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FOOD SECURITY AND ECONOMIC DEVELOPMENT IN NIGERIA

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ABSTRACT
The study examined food security and economic development in Nigeria. To this effect, time series data for 39 years (1980-2018) was employed from CBN bulletin (2018) and world bank development indicators. Macroeconomic variables such as; per capita income (endogenous variable); food production index, food importation bill and agriculture contribution to GDP was used as the exogenous variables. The study used Auto Regressive Distributed Lag (ARDL) analysis in analyzing the long run and short run of the data. However, from the result Food production index had a positive insignificant long run relationship with economic development. This is because food production is expected to increase the productivity of the economy, reduce the importation of staple foods, and increase a Nations foreign earning. Nigeria however is still a net importer of food, thus its insignificant relationship with economic development in Nigeria. The study hence concludes that food security significantly impact on Nigeria's economic development. And it was recommended that, Nigeria should reduce her food import bill, as that will afford her the opportunity to utilize her foreign reserve on more capital intensive imports. The government should direct and prioritize the agricultural sector, as that will not just ensure it attains food security, but will increase employment, and income to the populace.

Keywords: Food Security, Food Production Index, Per Capita Income, Agricultural Development, Food Importation Bill.

Introduction

The number of people without enough, adequate and safe food to eat on a regular basis remains stubbornly high, at over 900 million (Food and Agriculture Organization (FAO), 2010) and is not falling significantly. Also according to a World Food Program estimate, hunger affects one out of seven people on the planet. In 2010, FAO estimated that more than one (1) billion of the world's people did not have enough food to lead healthy and productive lives. Ironically, the highest proportion of the food insecure live in rural areas where food is produced, yet they are net food buyers rather than food sellers. Over 60% of the world undernourished people live in Asia, and a quarter in Africa.

The latest FAO figures indicate that there are 22 countries, 16 of which are in Africa, in which the undernourishment prevalence rate is over 35%. Achievement of food security in any country is typically an insurance against hunger and malnutrition, both of which hinder economic development. This is why all developed and some developing countries make considerable efforts to increase their food production capacity. Approximately one billion people worldwide are undernourished, many more suffer from micronutrient deficiencies, and the absolute numbers tend to increase further, especially in Sub-Saharan Africa (FAO, 2008). The World Bank proposed a definition of food security which remains current today,

broadening the emphasis from food availability to include access to food, and narrowing the focus from the global and national to households and individuals: "access by all people at all times to enough food for an active, healthy life" (World Bank, 1986).

According to Integrated Food Security Strategy (IFSS, 2008) this definition has different but inter-related components: food availability, the effective or continuous supply of food at both national and household level which is affected by input and output market condition, as well as production capabilities of the agricultural sector; food access or effective demand, the ability of nations and household to acquire sufficient food on sustainable basis and addresses issues of purchasing power and consumption behavior; reliability of food, the utilization and consumption of safe and nutritious food and food distribution, refers to equitable provision of food to points of demand at the right time and place. This spatial/time aspect of food security relates to the fact that a country might be food secure at the national level, but still have local pockets of food insecurity, at various periods of the agricultural cycle (IFSS, 2008).

The opposite of food security is food insecurity (Devereux, Vaitla & Haustein, 2013). Food insecurity continues to be a key development problem across the globe, undermining people's health, productivity, and often their very survival (Smith & Subandoro, 2017). Since the attainment of food security in any country is usually an insurance against hunger and malnutrition, both of which slow down economic development (Abu, 2012), all developed and developing countries must provide policies and strategies to increase their food production capacity. Generally, a country is food-secure when a majority of its population has access to food in sufficient quantity and quality consistent with decent existence at all times (Idabacha, 2014). It has been documented since the 1980s, that the achievement of food security requires paying attention to supply-side, which can be secured through agricultural production, commercial imports or food aid and on the demand-side food has to be safe, nutritious, and appropriate to meet food preferences (Devereux, Vaitla & Haustein, 2013).

