW

Studies in the past have attempted to reveal the consequences of mono-product economy especially those that failed to diversify their economies in the face of increased earnings from the primary product they sell to the domestic and international market. Ahmas (2014) using a descriptive and graphical exposition uses the high differentials between capital growth and total factor productivity in the economy of resource rich countries to establish the need to importance to establish the need for economic diversification as high procced from oil has led to inefficient utilization of resources on non-productive investment. Anar (2012) in his study on political determinants of economic diversification in natural resource-rich developing countries used Breusch and Pagan Lagrangian multiplier test for random effects provides evidence of significant differences across countries in the analysis and panel random effects regression with generalized least squares (GLS) estimators. All regressions were run using robust standard errors to control for heteroskedasticity. The study used Herfindahl–Hirschman index (HHI) of export concentration as a measure of diversification, i.e. the reverse of diversification. HHI is a measure of the degree of market concentration. The larger is the score, the more concentrated the market.

Ahmed (2008) in his study on economic diversification the case of Kuwait used input-output method to measure the inter relationship between industry to determine the need and importance of diversification. The input and output method employed, provided for inter industry statistic with full recognition of interdependence of economic activities. Bitrus (2013) in his comparative and descriptive analysis of several oil producing nations, Nigeria inclusive, was able to established that economies with one product as a major source of earnings tend to have slow growth rate and are always exposed to external shock especially when that single product is primary. He posited that diversified economy increases investment in the economy as more and more sectors of the economy are brought into focus with widening economic activities. Thus, the discovery of a primary materials should not be seen as a means to abandon other relevant and important sectors of the economy as it happened in the case of those countries analysed.

Alan (2010) in his submission on economic diversification in resource rich countries posited that, the first policy message is the need to get some economy-wide “horizontal” basics right. Good macroeconomic management is critical. Failure to run a counter-cyclical fiscal policy to contain massive boom-bust cycles destabilizes the traded sectors and contributes to slow growth. Other macroeconomic policies can have only a supporting role. Exchange rate policy presents dilemmas; the most that can be sought is to prevent extended periods of over-valuation, especially on the downside of a cycle. He also posited that trade policy needs to be reasonably open, otherwise domestic spending of rent will raise prices and domestic costs, making it harder for the traded sectors to compete. It is also vital to build other types of capital (human capital and institutional, or governance, capital) to complement natural resource wealth. Diversifying sectors will not emerge without measures to bring down the costs of production in the new traded sectors, to spur efficiency and encourage new entry. Alan (2010)

Fasano and Wang (2001) posited that to decrease current expenditure of resource rich countries in order not to have negative effect on non-oil real GDP growth and engender diversification in the long run, a structural modification is needed, that results that non-oil sector development becomes independent from government spending. Reda and Fuad (2014) posited that resource

rich countries need to create a dynamic non-oil tradable sector to support sustainable growth. They argue that the failure to diversify away from oil stems mainly from market failures rather than government failures and to tackle market failures, the government needs to change the incentive structure for workers and firms. Experiences of oil exporters that managed to diversify suggest that a focus on competing in international markets and an emphasis on technological upgrade and climbing the quality ladder are crucial.

Riamundo (2012) while examining UAE and oil curse conclude that while the UAE has not been immune to the oil curse, but it has managed to make the benefits outweigh the negative outcomes of oil exporting by diversifying its economy to improve construction and real estate sector. Anar (2012) examined why some natural resource rich developing countries have been able to diversify their economies while others have failed in this. The study develops and tests several hypotheses on political and institutional, rather than purely economic and geographic, factors enabling or hindering export diversification in the resource-rich developing world between 1962 and 2010. Among other things, it suggests that international institutions designed to help these countries overcome their “resource curse” through diversification can be effective only when they are alert to the different political and institutional terrains.

