ASSESSING THE NEXUS BETWEEN ECONOMIC DIVERSIFICATION AND MACROECONOMIC VARIABLES IN NIGERIA: AN EMPIRICAL EVIDENCE

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Abstract
This paper presents empirical evidence on the link between macroeconomic variables and level of economic diversity in Nigeria from 1981 to 2015. Specifically, this paper is consequential because it focuses on macroeconomic variables (GDP per capita, real exchange rate, foreign direct investment, trade liberalization and domestic credit to private sector) in influencing diversification. The model applied Hirschmann-Herfindahl Index (HHI) in determining diversity index of Nigeria. The Vector Autoregressive (VAR) model and the impulse response function model were used to find out how shocks in the macro variables affects diversification index. The direction of causality was determined using the Granger Causality test. From the HHI, the Nigerian economy remains undiversified but the economy recorded tremendous improvement in 2009, 2011 and 2012.The effect of GDP per capita and trade liberalization to diversification index is fluctuating. More than half the time the effects are negative. Domestic credit to private sector and real exchange rate does have a smooth and positive effect on diversification index. The Granger causality test shows a unidirectional causality that flows from GDP per capita, real exchange rate, foreign direct investment to diversification index. A diversification policy that places priority on agriculture, industry and service sectors is recommended. An overvalued exchange rate discourages investors and hinders private sector development. Therefore, government policies should be towards attaining an optimum exchange rate.

Key words: Hirschmann-Herfindahl Index, Vector Autoregression, Granger causality, Diversification Index

Introduction
Over the past five decades, Nigeria has operated a mono-economy mainly depending on crude oil for most of its revenue for the general well-being of the country. Prior to the discovery of crude oil, agriculture was the pillar of the economy contributing about 65% to gross domestic product (GDP) and 70% of total exports (Olajide, Akinlabi and Tijani, 2012).Most of the country's foreign exchange at that time came from the exports of groundnuts, cocoa, palm oil and other agricultural commodities. Amazingly, the country was self-sufficient in feeding its citizens and the economy was self-sustaining at the time. The revenue derived from agriculture was used to build critical infrastructure in education, health and roads (Paul, 2015). Unfortunately, the neglect of this once thriving sector in favour of crude oil not only left the economy vulnerable to external shock (Mehrara and Oskoui, 2007) but also inhibit the development of all other sector that are necessary for sustainable development (Uzonwanne, 2015).

The advantages of diversifying an economy are enormous; some of which include provision of employment, increase productivity, ensure economic stability and growth and favorable balance of trade. According to Anyaehie and Areji (2015) economic diversification generally enhance the overall performance of the economy, spread risk against price volatility, and provide alternative streams of income. This was empirically confirmed by United Nations Development Programme's (UNDP) findings that countries with more diversified structures proved more capable of absorbing the shocks from the recession as it was the case in the 2008/2009 economic recession (UNDP, 2011). A diversified economy will offer numerous employment opportunities, reducing the crime associated with unemployment thereby enhancing defence and security.

There is a general agreement that factors that influence economic diversification in countries differs. This may be as a result of differences in economic, geographical, demographic and institutional framework. Bloom, Sachs, Collier and Udry (1998) asserts that African economies have remained largely undiversified because of unfavourable geography. Dennis and Shepherd (2007) used export diversification as a measure of economic diversification. They were able to establish that a reduction in import, international transport and market entry cost had a positive effect on economic

diversification. Similarly, Malik and Temple (2009) found that market access, climate variability and geography had a strong effect on economic diversification.

Studies have tried to highlight some of the variables that are important in diversifying an economy. Olanrinde and Iyoboyi (2014) emphasized the importance of GDP per capita, consumer price index and money supply. Ayawale (2007) opined the importance of trade openness and exchange rate while Acemoglu and Zilibotti (1997) focused on economic structure as a means of determining diversification. Acemoglu and Zilibotti (1997) further provided a theoretical model which proposes that countries with highly concentrated productive structures make entrepreneurs to lack motivation for innovation because it is risky and expensive to embark on investment. According to them economic diversification especially in developing nations is affected by market failures which makes it difficult for investors to operate as it provides no incentives to invest in new economic activities (Klinger & Lederman, 2010). Such market failures as found by Verter and Becvarova (2016) does not only affect the risk and investment decision among private investors but also affect the level at which a sector has sustainable impact on economic growth. In their study of the impact of agricultural exports on economic growth in Nigeria, Verter and Becvarova (2016) observed that although agricultural export has the potential of having significant positive effect on growth in Nigeria however such effect has been inconsistent over the years.