The situation in Nigeria, like any other African country is not different, Recent estimates put the number of hungry people in Nigeria at over 53 million, which is about 30 percent of the country's total population of roughly 150 million; and 52 percent live under the poverty line and the figure will have become higher since the recent flooding in certain parts of the country. Besides being the leading economy in Africa, Nigeria account for over 20 percent of sub-Saharan Africa population. These are matters of grave concern largely because Nigeria was self-sufficient in food production and was indeed a net exporter of food to other regions of the continent in the 1950s and1960s. The discovery of crude oil and rising revenue from the country's petroleum sector encouraged official neglect of the agricultural sector and turned Nigeria into a net importer of food. By 2012 the federal ministry of agriculture estimated that Nigeria was spending over $3billion annually on food imports which is roughly N450 Billion; when juxtaposed in relation to our annual budget. If Nigeria could actually boost her production of food and agriculture, it won't only lead to her achieving food security, but will also lead to becoming an important revenue earner for and that will translate to unprecedented economic growth which would assist in the actualization of economic development.

Nigeria is facing the twin problem of hunger and poverty despite its natural position as a green area with huge resource endowment. It manifests most of the characteristics of Sub Saharan Africa which has about the largest absolute increase of 72 million people in the last decade. About 70 percent of Nigerians live on less than N100 / day (US$ 0.7/day), while youth unemployment is close to 90 percent (Eze, 2013).
The country has a large informal sector in which a substantial number of the unemployed take up employment (CBN, 2018). The poverty syndrome is a bit difficult to understand with Nigeria being the sixth world highest producer of crude oil and earning upwards of US$ 15 billion annually (CBN, 2018). Regrettably in 2002 alone, 80 percent of the earning was spent on maintaining the government, leaving only 20 percent for economic development. This partly explains the nature of budgetary problems facing the nation.

Nigeria's labor force in agriculture is 60 percent. Incidentally too, 70 percent of the population resides in the rural areas out of which 90 percent are engaged in agriculture (LIMAN, 1979). This invariably leaves agriculture as a key sector capable of affecting majority of Nigerians in diverse ways. The sector, in 2000, contributed 41.5 percent to the GDP, realized N16.3 billion from export of agricultural produce and produced 99.64 metric tonnes of different staples (CBN, 2000 and FOS, 1999). Relative to other African countries, Nigeria maintains a high rate of food production with a food output index of 157.4 based on 1989-91 (FAO, 2001). Its index of food output per capita of 199.0 in 2000, even though fairly marginal, was one of the highest for Africa. Of the 54 African countries in the continent, only 24 representing less than 50 percent maintained or slightly improved food production with Nigeria being the 9th on the list. Despite these prospects, Nigeria's agricultural performance in recent times remains inadequate. Behind the inadequacy of the sector lies the foremost problem of low productivity. It is a reflection that the past strategies and program for development of agriculture have not all led to a dramatic turn around, and this is demonstrated by the widening food gap. The gap in food demand and supply is met mainly from commercial food imports. There are equally internal food transfers from major producing areas to minor producing regions to bridge this gap. (Okorie, 2011). Thus this research seeks to empirically analyze the implications of food security on economic development in Nigeria.

Therefore, the broad objective of the study is to examine food security and economic development in Nigeria. The specific objectives however are to;

1. Ascertain the relationship between food production and economic development in Nigeria.
2. Determine the relationship between food importation and economic development in Nigeria
3. Examine how agriculture's contribution to total gross domestic product has impacted on economic development in Nigeria

2.0 Literature Review

Empirical Literature

Andohol (2012) examined Nigeria's Food Security Programs. The work was situated within the Malthusian theoretical framework. Data was obtained from statistical bulletin of CBN and Bureau for Statistics covering variables such as staple food production, population growth rates, inflationary rate, and Minimum rediscount rate, values of the agricultural guarantee loans, food import bill, total import bill and Real GDP computed at 1990 factor prices. These variables were readjusted to their growth rates via the Ln-log regression approach. The study found out amongst others that constraints militating against agricultural productivity in Nigeria are structured along sector wide constraints and commodity specific constraints. That in Nigeria staple food production is experiencing a downward trend, with Adhoc agricultural polices counteracted by government monetary and fiscal policies. The study recommends that improvements are required in these diverse and complex factors leading to food crisis, and that government should always be mindful in its monetary and fiscal actions, which are counteractive to agricultural strategies put in place. It is imperative to conclude that Nigeria and other developing countries should see Agriculture as the gateway to several desired ends which includes poverty reduction, rural transformation, employment, food security and improved national health profile of the citizenry.

