# 14

# Dynamic Effects of Export Diversification on Economic Growth in Nigeria: A Test of Structural Stability

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## Abstract

*R*ecent economic downturn in Nigeria occasioned by fallen oil prices at the international market has led to the resurgence of interest on export diversification as one of the most important economic policy objectives of development strategies. The realism of whether export diversification could guarantee economic stability and sustainability, enhance revenue expansion and improve value-addition to result to economic growth has remained a conceptual puzzle. This study is conducted with the objective of investigating the dynamic effects of export diversification on economic growth in Nigeria for the period 1970 – 2015. The fourty-six (46) year period of investigation was bifurcated into two main periods: short-run periods of Pre-SAP (1970 – 1985) and Post-SAP (1986 – 2015) in order to ascertain whether there was a structural change in the relationship between export diversification and economic growth in Nigeria. A Chow test of equality between sets of coefficients in two linear regressions was adopted while the Herfindahl index of Diversification was used to measure the extent of export concentration in Nigeria. Adopting an Error Correction Model (ECM) as a technique of analysis, the study exploits time-series data to estimate both the short-run and long-run dynamic relationship between export diversification and economic growth in Nigeria for the period of investigation. Results show that in both time horizons, there was high degree of export concentration – particularly primary product exports and that there was no structural stability in the relationship between export diversification and economic growth in Nigeria The study concludes with recommendations such as getting the country-wide "horizontal basics", sound trade and exchange rate policies, strong institutions, expanding the range of export goods and diversifying the economy into non-oil exports such as manufacturing and services.

**Key words:** Export Diversification, Economic Growth, Structural Stability, Chow Test

## INTRODUCTION

Recent economic downturn in Nigeria occasioned by fallen oil prices at the international market has led to the resurgence of interest on export diversification as one of the most important economic policy objectives of development strategies. The other, is the concern for an examination of the critical determinants that drive the process of export diversification. "Sowing the seeds of the oil" sector to diversify the Nigerian economy has been a longstanding goal for several decades. However, the impact of oil rents on economic growth has been the subject of debate. Three main complications arise in the analysis: First, how to deal with the potential endogeneity of measures of oil resource abundance and resource dependence; second, how to measure outcomes; and third, how to allow for country heterogeneity

The concept of export diversification came to the fore front of economic literature during the second half of the twentieth century in opposition to the classical and neoclassical theories of foreign trade. It relates to the positive impact of trade diversification on economic growth of a country. In the periods prior to the First World War (WW1), the functioning of international trade was inspired by classical and neoclassical economic theories.. During those periods, trade relations among countries were based on the specialization, barrier-free trade and comparative advantage of those countries involved in international trade. After the collapse of colonization, the first attempt at addressing the needs for developing countries to increase the variety of their export basket was pioneered by Prebisch (1950) and Singer (1950) who contended that excessive dependence of developing countries on exports of a few commodities to several countries may have a negative impact on the macro economy. Guided by this hypothesis, many developing countries in Latin America, Africa and South Asia had employed as their main development strategies those favouring import substitution based on restrictive trade policies for economic diversification during the 1950s – 1970s. From the 1950s, the success of China, India and the East Asian "Tigers" made this viewpoint of economic diversification through import substitution to change towards export expansion and outward orientation. As a consequence, countries with undiversified export structure face a common problem of dependence on exports of primary commodities which leads to high vulnerability to different types of outer risks. These countries experience slowdown of economic growth rates and terms of trade deterioration when negative commodity shocks hit the world prices. Apart from the deterioration in terms of trade, countries with high degree of export concentration tends to have an unstable macro economy, which can be reduced by export diversification and improvement in their allocative efficiency and sustainable export earnings. However, as Khinger and Lederman (2006) and Cabellero and Cowam (2006) show, countries' export structures follows the same pattern of development of their domestic production: as countries get more and more developed, their domestic production changes to a more concentrated structure after some point. This finding raises the question as to whether or not, developed countries change from diversified exports to a more concentrated one that is beneficial to their economic growth.