This paper uses the Hirschmann-Herfindahl Index (HHI) to provide empirical evidence on the link between economic diversity and macroeconomic variables in Nigeria. The VAR impulse response function was also used to examine the source and response of economic diversification to shock in macroeconomic variables.

Literature Review

Several literatures have discussed the need for Nigeria economy to be diversified. Gunu and Kilishi (2010) for instance examined the impact oil price shock on real gross domestic product, unemployment consumer price index and money supply in Nigeria. Apart from consumer price index the study found that oil price has significant impact on the other three vital variables to the Nigerian economy. This buttress the nature and extent of

vulnerability of the Nigeria economy to external shocks hence they stress the need for the country to diversify the economy. To maintain control of the economy some key economic variables must be domestically controlled. Abdullahi, Fakunmoju and Giwa (2017) also observed that the inability of the monetary policy to ensure a stable balance of payment and local currency and ensure sustained growth in GDP is traceable to over dependence on imported goods.

Aliyu (2009) assess the impact of shock in the price of oil and volatility in exchange rate on economic growth in Nigeria. Using the Johansen VAR-based co-integration technique and the vector error correction model to examine the sensitivity of economic growth to changes in dependent variables in the long run and short run dynamics respectively, the study found that both oil price shock and appreciation in the level of exchange rate have positive and significant effect on economic growth in Nigeria. Base on its findings the paper encouraged the diversification of the economy through investment in major productive sector so as to reduce the effect of external influence in the economy.

Adopting the right reform on macroeconomic variables is essential in determining economic performance (Paolo, et al., 2011). Karahan (2017) studied export diversification in emerging countries and observed that in the case of emerging countries, countries that have concentrated export has high tendency of experiencing trade collapse in the advent of crises. The study opined that the negative correlation between product diversification and the size of trade collapse in Nigeria can be attributed to over reliance on crude oil for export. Similarly, Suut and Tekce (2011) examined the relationship between trade liberalization and economic diversification in eight selected Middle East and North African countries from 1991 to 2009. The results revealed that the effect of trade liberalization through the World Trade Organization (WTO) and other trade agreement enhanced economic diversification in these countries.

In line with the trade liberalization concept as a means for diversification, Ayanwale (2007) investigated the relationship between non-extractive foreign direct investment (FDI) and economic growth in Nigeria. The result of the study shows that market size, infrastructural development and stable macroeconomic policy are major determinant of FDI in Nigeria while openness to trade and human capital do not induce FDI to the country. The

result also shows that effect of non-extractive FDI on economic growth though not significant but positive. However, FDI has significant effect on the communication sector and manufacturing sector. The effect of FDI and liberalization in aiding diversification is debatable. Bergin and Pyun (2012) for instance observed that investor bias affects effective diversification because investors tend to prefer to invest in market where they are much more familiar with. With the help of the multi-country general equilibrium of portfolio choice the study observed that equity holders tend to gravitate towards country with high diversification benefits.

Using a fully modified ordinary least squares and autoregressive distributed lag model, Olarinde and Iyoboyi (2014) examined whether trade liberalization drives economic diversification. The study added other control variables like economic reforms, exchange rate, technology, infrastructure and GDP per capita. Their results showed that trade liberalization, economic reforms, infrastructure and GDP per capita were statistically significant and have positive impact on diversification, while exchange rate and technological transfer were statistically significant but inversely related with diversification. They also established a bidirectional causality between trade liberalization and economic diversification. Similar to their findings Tang and Zhang (2012) discovered that gains in exchange rate have a negative impact on economic diversification. Earlier study by Shafaeddin (1994) who analysed the impact of trade liberalization on economic diversification among the least developing countries, found that there is no significant relationship between trade liberalization and economic diversification.

Adesoye, Adelowokan, Maku and Salau (2018) stressed the importance of domestic investment as a means of sustainable diversification. Their study examined the contribution of an enhanced agricultural value chain on economic growth in Nigeria. Using the autoregressive distributive lag (ARDL) model the study found that expenditure on agriculture in the area of improved raw materials and seedlings, machinery and land tend to have positive and significant impact on agricultural productivity in Nigeria. According to the study improved agricultural productivity leads to economic diversification because the feedback mechanism of value chain increases output in the Nigerian agricultural sector. Other studies carried out elsewhere also show the importance of domestic investment. Hautz, Mayer and Stadler (2013) for example, studied the impact of macroeconomic growth and foreign

competition on diversification in Europe. They observed that greater foreign competition reduces the rate of product diversification in the domestic market but foster diversification in the international market. On the other hand, they also observed that macroeconomic growth has a positive impact on domestic diversification and a negative effect on international diversification.