## EMPIRICAL MODEL AND RESULTS

### *Model Specification*

The Normalized-Hirschman Index (NH) is used to accurately determine the sector concentration in Nigerian economy. It can be calculated as follows (Al Marhubi, 2000; Naqvi and Morimune, 2005; Ben Hamouda et al., 2006):

$$NH = \frac{\sqrt{\sum_{i=1}^N P_i^2} - \sqrt{1/N}}{1 - \sqrt{1/N}}$$

where  $P$  is  $P = \frac{x_i}{X}$ ,  $x_i$  the value of exports of commodity  $i$ ,  $X = \sum_{i=1}^N x_i$ , and  $N$  is the number of products. The NH index is a relative measure of diversity. Its extremes range from 0 to 1, in which a higher value indicates greater sector concentration. When the NH index is computed for Nigeria, the resulting values are around 0.9. This explains that the concentration is very high.

The export commodity  $i$  is petroleum, as this is where most of the wealth in Nigerian economies is derived from. In order to support the reasoning behind the oil curse, the NH index was used to show evident concentration in that sector. The Nigeria has decreased its sector concentration, as the NH index declines throughout the years. This supports the claim that economic diversification is in full effect, but further analysis is needed to delve deeper into the determinants of diversification and to see if these results are consistent with the growth model, with the overall goal of increasing total factor productivity. As in Ben Hammouda et al. (2006), a statistical model is used to determine the factors which contribute to the economic diversification of the Nigeria, while also impacting the NH index. The goal is to increase diversification by decreasing the NH index. Thus, the NH index serves as the dependent variable of this model. It is assumed that diversification is a function of different economic and non-economic variables. The basic statistical model is shown in the equation below:

$$NH = \alpha_0 + \alpha_1 INFL + \alpha_2 OPEN + \alpha_3 EXCH + \alpha_4 RGDP + \alpha_5 GFCF + \varepsilon \quad 2$$

where *NH index* is an index of diversification based on a sample of 1981 to 2014 as the data provides; *GFCF* is the gross fixed capital formation represented as per cent of GDP; *GDP per capita* is RGDP; *OPEN* is trade openness; *INFL* is inflation;

The above equation was estimated using fully modified ordinary least square (FMOLS) and other single cointegration test instruments. This method was used because of its superiority over ordinary least square (OLS) as it can run conveniently on small data points without giving spurious or unreliable result. Some estimated values resulted in insignificant figures (see Table 1). For the Reliability of the result, Dynamic OLS & canonical Cointegrating Regression test were used simultaneously which yielded the result pasted below which are not significantly different from the result of the fully modified OLS used as a tool for estimating the diversification model. From both results above, R<sup>2</sup> remains relatively the same and also with other statistical method of evaluation and the coefficients of the parameters are not significantly different under the three methods. This specifically shows the model is reliable with implication that the result is reliable for policy recommendation. The goodness of fit of the models and corresponding standard errors established that the degree of error terms is considerably minimized and hence the estimates are reliable. The parameter estimates comply with a priori expectations.

The second goal of this paper is to examine how Nigeria can try and reduce the concentration index by paying careful attention to the determinants of diversification. To create an insight into the model estimates, the variables that have a negative effect are good for helping to decrease concentration, and the variables with a positive effect will increase concentration and stall diversification. It is explained that a higher exchange rate helps to lower the NH concentration index. Higher GDP per capita is on track to raise concentration. With better allocation of oil wealth, GDP per capita will coincide with total factor productivity to have a positive impact on diversification and a negative impact on concentration. Certainly, investments in the human capital to raise GDP per capita and evenly distribute a higher skilled labour force that demands higher pay from the private sector will create a variable that will help to lower the NH concentration. Higher gross fixed capital formation has helped to lower the NH concentration, as private investment has picked up, creating an increasingly productive non-oil economy. The goal is to have capital formation evenly distributed among sectors. Fortunately, there is a trend of private capital formation among a wide variety of sectors to support greater diversification. Because of this, the model has indicated that this variable is set to help decrease the concentration ratio.