While issues of export diversification as a means of development and growth became important in economics only in the 1950s when the world began to view dependence on primary products as harmful to growth occasioned by volatile price and low elasticity of demand, the portfolio effect theory of Ross (1999) show evidence of an extent to which export instability problem can be managed with a mix of investment and its variances. The rest of the paper is structured as follows: section 2 presents a review of the literature; section 3 gives the methodology of the study and model specification; section 4 presents the empirical findings and discussion of results. Summary of major finding and policy recommendations are presented in section 5

**LITERATURE REVIEW**

Conceptually, export diversification as defined by Berthelemy and Chauvin (2000) is the spread of production over many sectors. This definition implies that export diversification takes place when a country extends its structure of production across product-lines. As Samen (2010) argued, export diversification is the progression from traditional to non-traditional exports. This means changing the structure of production from primary products to manufactured products.

In the trade literature, export diversification usually takes several dimensions and can be analyzed at different levels. However, there are two well-known forms of export diversification, namely: horizontal and vertical diversification. According to Samen (2010), the horizontal diversification takes place within the same sector (and could be primary, secondary or tertiary). It entails an adjustment in the country's export mix by adding new products on existing export baskets within the same sector with the hope of mitigating the adverse economic and political effects. On the other hand, Samen (2010) defined vertical export diversification to include processing of domestic manufactured goods and entails a shift from primary to secondary or tertiary sector. It also entails contriving further uses for existing products by means of increased value added activities such as processing, marketing or other services. Vertical export diversification helps to expand market opportunities for raw materials as well as enhancing growth and stability. A third concept of diagonal export diversification was later added. According to Samen (2010), it entails a shift from imported input into secondary and tertiary sector.

Export diversification is critical for a variety of reasons. At the micro level, export diversification helps firms to be more efficient than their counterparts selling primarily on domestic markets and exporting firms serves as conduit for technology transfer and in generating technological spillovers with positive backward and forward linkages in the domestic economy. At the macro level, export diversification help to generate foreign exchange, its receipts are crucial to finance imports and exports as well as exploring larger markets scales. Export diversification also helps to contribute to employment and growth of national product.

Empirically, the posited positive relationship between export diversification and economic growth is not always revealed in the literature. For instance, In the case of developing countries, Hesse (2008) observed that the effect of export diversification is dependent on the income level of a country. He shows a positive relationship between export diversification and per capita income growth which is non-linear. The established non-linearity in the diversified export basket is realistic for developing countries as it contributes to growth, whereas, specialization is of greater benefits to developed countries. He argues that export concentration is detrimental to per capita income growth. On the contrary, Hesse's suggestion that income level of a country depends on export diversification is inconclusive because there are other macroeconomic variables that positively affect GDP growth. Moreover, there is no limit to export diversification since technology continually evolves almost on a daily basis. Therefore, export diversification and value addition are continually necessary to both developed and developing countries in this dynamic world.

Further studies on developing countries such as Imbs and Wacziang (2003), De Benedicts, Gallegati, and Tamberi (2009), Parteka (2007), Cadot, Carrere and Strauss-Khan (2007) and Koren and Tenreyro (2007), using per capita income variable suggest that, in developing countries, there is a monotonic increasing relationship between the level of development and export diversification. Stressing the importance of export diversification, World Trade Organization (2010) opined that diversification of countries export base increases local

production, employment income and economic growth. It warned that developing countries that export large amounts of a small number of products have export revenues that are quite volatile. Also, Feentra and Kee (2008) examined the relationship between changes in export variety and economic growth across sixteen (16) sectors in South Korea and Taiwan over the period 1975 – 1991 in order to ascertain the linkages between changes in export variety and growth in total factor productivity. The study found positive and significant impact of export variety on productivity.