Apart from macroeconomic variables, Anyaehie and Areji (2015) in their study on economic diversification for sustainable development in Nigeria observed that other challenges to diversification in Nigeria include; poor investment decision, poor infrastructure, weak governance and institutions, endemic corruption and unstable educational system. The ineptitude in the diversification effort they maintained exposes the nation both economic and social instability as it becomes the nation to accommodate large number of people and cannot sustain the basic needs of its citizens. Thus, diversification is a necessary tool if a country wants to protect itself from crises and shocks that may emanate from the international market or politics. Other studies have sought to explain the effect of political institutional qualities on economic diversification. Cuberes and Jerzmanowski (2009) conclude that political regime type, quantify as either democracy or non-democracy can strongly explain diversification. Anyaehie and Areji (2015) opined that government commitment to the policy of diversification plays a crucial role on whether a country follows through to diversify the economy. In Nigeria for instance, weak institutions and unfavourable climate that aids private investment are factors that tends to inhibit the effect of diversification on economic development.

With the fall in oil prices and the recession that emerged (Uzonwanne, 2015), the Nigerian government has revisited the long talked economic diversification by boosting agriculture through the private sector and opening up of the mining sector. However, government has never showed any statistics measuring the extent of our economic diversity. There is limited empirical work to support the relationship between Nigeria's economic diversity and factors that influence it. Onodugo, Amujiri and Nwuba (2015) identified and discussed major determinants of economic diversification such as investment, good governance, regional structure, human and natural resources. They maintained that of all the factors that influence diversification, good governance is a *sine qua non* to economic diversification. Yet they had no empirical evidence to support their argument. It is necessary to present a

systematic analysis of the relationship between diversification index and macroeconomic variables in Nigeria.

Although these studies looked at how changes in macroeconomics variables and major sectors could have positive contribution to the diversification of the economy, none of these literatures examine the effect on the diversification index. The use of diversification index is important because it measures the extent to which diversification is implied when there is a change in any macroeconomic variable.

Data Source and Method

This study use data from the sectoral contributions of agriculture, industry, construction, trade and services to the GDP from 1981 to 2015 to compute the diversification index (DI). The data were obtained from the National Bureau of Statistics [NBS] (2016).The sectors are divided into five as provided by the NBS report and are suitable for this study because they reflect the contributions of each sector to the GDP of the Nigerian economy and therefore can be used to analyze its diversity.

Data for gross domestic product per capita (GDPC), real exchange rate (RER), foreign direct investment (FDI), trade liberalization (TL) and domestic credit to private sector (DCP) were sourced from the World Development indicators database of the World Bank for the period 1981 to 2015. FDI, TL and DCP were measured as a percentage of GDP.

The Hirschmann-Herfindahl Index (HHI) was used to compute the diversification index. The HHI was first used by Hirschmann (1945) and Herfindahl (1950) and was later extended by Tauer (1992) to measure economic diversity. The HHI measures the magnitude which the market, work or employment is broadened within an economy. It estimates the level at which a particular economy is control by a sector. The HHI is presented mathematically as:

$$HHI = \sum_{i=1}^{n} S_i^2 \qquad (1)$$

where S_i^{n} is the share of economic activity in sector i of the total economy and n is the number of sectors in the economy. The value of the index ranges from zero to one, with zero assuming a perfectly diversified economy and one a perfectly undiversified economy. A HHI below 0.01 indicates a highly competitive and highly diversified economy. A HHI below 0.1 shows a

moderately diversified economy. Similarly, a HHI above 0.18 indicate a highly undiversified economy. The yearly contribution of agriculture, industry, construction, trade and service sectors to the GDP was used to compute the diversification index (HHI).

Like any time series data, it is important to determine the time series properties of the data. In this case we used the Augmented Dickey Fuller (ADF) test to determine the stationarity. This is because if variables are non-stationary, suitable properties of consistency, efficiency and unbiasedness will be lost which will lead to spurious regression. The problem of non-stationary data can be tackled by differencing time series data. The ADF test constructs a parametric correction for higher order correlation by assuming that the time series follows an autoregressive (AR) process up to a K_{th} order as shown below.

$$\Delta y_t = \alpha + \sum_{j=1}^{k} \gamma_j \Delta y_{t-j} + \varphi_t + \varepsilon_t \qquad (2)$$

Where y_t is time series, Δ is the first α is the linear trend, and is the error term. The null hypothesis of ADF test is the presence of unit root and the alternative hypothesis is stationary. The decision rule is that when the absolute value of the test statistics is greater than the absolute critical value we reject the null hypothesis of unit root.