Swietlik (2018) examined the relationship between the level of economic growth and the state of food security in selected regions and countries in the world during 2012-2015. The source of the information was secondary data from GUS (Central Statistical Office), the United Nations, the World Bank, the International Monetary Fund and Global Food Security Index reports. The analyses showed significant territorial differences between levels of GDP and food security. It was apparent that higher levels of GDP were associated with higher levels of food security, and the biggest improvements in food security occurred in those countries with the fastest rise in GDP per capita. The high correlation between these indicators shows that the basic condition for improvement in world food security is economic growth and growth in real incomes, especially in poorer countries.

Asayehgn (2016) attempted to find and understand the relationship between food availability and economic growth. A review of existing secondary studies indicates that food insecurity, low food intake and the variable access to food endemic in Ethiopia, is not due to the lack of economic growth and income distribution. Rather, excluding transitory food insecurity, chronic food insecurity in Ethiopia seems to derive directly from inflationary pressures, resulting from excess in the money supply, population growth, budgetary deficits, imprudently addressing the "supply side" of food production during favorable seasons, the lack of adequate storage systems for stocking food items that could be used to tackle food insecurity during shocking periods, a fragile natural resource base, and weak institutions. Particularly for policy makers, the study's findings contribute to an understanding of some of the crucial factors that could lead to a reduction of food insecurity and help to design advance strategies to alleviate food insecurity in Ethiopia.
Metu, Okeyika & Maduka (2016) evaluated food security situation in Nigeria from 1991 to 2015. The paper shows that there is a shortfall in domestically produced food in Nigeria because the growth in the population of Nigeria is at the rate of 3.2% while the growth in food production has been less than one. This shows that demand for food (population) is greater than the supply (agricultural production) because of factors such as inconsistent government policies, environmental degradation and non-sustainable agricultural production. The paper also shows that Nigeria depends so much on food importation. To achieve sustainable food security in Nigeria, the paper recommends an improvement in environmental management in other to increase agricultural productivity.
From the empirical literature above, it was seen that there are little study on the subject matter to the best of my knowledge hence this study.

3.0 Methodology

3.1 Research Design

The research designed adopted in this study is expo factor research design. This is ideal for conducting social research when is not possible or acceptable to manipulate the characteristics of human participant. It is a substitute for true experimental research and can be used to test hypotheses about cause and effect or correlational relationships, where it is not practical or ethical to apply a true experimental design. Expo factor design uses data already collected, but not necessarily amassed research purpose.

3.2 Model Specification

Our model is a linear one of the form:
PCI = F(Xi)…… (3.1)
Where; PCGDP = Per capita income
Xi = set of chosen explanatory variables.
The chosen variables are reflected in the model as
PCI = *f* (FPRI, FIMB, AGDP)…… (3.2)
Where,
PCI = Per capita income (a Proxy for economic development)
FPRI = Food production index (a proxy for food security)
FIMB= food importation bill (a proxy for food security)
AGDP= agriculture contribution to total gross domestic product
The mathematical form of the model
$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + + U$……(3.3)
Further, the work set out to present an Autoregressive Distributed Lag (ARDL) model. The ARDL model is stated as:

$$PCI_t = \alpha_0 + \sum_{i=1}^{p} \gamma_i FPRI_{t-i} + \sum_{i=0}^{p} \beta_i FIMB_{t-i} + \sum_{i=0}^{p} \beta_i AGDP_{t-i} + \mu_{it} \text{.....} (3.4)$$

In order to obtain the co-integrating equation, equation 3.4 is transformed into 3.5 as follows:

$$\Delta PCI_t = \alpha_0 + \sum_{i=1}^{p} \gamma_i \Delta FPRI_{t-i} + \sum_{i=0}^{p} \beta_i \Delta FIMB_{t-i} + \sum_{i=0}^{p} \beta_i \Delta AGDP_{t-i} + \phi ECT + \mu_{it} \text{..(3.5)}$$

Where $ECT_t = Y_t - \alpha_0 - \sum_{i=1}^{p} \gamma_1 \Delta Y_{t-i} - \sum_{i=0}^{p} \beta_i \Delta X_{t-i}$ and $\phi = 1 - \sum_{i=1}^{p} \gamma_1 \Delta Y_{t-i}$ .....(3.6)