In another study, Agosin (2006) investigated the explanatory power of export diversification using cross-sectional data for Asian and Latin American countries for the period 1980 – 2003. The study adopted a growth model and found that export growth was not enough to propel economic growth, but that growth together with impact of diversification appears to be significant. According to the study, diversification and export growth has the expected sign and were statistically significant with strong explanatory power. The study concludes that export diversification will enhance economic growth through changes in export composition and expanded comparative advantage.

In testing the validity of export-led growth hypothesis for three Asian countries of Bangladesh, Nepal and Myanmar, ESCAP (2004) confirmed the presence of positive relationship between diversification and economic growth and concluded that diversification is a significant factor that determines economic growth. The result shows that export growth accelerates the process of development in the three countries.

In some other group of countries such as organization for economic cooperation and development (OECD) countries, Savietti and Franken (2008), using panel data from OECD countries showed that export diversification can have a positive effect for developed countries. They found out that both horizontal and vertical diversification have a positive impact on economic growth. The study also presents evidence that diversifying the export basket horizontally has immediate effect on economic performance while it takes time for vertical diversification to affect economic growth positively. Vertical diversification can potentially be deterred by adjustment cost and technological barrier. Nevertheless, it is good to undertake this type of diversification since at a certain stage, the rate of horizontal diversification's return will start to diminish.

At the regional level, Matthee and Naude (2008) examined "export diversity and regional growth in a developing country context" across South Africa's region using export data from sub-national districts and found that regions with lower levels of export specialization and more diversified exports tended to experience higher economic growth rates, and contributed more to South Africa overall exports. As a strategy policy framework, Hammouda, Karinji, Njuguna and Jallab (2006) assessed the viability of export diversification as a development strategy in Africa. The study used a panel data sample of 18 African countries and found that investment should be the core determinant of diversification. The study revealed that income has a positive and significant link with diversification. As income increases, countries tend to become more diversified.

In the case of country-specific study, staring with some developed countries, Banga (2006) examined the export-diversifying impact of Japanese and US foreign direct investments in the Indian manufacturing sector and found that FDI may lead to export diversification in the host country if it affects the export intensity of industries that have a low share in world exports positively. Indirectly, FDI may encourage export diversification through spillover effects: namely,

the presence of FDI in an industry may increase the export intensity of domestic firms. Relatedly, Tadesse and Shunilla (2011) examined the effect of FDI on horizontal export diversification for 131 countries with the number of products exported by each country. Using both parametric (quartile) and semi-parametric econometric techniques, they found that an increase in the stock of FDI improves the horizontal export diversification. They further specified that the actual magnitude of the effect on the existing stock of FDI and stage of diversification, gave rise to an almost inverted U-shaped relationship.

## METHODOLOGY AND MODEL SPECIFICATION

This study is undertaken with the objective of investigating the dynamic effects of export diversification on economic growth in Nigeria for the period 1970 to 2015. To achieve this objective, an econometric tool based on Error Correction Model (ECM) is used to examine both the short run and long-run dynamic impact of export diversification variable on economic growth. The ECM is a theoretically driven approach that is useful in estimating both short-run and long-run dynamic effect of one variable on the other and they relate to the fact that the last-periods deviation from the long-run equilibrium (the error) influences its short-run dynamics.. Following Parteka and Tamberi (2011) and starting with the usual symbolic representation of the final goods production function in this strand of literature,

$$Y = A.L_i^{1-\alpha} . \sum_{i=1}^{N} (X_{ij})^\alpha - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 1$$

Where, Y is a final product of type i, L is the labour input; j refers to differentiated intermediate inputs and $0 < \alpha < 1$.

By first assuming constant returns to scale, competitive markets, and neutral technical progress, the neoclassical production function is used to determine the productivity of inputs to total output growth so that the production model and estimated growth rate as in Haouas and Hesmati (2014) is written as

$$Y = AK^\alpha L^{(1-\alpha)} - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 2$$
And
$$Y = A + \alpha K + (1 - \alpha)L - - - - - - - - - - - - - - - - - - - - - - - - - - - 3$$

The neoclassical production function in equation (3) defines Y as the rate of output. A represents the total factor productivity growth rate (TFPG). The elasticity of output $\alpha$ equals the capital income share defined by the ratio of K to L (K/L). The Y, K and L in equation (3) denote the growth rate of output, capital formation, and labour use respectively.