In this study, the method of vector autoregression was used to test for the relationship of the variables. Granger causality test was also employed to determine the influence or direction of causality between the dependent variable (diversification index) and the explanatory variables (GDP per capita, real exchange rate, foreign direct investment, trade liberation, and domestic credit to private sector). Typically, the regression model is represented as:

$$DI_t = \alpha + \beta_1 GDPC_t + \beta_2 RER_t + \beta_3 FDI_t + \beta_4 TL_t + \beta_5 DCP_t + \varepsilon_t \qquad (3)$$

Where DI is the diversification index derived from the HHI; GDPC is the gross domestic product per capita; RER is the real exchange rate; FDI is the ratio of foreign direct investment to GDP; TL is the trade liberalization- the trade liberalization measures the degree of openness of the economy. It is the ratio of import/export to GDP; DCP is the ratio of the share of domestic credit to GDP; ε_t is the error term; $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are parameters that measure the degree of impact of each of the macroeconomic variables on the diversification index.

The VAR was first used by Sims (1980) as an approach to determine joint

dynamic behavior of collection of variables without requiring strong restrictions of the kind needed to identify structural parameters. A VAR is an n-equation with n-variable linear model in which each variable is in turn explained by its own lagged values, plus current and past values of the remaining n-1 variables. This simple framework provides a systematic way to capture rich dynamics in multiple time series. A typical VAR model is presented below:

$$y_t = c + \emptyset_1 y_{t-1} + \cdots + \emptyset_p y_{t-p} + \varepsilon_t \qquad (4)$$

Where c is a k x 1 vector of constants (intercept), $\emptyset_i$ is a k x k matrix (for every i = 1, …, p) and ε_t y_{t-i} is a *k* x 1 vector of error terms. The *i* period back observation y_t is called the *i* th lag of *y*.

It is often hard to interpret the coefficients of VAR model, most especially if it includes many variables and lags which usually lead to problem of identification making it difficult to ascertain dynamics between the variables one wishes to examine. To overcome this problem, we use the impulse response function (IRF) which gives the estimated VAR model an explicit economic interpretation. The IRF refers to the reaction of any dynamic system in response to some external change. The IRFs has two main outputs: the expected level of the shock in a given period surrounded by a 95% confidence interval.

The selection of the appropriate lag order is the next step. Vector autoregression is a dynamic process and economic theory is handicap in determining the lag length. Therefore, there is need to rely on the major lag selection test which are Akaike Information Criterion (AIC), the Schwarz Bayesian Criterion (SBC) and the Hanna and Quinn Criterion (HQC).

A common diagnostic for a VAR is the granger causality test. It considers how each variable plays a significant role in the system. A general specification of the Granger causality test in a two-variable model X and Y can be expressed as:

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \cdots + \alpha_i Y_{t-i} + \beta_1 X_{t-1} + \cdots + \beta_i X_{t-i} + \varepsilon_t \qquad (5)$$

$$X_t = \alpha_0 + \alpha_1 X_{t-1} + \cdots + \alpha_i X_{t-i} + \beta_1 Y_{t-1} + \cdots + \beta_i Y_{t-i} + \varepsilon_t \qquad (6)$$

Where is ε_t the white noise.
We can obtain two tests from this analysis. Equation (5) explore a null hypothesis that X does not granger cause Y and (6) examines the null

hypothesis that Y does not granger cause X. if we reject the null of equation (5) and refuse to reject the null of equation (6), it means Y changes are granger caused by X in equation (5) but X changes are not granger caused by Y in equation (6). Unidirectional causality will take place between two variables if either the null hypothesis of equation (5) or (6) is rejected. Bidirectional causality exists if both null hypotheses are rejected. No causality exists if neither the null hypothesis of the two equations is rejected.

Results and Discussion

Table 1 is the summary statistics of all the sectors that constitute the Nigerian economy. The table shows that the service and industry sectors contribute the most in the period under consideration with a combined contribution 60 percent to GDP.