TABLE 1: ESTIMATED RESULTS FOR MACROECONOMIC DETERMINANTS OF DIVERSIFICATION

Variables	Estimation Techniques			
	<u>FMOLS</u>	<u>DOLS</u>	<u>CCR</u>	<u>OLS</u>
INFL	0.017(17.32)	0.018(2.57)	0.017(2.73)	0.013(2.405)
OPEN	3.98(1.55)	7.832(3.19)	3.83(2.03)	3.686(2.601)
EXCH	0.06(2.35)	0.004(0.915)	0.005(1.53)	0.005(1.66)
RGDP	-0.003(2.82)	-7.16(-0.057)	3.18(2.04)5	0.004(3.21)
GFCF	-12.12(-4.41)	-6.85(-1.89)	-12.5(-6.13)	-13.01(-6.87)
Constant	10.21(18.53)	8.95(13.97)	10.2(18.85)	10.36(22.58)
Adjusted R <sup>2</sup>	0.910663	0.932364	0.859327	0.894710

The results in table 1 show that inflation rate, exchange rate and trade openness had significant positive effect on economic diversification. Considering the magnitude 1 unit increase in NH (index for diversification) is brought about by 0.006 units increase in exchange rate (EXCH), 0.00004 unit increase in Gross Domestic Product (GDP), 13.0 unit decrease in gross fixed capital formation (GFCF) 0.01323 increase in inflation rate (INFL), 3.686 units increase in trade openness (OPEN). The p-value of the coefficients showed they are significant in explaining economic diversification in Nigeria except for gross fixed capital formation and gross domestic product which had negative effects. As insinuated earlier the positive relationship implies that macroeconomic instability, exchange rate depreciation and trade liberation may lead to higher concentration than diversification except there is enabling institutional framework that promotes productivity and increased human capacity development that can encourage factor mobility across sectors to generate the desired diversification. Therefore only capital formation and real economic growth could effective lead to economic diversification.

***ESTIMATION OF THRESHOLD LEVEL FOR CAPITAL FORMATION AND PER CAPITA GDP***

In addition to the above estimation technique, the study also calculated the level of gross capital formation needed to stimulate economic diversification in Nigeria. The result obtained from that effort showed that Nigeria, whose gross capital formation barely exceeds 14% except in 2002 where it was higher, requires 59% gross fixed capital formation percentage of GDP to stimulate economic diversification and 41% investment percentage of GDP is required to fast track economic diversification process in the country.

TABLE 2: ESTIMATION OF THRESHOLD LEVEL FOR CAPITAL FORMATION AND PER CAPITA GDP

Variables	Coefficient	Std. Error	t-value	P-value
C	9.746319	1.042881	9.345571	0.0000
INFLA	0.014176	0.005273	2.688620	0.0126
OPEN	3.619350	1.800082	2.010659	0.0553
GDP/POP	23958.37	6534.086	3.666675	0.0012
(GDP/POP)^2	-54489275	20402006	-2.670780	0.0131
FDI	1.49E-06	7.83E-06	0.190695	0.8503
FDI^2	-1.06E-11	2.94E-11	-0.361300	0.7209
GFCF/GDP	-7.291080	10.65710	-0.684152	0.5002
(GFCF/GDP)^2	-11.98130	22.90706	-0.523040	0.6056

F-statistic = 43.20409, Prob(F-statistic) = 0.000000, Durbin-Watson stat = 1.631153,  
 Log likelihood = -20.50148

The results presented in table 2 indicate interesting findings. To mention but a few, first, the level of investment, as percentage of GDP, is not sufficient to generate economic diversification which is estimated to be (30.42%). This can be illustrated as follows: Based on the Table (2), the estimated regression equation is as follows

$$NH = C + \alpha_1 y - \alpha_2 y^2 - \alpha_3 GFCF + \alpha_4 GFCF^2 + \alpha_5 INFLA - \alpha_6 FDI - \alpha_7 OPEN + \alpha_8 EXCH \dots \dots \dots 2$$

$$\frac{\delta NH}{\delta GFCF} = \alpha_3 + 2 \alpha_4 GFCF = 0, \quad GFCF = \frac{\alpha_3}{2\alpha_4} = \frac{7.291080}{2(11.98130)} = 30.42\%$$