From equation (3), the growth rate of commodity X can be derived so that the determinants of economic growth without exogenous technological change can be written as:
$$RGDPPC = \beta_0 + \beta_1 HIREXIN + \beta_2 OILEXP + \beta_3 NONOILEXP + \beta_4 NREND + \beta_5 INST + \beta_6 REXRATE + \lambda GDPPC_{t-1} + \mu - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 4$$

Where: RGDPPC is the real gross domestic product per capita, HIREXIN is the Hirschman concentration Index, OILEXP is value of oil export; NONOILEXP is the value of non-oil export; NREND is the natural resource endowments; INST is the Institution (proxied by contract intensive money (CIM) and REXRATE is the real exchange rate while μ is the error term with its assumed normality. These data were sourced from the Statistical Bulletin of the Central Bank of Nigeria and from the Annual Abstracts of Statistics from the National Bureau of Statistics. All variables are in their logarithmic form so as to harmonize the unit of measurement and provide

an opportunity to interpret the coefficients as elasticities. Hence, the logarithmic form of equation (4) becomes:

$LogRGDPPC =$

$\beta_0 + \beta_1 logHIREXIN + \beta_2 logOILEXP + \beta_3 logNONOILEXP + \qquad \beta_4 logNREND +$
$\beta_5 logINST + \beta_6 logREXRATE + \lambda logGDPPC_{t-1} + \mu - - - - - - - - - - - - - - - - - - - 5$

On a priori, $\beta_1, \beta_2, < 0$; $\beta_3, \beta_4, \beta_5, \beta_6$ and $\lambda > 0$

The structural stability of the model is tested using the Chow (1960) test. It is a test of whether a function which is a product of the same variable(s) changes over time (in the present instance) due to the Structural Adjustment Programmes (SAP) implemented by the Babangida Administration (in Nigeria) in 1986  The mechanics of the Chow test was to ascertain whether the SAP "disturbs" the relationship between the regressand and the regressors of the model. To achieve this feat, the sample period (1970 – 2015) was bifurcated into two periods (1970 – 1985) and (1986 – 2015) for pre- and post- SAP periods respectively and obtains three possible regressions as follows

$Pre-SAP$ (**1970 – 1985**) *period*: $LogRGDPPC = \alpha_{10} + \alpha_{11} logHIREXIN$
$+ \alpha_{12} logOILEXP + \alpha_{13} logNONOILEXP + \alpha_{14} logNREND + \alpha_{15} logINST$
$+ \alpha_{16} logREXRATE + \lambda_1 logGDPPC_{t-1} + \mu_{10} - - - n_1 = 16 - - - - - 6$

$Post-SAP$ (**1986 – 2015**) *period*: $LogRGDPPC = \alpha_{20} + \alpha_{21} logHIREXIN$
$+ \alpha_{22} logOILEXP + \alpha_{23} logNONOILEXP + \alpha_{24} logNREND + \alpha_{25} logINST$
$+ \alpha_{26} logREXRATE + \lambda_2 logGDPPC_{t-1} + \mu_{20} - - - n_2 = 30 - - - - - -$**7**

$Unrestricted$ (**1970 – 2015**) *period*:

$LogRGDPPC = \beta_0 + \beta_1 logHIREXIN + \beta_2 logOILEXP + \beta_3 logNONOILEXP$
$+ \beta_2 logOILEXP + \beta_3 logNONOILEXP + \beta_4 logNREND + \beta_5 logINST$
$+ \beta_6 logREXRATE + \lambda logRGDPPC_{t-1} - - - n = (n_1 + n_2) = 46 - - - - 8$

The regression (8) assumes that there is no statistically significant difference between the Pre-SAP and Post-SAP periods and therefore, estimates the relationship between the regressors and the regressand for the entire (46 years) period. In other words, the regression assumes that both the intercept as well as the slope coefficients remain the same over the entire period or, that there is no structural change. On the other hand, regressions (6) and (7) assume that the regressions in the two periods are different such that intercepts and the slope coefficient are different as the subscripted parameters show. Structural difference may be caused by differences in the intercept or slope coefficients or both.