Table 1   Sectoral contribution to GDP from 1981 – 2015

Sector	% of sector contribution to GDP	Mean contribution by sector in billions of naira
Agriculture	22.41	7088.91
Industry	30.04	9499.25
Construction	2.98	942.05
Trade	14.00	4427.74
Services	30.57	9669.28

Source: author's computation using data from the NBS

The implication of the output in Table 1 means that the service sectors provide the highest employment especially among the educated. The result also gives credence to the fact that agricultural has a great potential in improving the nation's economy. In addition, as pointed by Izogo and Ogba (2015) most private investment are tinted towards the service sector. This may be responsible for the low contribution of the construction sector.

Table 2 shows the summary statistics of the diversification index (DI), gross domestic product per capita (GDPC), real exchange rate (RER), foreign direct investment (FDI), trade liberalization (TL) and the ratio of the share of domestic credit to GDP (DCP).

Table 2   Summary statistics of the variables

Var iable	Observation	Mean	Std. Dev.	Min	Max
DI	35	0.27	0.02	0.25	0.30
GDPC	35	870. 54	915.73	153. 07	3203.24
RE R	35	154.34	126.71	49.79	546.04
FDI	35	3.01	2.27	0.65	10.83
T L	35	51.13	16.58	21.45	81.81
DCP	35	15.08	6.17	8.71	38.39

Source: autho r's computation from World Bank database

Table 2 shows a high standard deviation GDPC and RER implying a wide spread about the mean which connote high increase of the variables over time. The change in DI and FDI form its mean however remains moderate.

The annual diversification index for Nigeria using the HHI from 1981 to 2015 is shown in Fig 1. The result from the HHI shows that there is a high market and employment concentration which implies a less competitive and a less diversified economy. Within this period, the Nigerian economy attained its highest diversity in 2009, 2011 and 2012 with a HHI of 0.26 (even though a HHI of 0.26 represents an undiversified economy). The year 1990 represent a period that the economy was highly undiversified with a HHI of 0.3and it correlates with the period of high oil price.

Figure 1   Hirschmann-Herfindahl Index
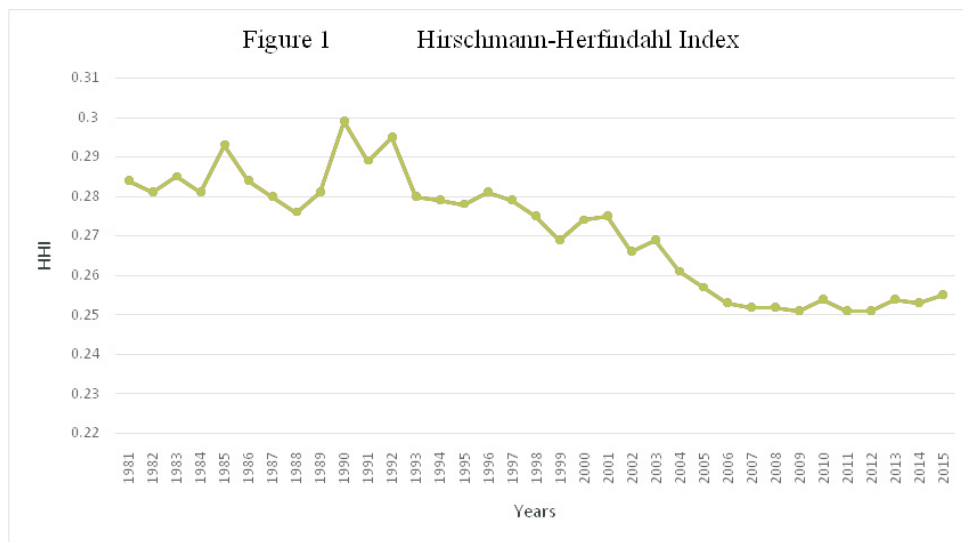
Source: author's computation

The result in figure 1 shows that the period with low diversity falls within the period of the military rule characterize by low private investment, trade openness and foreign investment. This result concurs with the works of Cuberes and Jerzmanowski (2009) who observed that countries that are practicing democracy fare better in terms of diversification than those that are non-democratic.

The result for the ADF test shows that the log of all the variables had unit root at levels except that of domestic credit to private sector which was stationary. The other variables became stationary at first difference. This can be seen in table 3.