The Bound test procedure used equations 3.4 and 3.5 into 7 as:

$$\Delta Y_t = -\sum_{i=1}^{p-1} \gamma_1 Y * \Delta Y_{t-i} + \sum_{i=0}^{p} \beta_i \Delta X_{t-i} - \rho Y_{t-1} - \alpha - \sum_{i=0}^{p} \delta X_{t-i} + \mu_{it} \text{.....(3.7)}$$

Then we test the existence of level relationship as $\rho = 0$ and $\delta_1 = \delta_2 = ... = \delta_k = 0$
where Δ = difference operator, μ = white noise error term.

3.3 Diagnostic Test of the Model

Diagnostic test of the model were carried out using, unit root test, co integration, error correction, coefficient of multiple determination, R^2 analysis of variance and Durbin Watson statistics

3.3.1 Unit Root Test

To fully explore the data generating process, we first examined the time series properties of model variables using the Augmented Dickey- Fuller test.
The ADF test regression equations with constant are:

$$\Delta Y_T = \alpha_0 + \alpha_1 Y_{T-1} + \sum_{j=1}^{k} a_j \ \Delta Y_{T-1} + \varepsilon_T \text{...} \qquad (3.8)$$

where Δ is the first difference operator ε_T is random error term that is iid k = no of lagged differences Y = the variable. The unit root test is then carried out under the null hypothesis $\alpha = 0$ against the alternative hypothesis of $\alpha < 0$. Once a value for the test statistics $ADF_\tau = \frac{\hat{\alpha}}{SE(\alpha)}$ .....(3.9) is computed we shall compare it with the relevant critical value for the Dickey-Fuller Test. If the test statistic is greater (in absolute value) than the critical value at 5% or 1% level of significance, then the null hypothesis of $\alpha = 0$ is rejected and no unit root is present. If the variables are non-stationary at level form and integrated of the same order, this implies evidence of co-integration in the model.

3.3.2 Test of Significance

The significance test were tested at 5% level of significance using the coefficients of the independent variables and following the Rule: Reject the Null hypothesis if the t-prob is less than 0.05, otherwise accept the Null hypothesis when t-prob is greater than 0.05 i.e. Reject if t-prob <0.05, Accept if t-prob > 0.05

3.3.3 Test of Hypothesis

The Hypotheses were tested using the probability of t-statistics: Reject the Null hypothesis if the probability of t-statistics is less than the critical value (0.05), otherwise accept the Null hypothesis when critical value (0.05) exceeds probability of t-statistics.

3.5 Data Source

The data to be used in this study shall be obtained from Central Bank of Nigeria (CBN) statistical bulletin 2018 and World Bank development indicators.

4.1 Data Presentation

The data on variables used in the study is detailed in Appendix 1, marked, "Dataset on Per capita income, food production index (FPRI) in (rate), food import bill (FIMB) in (rate), agriculture contribution to total gross domestic product (AGDP) in (N'billion).

4.2 Data Analysis

The estimates from the analysis (ADF, regression, test of co-integration) carried out using E-views 9 software are presented thus:

4.2.1 Unit Root Test

A unit root test (ADF) was conducted to ascertain whether the variables in the model are stationary. This is necessary as it helps to avoid spurious regression results.

The summary of Unit Root Tests (ADF) results using E-views software is detailed in the table below:

Table 4.1: Summary of ADF test results at 5% critical value

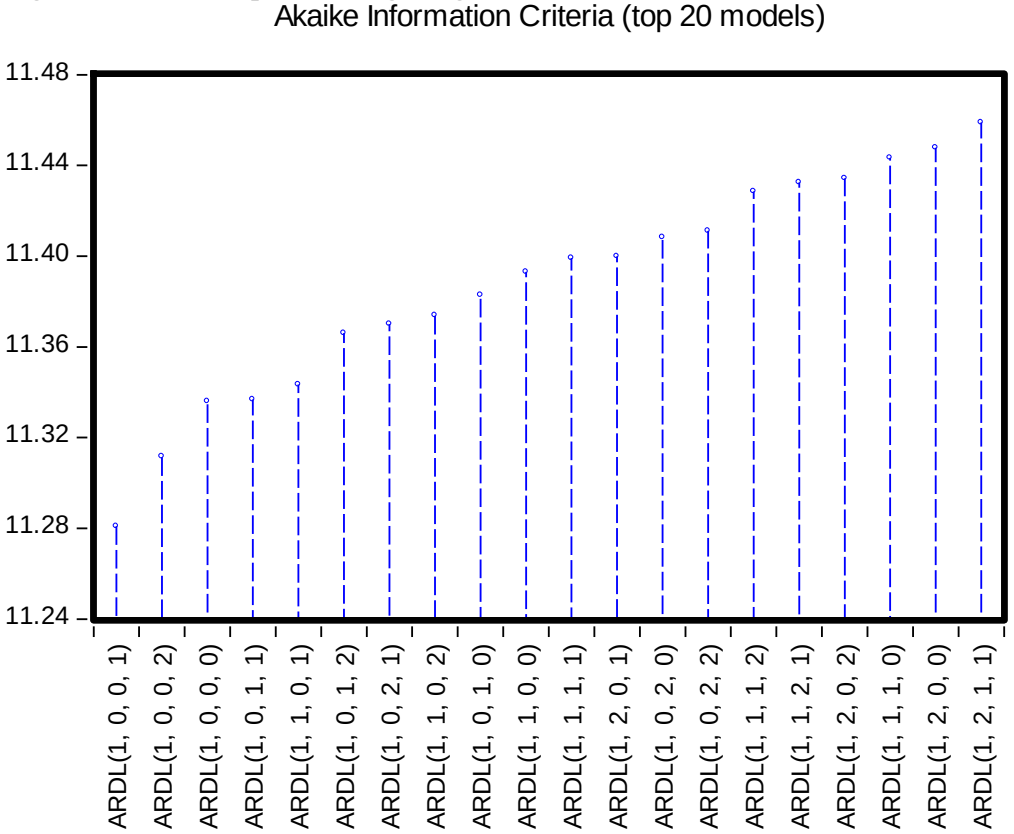
VARIABLE	ADF TEST STATISTICS	CRITICAL VALUE 5%	ORDER OF INTEGRATION	DECISION RULE
PCI	**-5.8843**	**-2.9571**	**I□ (1)**	**Reject Ho**
FPRI	**-4.2317**	**-2.9640**	**I□ (0)**	**Reject Ho**
FIMB	**-11.4271**	**-2.9434**	**I□ (1)**	**Reject Ho**
AGDP	**-4.7645**	**-2.9434**	**I□ (1)**	**Reject Ho**

Source: Authors computation with E-views 9.1

From table 4.1 above, observe that the variable Food production index (FPRI) is integrated of order zero (I ~ (0)) as it is stationary at level form; Per capita income (PCI), food importation bill (FIMB) and agricultural contribution to total GDP (AGDP) weren't not stationary at level form but became stationary after first difference which implies that the variables (PCI, FIMB, AGDP) were integrated of order one (I ~ (1)). The decision is based on the fact the ADF statistics that is greater than the ADF critical values at 5%, we reject H_0 and conclude that the variable is stationary.

Since the variables are integrated of order one and zero and none of the variables is integrated of order two. We therefore, apply the ARDL bound co-integration test. But before we apply the ARDL bound co-integration test, we first determine the optimum lag length using Akaike information criteria. The result is shown in figures 4.1 below:

Figure 4.1: ARDL Optimum Lag Length Selection for the model



After twenty (20) models automatically generated, ARDL (1,2,1,1) models were chosen based on Akaike information criteria for the model.

4.2.2 ARDL Bound Co-integration Test

A necessary condition for testing for ARDL bound co-integrating test is that each of the variables be integrated of either of order one or zero or both (Pesaran, Shin and Smith, 2001). Since all the variables are integrated of order one and zero, we proceeded to estimate the ARDL bound test. The null hypothesis of ARDL bound co-integration is that the variables are not cointegrated as against the alternative that they are cointegrated. The decision rule is to reject the null hypothesis if the F-statistics is greater than the upper bound critical values at chosen level of significance. The result of the ARDL co-integration test for the first and second objectives is shown in table 4.2 below.