A cursory observation of the trends of capital formation as documented by Central bank of Nigeria report shows that the gross fixed capita formation has hardly reached 14% for the past three decades (CBN, 2015). Therefore given the 30.4% requirement and the current average 14.0% for the past 30 years showed that Nigeria has a deficit of 16% investment/ GDP ratio and is in bad need to raise its investment rate to reach 30.42% as a minimum level for economic diversification to be beneficial to sustainable development and overcome the resource curse syndrome that provide a conducive investment and pull factor for both foreign and domestic investors. Moreover, the level of per capita income required for effective diversification process of the Nigerian economy is calculated as

$$\frac{\delta NH}{\delta y} = \alpha_3 + 2 \alpha_4 y = 0, \quad y = \frac{\alpha_3}{2\alpha_4} = \frac{23958.37}{2(54489275)} = 0.000219, \text{ which translate to } 219,844.82 \dots \dots \dots 3$$

Therefore the required per capita income for diversification to be beneficial is N219, 844.82. At 2015 exchange rate of exchange rate of N268 to a dolla,r the dollar equivalent of the per capita requirement will be \$820.3. Also, at the above per capita income, all state governments should be encouraged to pay at least N18, 320 as minimum wage for effective demand and supply for

real diversification process to take place. Though this corresponds to the current minimum wage but most states had not fully implemented the minimum wage and as at first quarter of this year more than 30 states could not pay this minimum wage.

### **CONCLUSION AND POLICY IMPLICATIONS:**

The paper has established that macroeconomic variables such as trade openness, exchange rate and private investment are key determinants of economic diversification. More importantly, it has been established that the current investment and per capital income level in Nigeria are far below the critical levels that can take the economy out of the vicious circle of poverty and enhance sustainable development. It is established that there as much as 16% deficit in investment as the economy required a minimum of 30% investment as ratio GDP. Similarly, per capital income needed to stimulate economic diversification need to be raised beyond a threshold of \$1380.3 billion for effective diversification?

The implication of these findings for sustainable economic growth is that proactive trade policy and intensive import substitution strategies are required. This supports the reasoning that macro-economic policies which foster greater economic diversification will eventually decrease the commodity concentration. Policies such as even investment, greater openness, lower inflation to stimulate domestic growth, and a better fiscal balance will help. The pressing need to diversify the economy to avoid an oil curse cannot be stressed enough. The determinants in the diversification and growth model clearly show what needs to be done. So far, it is understood that even labour distribution supports growth, as more skilled workers are evenly situated in various growth sectors. Poor economic diversity results in lower productivity and lower competitiveness as there is skewed investment concentration in the dominant sector. Volatile growth in the oil sector poses harm to an economy that is prone to economic cycles, thereby fostering cyclical growth measures evident in the policy decisions of Nigerian economy (Abouchakra et al. 2005).

The oil industry efficiency rate should be worked on for investment in the oil and non-oil sector to augment for the frequent price shock that primary product are exposed to. Though, trade openness and liberalization may not necessarily lead to diversification and economic growth but with provision of relevant institutional framework which is favourable to exchange rate, moderate inflation rate and adequate investment in infrastructural facilities provide enabling environment for private sector to employ the teeming labour force. To achieve well diversified economy a set of prerequisites should be met to name few, a proper institutional framework of adequate investment, minimum level of per capita income and highly qualified human capital are essential for effective implementation and adoption of any diversification strategies.

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#### **ABOUT THE AUTHORS:**

Olufemi Muibi Saibu is a Professor of Economics and a Macroeconomic and Development Economist. He is a Lead Research Officer with Economic & Allied Research Nigeria (EARN) Network and the Coordinator of *Financial Inclusiveness, Economic livelihood and sustainable Development* (Field) Research Group in the Department of Economics, University of Lagos..

Margret Abiola Loto is an Industrial Development Economist and an Associate Professor in the Department of Economics, University of Lagos.