Table 3   Augmented Dickey Fuller (ADF) test

Variable	ADF T-Statistics at first difference	ADF critical values at 5%	Order o f integr atio n
? DI	-4.10	-2.98	I (1)
? GDPC	-3.61	-2.98	I (1)
? RER	-3.63	-2.98	I (1)
? FDI	-4.25	-2.98	I (1)
? TL	-3.66	-2.98	I (1)
DCP	-3.06	-2.98	I (0)

Source: computed from data obtained from NBS and World Bank

From table 3, we can infer that the variables are stationary at order one except for DCP and therefore suitable for inclusion in the VAR. The VAR model was chosen because the study is interested in the interrelationship among the variables of concern. The next crucial step in estimating a VAR is in deciding the right lag order. Using three decision criteria; the AIC, HQIC and SBIC the appropriate lag for the VAR system of equation is shown in table 4

Table 4   Lag order selection

Lag	AIC	HQIC	SBIC
0	1.99	2.08	2.27
1	2.84*	2.20*	0.93*
2	2.78	1.59	0.76

Source: computed from NBS and World Bank database. *means a lag length of 1 using the AIC, HQIC, and SBIC

Table 4 shows the appropriate lag length for the system of equation for all the variables to be 1. After establishing the appropriate lag length as indicated in table 4, we proceeded to running the VAR impulse response function. The impulse response function of VAR reveals the dynamic effects of the system when the model received an impulse. The impulse response is important here because it shows how a particular variable react to a one standard deviation positive shock of another variable. Figure 2 to 6 depict the response of Nigeria's diversity index to shocks in gross domestic product per capita (GDPC), real exchange rate (RER), foreign direct investment (FDI), trade liberalization (TL) and the ratio of the share of domestic credit to GDP (DCP).

Figure 2

Response of DI to GDPC

Source: Author's computation
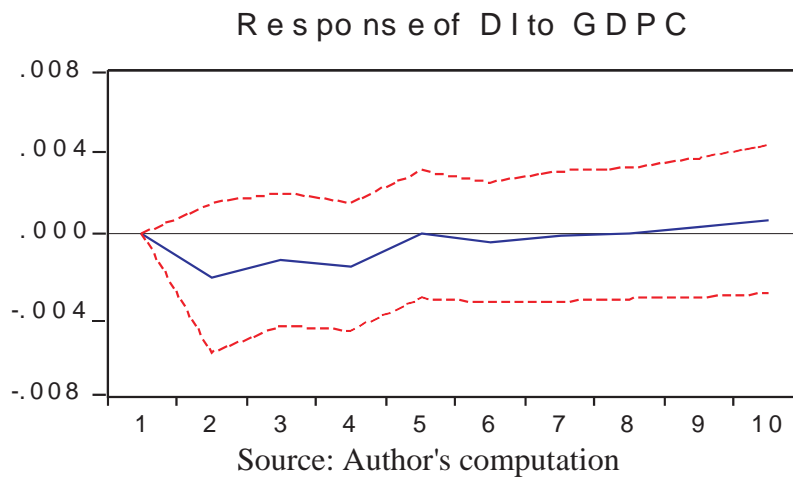
In figure 2 the response of DI to a one standard deviation shock on GDP per capita was negative for the first five years and the positive for the last three years. The change from negative to positive is not surprising because when per capita income is low it is quite difficult for the economy to be diversified due to low demand and low private investment.

Figure 3

Response of DI to RER

Source: Author's computation
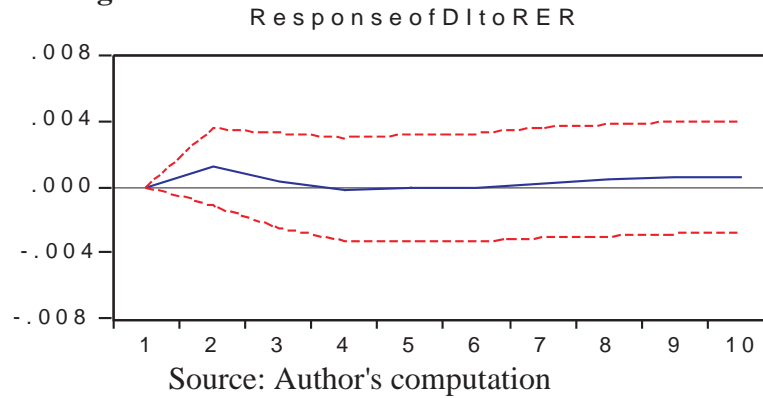
In figure 3, when the impulse innovation is made on RER, the response of DI is positive, then neutral and back to positive. The fluctuation of the effect of real exchange rate on the countries diversity is attributed to instability in the exchange rate. Although the effect in almost all the period was positive but the rate of response was slow and small.