To test this difference, the Stand F-test is employed. Since the two sets of samples are assumed independent, the residual sums of square (RSS) in the two regressions are added up to obtain the unrestricted residual sum of squares (RSS$_{UR}$) as follows:

RSS$_{UR}$ = RSS$_1$ + RSS$_2$ with df = ($n_1$ + $n_2$ – 8$_K$) = 38- --------------------------------------------------------9

The individual RSS are RSS$_1$ with N$_1$ – K (that is 16 – 8 = 8) and RSS$_2$, with $n_2$ – K (that is, 30 – 8 = 22) and that the pooled (unrestricted) RSS$_{UR}$ with ($n_1$ + $n_2$ – 2$_K$ = 30). Consequently, the F-test is estimated as follows: $F = \frac{(RSS_R - RSS_{UR})/K}{(RSS_{UR})/(n_1 + n_2 - 2K)} \sim F_{[K, \ (n_1 + n_1 - 2K)]}$----------------------------------10

The null hypothesis is that $\alpha_1$'s and $\alpha_2$'s are statistically equal (the same). That is, there is no difference in the coefficients obtained in the two samples. The decision rule follows that; if the observed F-ratio exceed the critical F-ratio (that is F$_{calculated}$ > F$_{Tabulated}$) at 5 percent level of significance, the null hypothesis of parameter stability is rejected with the conclusion that regressions 6 and 7 are the same or stable.

## RESULTS AND DISCUSSION

### (a) Short-Run Dynamic Relationships between Export Diversification and Economic Growth in Nigeria

In order to examine the short-run dynamic relationships between export diversification and economic growth in Nigeria, the entire time frame (1970 – 2015) is bifurcated into two major economic events, namely: Pre-Structural Adjustment Programme (Pre-SAP); 1970 – 1985 and Post-Structural Adjustment Programme (Post-SAP); 1986 – 2015. This is to enable the study examine whether there is a structural change (or structural stability) in the relationship between the variables under investigation. As a matter of fact, the first objective of SAP was "to restructure and diversify the productive base of the economy in order to reduce the dependence of the economy on oil sector and on imports. While it may be argued that the Nigerian economy would have been worst-off if SAP had not been implemented, the extent to which SAP achieved its goal of "re-directing" the economy from inward-looking import substitution strategy to outward-looking export promotion strategy before the official abandonment of the programme in 2006 is still a subject of debate. Findings from this study showed that prior to the implementation of SAP in 1986, the mean index of diversification (HIREXIN) between 1970 and 1985 was 1.005 while the mean index of diversification after SAP had been implemented (1986 – 2015) was 0.945. Ordinarily, the mean index of diversification prior to the introduction of SAP should have been lower (as expected) than the mean index of diversification after SAP had been implemented.

The statistical significance of this finding showed a systematic decrease in HIREXIN between the two periods which actually tended to encourage diversification effort in line with the objective of SAP even though, the economy witnessed a high degree of export concentration in both periods, leading to undiversified export structures. The dramatic and sudden rise in the exchange rate over the years tended to affect per capita GDP through its effects on cost and availability of imported raw materials and capital goods during the Post-SAP era were inimical to diversification efforts. The lumpy depreciation of Naira during the liberalization period only accentuated the adverse effects of exchange rate depreciation on diversification effort. The implication of this finding is that an appreciating exchange rate would help to diversify the export structure of the economy through a prudent management of foreign exchange resources, especially proceeds from oil exports.