Table 4.2: ARDL Bound Co-integration (5% critical value) Test Result for the model

Model	**F-Statistics**	**K**	**Significance level**	**Critical Bound Value**	
				10 (Lower Bound)	**11 (Upper Bound)**
1	11.34187	4	5%	3.23	4.35

Source: Author's Computation with E-views 9.1

From table 4.2 the F-statistics for the model is 11.34187 and is greater than the upper (I1) bound of 4.35 at 5% level of significance. Thus, we reject the null hypothesis and conclude that there is presence of co-integration in the model. This implies that there is a long run relationship between food security and economic development in Nigeria. Since there is a long run relationship we therefore estimate the short run

and long run ARDL regression models and the results are presented in tables 4.3 and 4.4 below respectively:

4.2.3 Test for Short Run Relationship

Having ascertained that there exist a co-integrating relationship between food security and economic development in Nigeria, the short run relationship needs to be ascertained.

Table 4.3: Summary of Parsimonious Short Run Relationship Result between food security and economic development in Nigeria

ARDL Model (1.2.1.1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FPRI)	0.004965	0.045704	0.108630	0.9143
D(FIMB)	-0.326263	1.077988	-0.302660	0.7645
D(AGDP)	0.085547	0.026134	3.273412	0.0029
CointEq(-1)	-0.207174	0.114221	-1.813800	0.0808

Source: Author's Computation with E-views 9.1

From table 4.3 above, the integration (ECM) was negative, implying evidently that there is a short run relationship between taxation and manufacturing sector performance in Nigeria. The coefficient of error correction model (cointEq (-1)) is (-0.207174). The speed of adjustment suggests that about 20.72% of the previous period's disequilibrium in per capita income is corrected every year by food security. The implication is that it will take about one year for any disequilibrium in the per capita income in Nigeria to be to be corrected by food security.

4.2.4 Test for Long Run Relationship

It's imperative to examine the implications of the long run coefficient of the exogenous variable on the endogenous variable. The ARDL long run coefficient test is as shown in the table below;

Table 4.4; Summary of Long Run coefficient of food security as its affect economic development in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FPRI	0.023964	0.221889	0.108002	0.9148
FIMB	-1.574824	5.670973	-0.277699	0.7834
AGDP	0.130087	0.038115	3.413029	0.0020
C	891.256364	245.601384	3.628874	0.0012

Source: Author's Computation with E-views 9.1

4.2.5 Interpretation of Long Run ARDL Result

PCI= 891.256364 + 0.023964FPRI – 1.574824FIMB + 0.130087AGDP

The long run coefficient from table 4.4 above shows that the joint impact of all exogenous variables (FPRI, FIMB, AGDP) on the endogenous variable will amount to 891 units; this is on the basis that they are all held at constant. In other word if all the exogenous variables are held at constant it will amount to 891.2564 unit contribution to economic development (per capita income).

Food production index (FPRI) possessed a positive coefficient value of 0.0239; this implies that it shares a positive relationship with economic development in Nigeria on the long run. This means that on the long run, if the food production level the economy increases by a unit, it will increase Nigeria's per capita income by 0.0239 units. The significance test however reveals that the food production index shares an insignificant relationship with economic development in Nigeria, under the period of study.

The coefficient of Food importation bill (FIMB) was negative, having values -1.5748; entailing that there is an inverse relationship between economic development and food importation. Thus if the Food importation increases in Nigeria by a single unit, it decreases per capita income in Nigeria by -1.5748 units. Judging by the result of probability of t-test, food importation bill was found to be insignificant.
The coefficient of agriculture contribution to total GDP (AGDP) is positive suggesting that on the long run, if the agricultural composition of gross domestic production increases in the long run by a unit, per capita income increases by 0.13009 units. The significance test shows that agriculture contribution to total GDP shares a significant relationship with economic development in Nigeria.

4.2.6 Diagnostic Test

Table 4.5 - Diagnostic test table

Diagnostic Test	Result	Decision
Adj. Coefficient of determination (R^2)	0.6136 =61.36%	Strong fitness
F-statistics Prob. (F-stat)	=3.9248 =0.0083	Model is significant

Source: Author's computation on E-views 9.1

4.2.7 Coefficient of Determination

The coefficient of determination from table 4.5, showed that adjusted R-squared was 0.6136. This shows that the Explanatory variable could explain up to 61.36% of the total variation in the model. In other words, variations in FPRI, FIMB, and AGDP could explain 61.36% of the variations in PCI. This further shows it possesses a fairly good explanatory ability of the model.