Figure 4

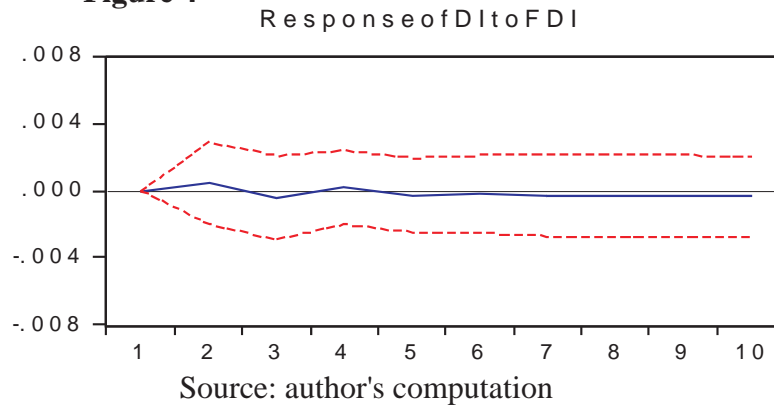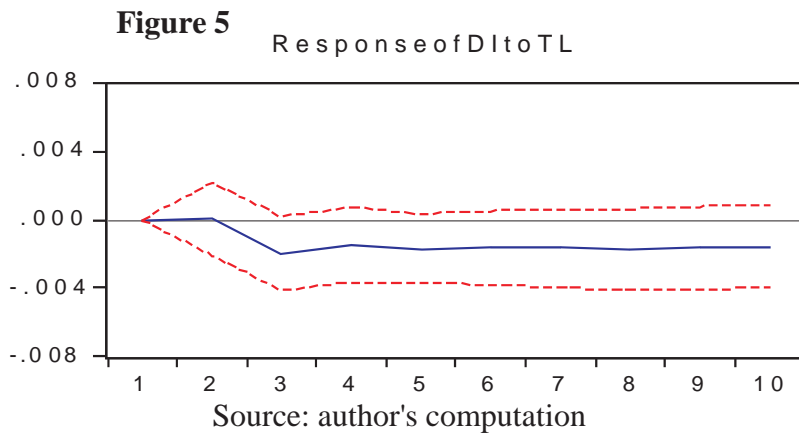

Response of DI to FDI

Source: author's computation

Figure 4 depicts a positive shock of one standard error from FDI will cause DI to respond positively in the first year, irresponsive between the third and the fourth year and slightly negative for the rest of the time.

Figure 5

Response of DI to TL

Source: author's computation

From fig 5, the reaction of DI to an impulse from TL is neutral from the initial period and remains negative throughout. This implies that trade liberalization decreases the tendency for the country to diversify. This is due to the fact that most of Nigeria's imports are consumable goods that can be produced locally. Thus, trade openness tends to reduce the drive for local production.

Figure 6

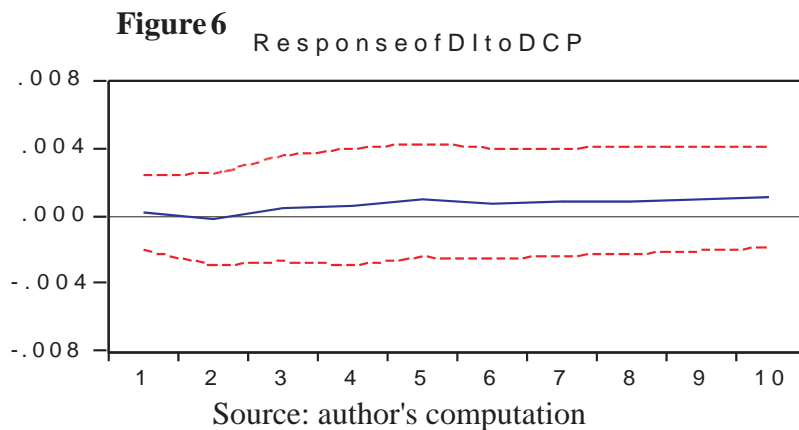Response of DI to DCP

Source: author's computation

Figure 6 shows that when one standard deviation positive shock is made on domestic credit to private sector. For the first year, DI is irresponsive, slide to a bid negative and positive for the remaining eight years. To ensure the reliability and stability of the VAR estimate, we carried out a robustness check using unit circle test.