**Table 1 Results of Linear Regression Analysis.**

| Method: | Least Squares | | | |
|---|---|---|---|---|
| Included Observations: | 46 | | | |

| Variable | Coefficient | Std Error | t-Statistic | Prob. |
|---|---|---|---|---|
| Constant | 4.966638 | 0.732470 | 6.780673 | 0.0000 |
| HIREXIN | - 0.862944 | 0.344837 | - 2.242361 | 0.0310 |
| LOGOILEXP | - 0.479219 | 0.173345 | - 2.764539 | 0.0088 |
| LOGNONOILEXP | 0.125337 | 0.255689 | 0.490134 | 0.6269 |
| NREND | 0.057795 | 0.027390 | 2.110082 | 0.0417 |
| INST | 0.150526 | 0.247872 | 0.607274 | 0.5474 |
| REXRATE | 0.008206 | 0.002524 | 3.250667 | 0.0025 |
| $GDPPC_{t-1}$ | 0.336667 | 0.072992 | 4.612358 | 0.0000 |
| R-Squared | 0.813505 | Mean Dep. Variable | 4.257333 | |
| Adjusted R-Squared | 0.778222 | SD dep. Variable | 0.753234 | |
| S.E of Regression | 0.354723 | Akaike Inf. Criterion | 0.924852 | |
| Sum. Of Sq. resid. | 4.655650 | Schwarz Criterion | 1.246036 | |
| Log Likelihood | - 12.80916 | F-St atistic | 23.05661 | |
| Durbin-Watson – Stat | 1.526097 | Prob. (F-Statistic) | 0.000000 | |

**Source: Own computation, using E-views 7.0**
**Note: Significant at 5 percent level**

**Table 2    Estimation of the short-run Dynamic Relationship Between Export Diversification and Economic Growth in Nigeria**
**Period (i): Pre-SAP (1970 – 1985) Estimation**

Included Observations   :        16

| Variable | Coefficient | Std Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LOGHIREXIN | - 0.295159 | 0.701168 | - 0.420954 | 0.6837 |
| LOGOILEXP | - 0.301398 | 0.089199 | - 3.378957 | 0.0081 |
| LOGNONOILEXP | - 0.046509 | 0.113663 | - 0.409181 | 0.6920 |
| LOGNREND | 0.125322 | 0.145798 | 0.859558 | 0.4123 |
| LOGINST | 0.049626 | 0.035258 | 1.407500 | 0.1929 |
| LOGREXRATE | - 0.252739 | 0.307367 | - 0.822270 | 0.4322 |
| CONSTANT | 4.600289 | 0.794009 | 5.793793 | 0.0003 |
| | | | | |
| R-Squared | 0.910334 | Mean Dep. Variable | 4.044375 | |
| Adjusted R-Squared | 0.850556 | SD dep. Variable | 0.115929 | |
| S.E of Regression | 0.044816 | Akaike Inf. Criterion | - 3.072872 | |
| Sum. of Sq. resid. | 0.018076 | Schwarz Criterion | - 2.734865 | |
| Log Likelihood | 31.58298 | F-Statistic | 15.22868 | |
| Durbin-Watson Stat., | 2.280180 | Prob. (F-Statistic) | 0.000297 | |

**Source: Own computation, using E-views 7.0**

**Period (ii):          Post-SAP (1986 – 2015) Estimation**
**Included Observations        :          30 after adjusting end points**

| Variable | Coefficient | Std Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LOGGDPPC$_{t-1}$ | 0.397902 | 0.095390 | 4.171322 | 0.0004 |
| LOGHIREXIN | - 1.581213 | 0.429364 | - 3.682689 | 0.0013 |
| LOGOILEXP | - 0.874116 | 0.348660 | - 2.507068 | 0.0201 |
| LOGNONOILEXP | - 0.353189 | 0.267806 | - 1.318823 | 0.2008 |
| LOGNREND | 0.116561 | 0.031081 | 3.750257 | 0.0011 |
| LOGINST | - 0.369108 | 0.582329 | - 0.633850 | 0.5327 |
| LOGREXRATE | 0.011414 | 0.003037 | 3.758636 | 0.0011 |
| CONSTANT | 9.686308 | 1.816044 | 5.339247 | 0.0000 |
| | | | | |
| R-Squared | 0.854274 | Mean Dep. Variable | 4.401668 | |
| Adjusted R-Squared | 0.807907 | SD dep. Variable | 0.914689 | |
| S.E of Regression | 0.400893 | Akaike Inf. Criterion | 1.232936 | |
| Sum. of Sq. resid. | 3.535740 | Schwarz Criterion | 1.606588 | |
| Log Likelihood | - 10.49404 | F-Statistic | 18.42411 | |
| Durbin-Watson Stat. | 1.738568 | Prob. (F-Statistic) | 0.000000 | |

**Source: Own computation, using E-views 7.0**

Table 1 was estimated with the assumption that there is no structural difference between estimates of Pre-and-Post-SAP era and therefore, estimates the relationship between export diversification and economic growth in Nigeria for the entire 46 years. In other words, the regression estimates assumed that the intercepts as well as the slope coefficients remain the same (stable) over the entire period- meaning that there is no structural change. However, estimates of table 2 assume that the regressions in the two periods are different both in the intercepts and parameter estimates.

A look at the estimated coefficients showed that the relationships between export diversification and economic growth in Nigeria are not the same in the two sub-periods as the (mean) change in economic growth as a result of a unit change in the export diversification index are statistically different. Whether this change was due to the Structural Adjustment Programme (SAP) implemented by the Babangida Administration in 1986 is difficult to conclude. However, these structural changes may be caused by differences in the intercepts or slope coefficients (or both).

Under the null hypothesis, regressions in periods i and ii of table 2 are statistically not the same. That is, there is no structural stability in the models. Following Chow (1960), the computed F-statistic was 1.20 while the tabulated F-statistic was 2.27 with K = 8, v = 14. Therefore since the F-calculated is less than F-tabulated, the study does not reject the null hypothesis of parameter stability or the null hypothesis of no structural stability – meaning that there was no structural change at 5 percent level of significance. Consequently, the use of estimates of table 1 in interpreting the relationship between export diversification and economic growth in Nigeria may be justified.

## SUMMARY AND POLICY RECOMMENDATIONS

This study was conducted with the objective of investigating the dynamic effects of export diversification and economic growth in Nigeria for the period 1970 and 2015. This period of investigation was bifurcated into two main short-run periods of Pre-SAP (1970 – 1985) and Post-SAP (1986 – 2015) era in order to ascertain whether there was a structural change in the relationship between export diversification and economic growth in Nigeria as contained in the policies of SAP. Findings from this study show that in both time horizons, there was high degree of export concentration on primary products exports. As a matter of fact, the mean index of diversification prior to the implementation of SAP (1970 – 1985) was 1.005 while that of Post-SAP (1986 – 2015) was 0.945. On the average, the mean index of diversification for the entire 46 year period was about 0.98. Ordinarily, the mean index of diversification prior to the implementation of SAP should have been relatively lower than that of Post-SAP. With the reverse being the case, over the two periods, it could be stated that the Nigerian economy was largely undiversified in export earnings. Since diversification would not occur overnight but be driven by effective infrastructural development especially in the non-oil sector, it has to be accompanied by an appreciating exchange rate to help diversify the export base of the economy

Based on the findings of this study, the following recommendations are made:
1. There is the need to get some country-wide "horizontal basics" right by way of macroeconomic management policies including running a counter-cyclical fiscal policy.
2. Trade policies in Nigeria need to be reasonably open so that traded sectors can compete internationally.
3. The exchange rate policy of preventing extended periods of over-valuation particularly on the down side of a cycle should be put in place to bridge the gap between savings and investment.
4. There is the need to have strong institutions that would regulate import, promote export, utilize both external and internal debt, ensure good governance, and promote accountability as these would guarantee level-playing ground for all investors in the economy.
5. Expanding the range of export goods to reduce over concentration on oil exports is essential for a successful diversification plan. This would boost both domestic and external sector demand for locally made goods, thereby reducing volatility arising from the export of a single product.

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