Figure 7   Robustness Check
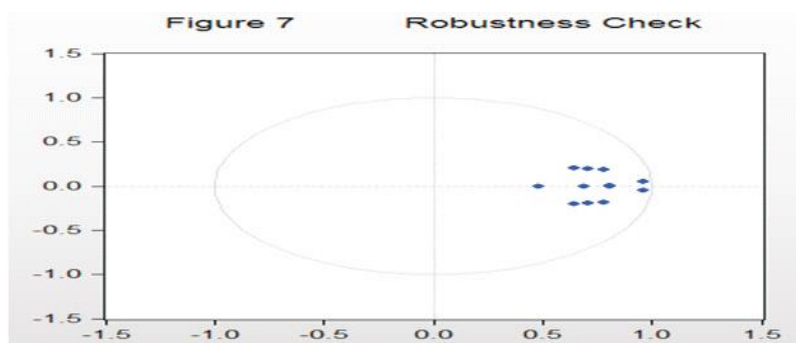
From figure 7 the robustness check revealed that all the points are within the circle which shows that the VAR estimates are stable and reliable.

The result of the Granger causality test is revealing. The null hypothesis of non-causality between the diversification index and the explanatory variables is rejected at 5% level of significance except for domestic credit to private sector. This is can be seen in table 5.

Table 5   Granger causality test

Null hypothesis	F-test	Probability	Decision
GDPC do not Granger cause DI	1.77	0.032[*]	Reject the null
RER do not Granger cause DI	1.26	0.042[*]	Reject the null
FDI do not Granger cause DI	1.08	0.020*	Reject the null
TL do not Granger cause DI	1.30	0.050*	Reject the null
DCP do not Granger cause DI	1.60	0.089	Do not reject the null

Note: *denotes 5% level of significance   Source: author's computation

There exists a unidirectional causal relationship between the diversification index and GDP per capita running from GDP per capita to diversification index. This signifies the fact that with a rise in GDP per capita, Nigeria will experience structural transformation which will have positive effect on the manufacturing share further enhancing economic diversification. A unidirectional causal relationship is also established between diversification index and real exchange rate running from the later to the former. Similarly, the relationship between diversification index and foreign direct investment is unidirectional. Diversification index and trade liberalization are causally related running from trade liberalization to diversification index.

Conclusion

This paper examined the extent to which the Nigerian economy is diversified, establish factors that influence its diversification and determine the nature of relationship between the factors and the diversification index. The Nigerian economy remained undiversified throughout this period of study having its worst HHI of 0.3 in 1990 and recorded remarkable achievement of 0.25 in 2009, 2011 and 2012. The effect of GDP per capita, real exchange rate, foreign direct investment and domestic credit to private sector in predicting diversification are significant while trade liberalization has no effect. The granger causality test shows that there is a unidirectional causality flowing from all the variables to diversification index except domestic credit to private sector which is insignificant.

The service sector is dominating Nigeria's economic diversification with an undeveloped agricultural and industrial base. What is needed at this time is a diversification policy that transforms the economy at each level of development and time from agriculture to industry and then services. The result of this study conforms with the findings Abdullahi, Fakunmoju and Giwa (2017) who used VECM granger causality to establish that bidirectional relationship between exchange rate and balance of payment. Although their study implicitly connotes that fall in exchange rate tends to leads to poor balance of payment which is mostly due to overdependence on imported goods. This study used a more direct approach to access the influence of exchange rate on economic diversification in Nigeria. This direct approach implies that the extent to which exchange rate affect economic diversification can easily be observed. The findings of this paper clearly show that a fairly valued exchange rate is needed for economic diversification.

In addition, a fairly valued exchange rate has become necessary because the Nigerian economy is highly specialized in the oil industry with little or no effort put towards developing the potentials of other sectors. This dominancy by a particular industry causes a real currency appreciation which discourages incentives to invest in other sectors. Such currency overvaluation would worsen the disequilibrium in the relative price of trade and non-tradable goods. This will ultimately affect diversification. On the other hand, an undervalued exchange rate may lead to gains in the short term but such gains are only temporal since the cancel out by long term disadvantage of an

ineffective allocation of resources.

Foreign direct investment should be enhanced. Nigeria's policies and practices should be aimed at reducing investors cost and the perceived risk associated with the investment as well as creating an investment climate conducive for the economy to benefit from such investment. FDI attracted into the country should be judiciously used. It should be channeled to primary undiversified sectors and other higher value chain activities. For FDI to be absorb and efficiently utilized, there should be massive investment in human capital development (skilled and unskilled work force), infrastructure and productive capacity.

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