4.2.8 Overall Test of Significance

The F-stat as shown in table 4.5 was 3.9248, with probabilities of 0.0084, entailing that food security possesses a joint significance with economic development in Nigeria. Hence for the period under study, they both have significantly impacted on economic development in Nigeria.

4.3 Test Of Hypotheses

Hypothesis 1

Ho_1: Food production has no significant relationship with economic development in Nigeria.

Conclusion

From table 4.4 above (ARDL long run coefficient result), the probability of t-stat of parameter (FPRI) was 0.9148, and greater than 0.05 critical values. Thus we accept the null hypothesis and conclude that food production has no significant relationship with economic development in Nigeria.

Hypothesis 2

Ho_2: Food importation has no significant relationship with economic development in Nigeria

Conclusion

From table 4.4 above (ARDL result), the probability value for food importation (FIMB) is 0.7834 and greater than 0.05. Thus we accept the null hypothesis and conclude that Food importation has no significant relationship with economic development in Nigeria.

Hypothesis 3

Ho_3: Agriculture contribution to total gross domestic product is not significantly impacting on economic development in Nigeria.

Conclusion

From table 4.4 above (ARDL result), the probability value for agriculture contribution to total GDP (AGDP) is 0.0020 and less than 0.05. Thus we reject the null hypothesis and conclude that agriculture contribution to total gross domestic product is significantly impacting on economic development in Nigeria.

4.4 Discussion Of Findings

This study seeks to examine food security and economic development in Nigeria for a 39 year period, viz; (1980-2018), the findings from this research are as follows;

The Stationarity of the time series data was ascertained by using the Augmented Dickey fuller Unit root test at 5% critical value, the result showed that food production index (FPRI), was found to possess stationarity at level, showing an integrating order of zero [I□(0)]; while Per capita income (PCI), food importation bill (FIMB) and agriculture contribution to GDP were stationary after first differencing, indicating an integration order of one [I□(1)]. Subsequently the ARDL test was conducted to test the dynamics of the model. The ARDL co-integration bound test result showed that F-stat was 55.08924, and exceeded the lower and upper bound test which were 3.23 and 4.35 respectively, entailing at 5% critical value, that there was presence of co-integration implying that there is a long run relationship between food security and economic development in Nigeria.

The long run findings showed that food production index (FPRI) had positive and insignificant relationship with economic development in Nigeria, with a coefficient of 0.0239, clearly indicating that as the food production level (index) of the economy increases by a unit, Nigeria's income per capita increases by 0.0239 units.

Food importation bill (FIMB) had a negative and insignificant relationship with economic development in Nigeria (PCI). The coefficient revealed that as the importation of staple food increases, Nigeria income per capita decreases by -1.5748 units.

Agriculture contribution to GDP had a positive significant long run relationship with economic development in Nigeria, having coefficient of 0.13009; implying that as the share of agriculture to total GDP increases by a unit, it adds 0.13009 units to Nigeria's per capita income.

5.1 Summary of Findings

The research's objective was to examine food security and Nigeria's economic development, for a 39 year period, viz (1980-2018). Time series data from CBN statistical bulletin (2018) was employed to help achieve the objective. The following summarizes the findings of the research;

1. Food production index as an indicator for food security had a positive and insignificant relationship with economic development in Nigeria
2. Food importation bill as an indicator for food security had a negative and insignificant relationship with development.
3. Agriculture contribution to GDP as an indicator of food security had a positive and significant relationship with economic development.

5.2 Conclusions

The research seeks to examine food security and economic development in Nigeria. To this effect, time series data for 39 years (1980-2018) was employed from CBN bulletin (2018) and world bank development indicators. Macroeconomic variables such as; per capita income (endogenous variable); food production index, food importation bill and agriculture contribution to GDP was used as the exogenous variables. Food production index had a positive insignificant long run relationship with economic development. This is because food production is expected to increase the productivity of the economy, reduce the importation of staple foods, and increase a Nations foreign earning. Nigeria however is still a net importer of food, thus its insignificant relationship with economic development in Nigeria. The more an economy expend on food importation, the lesser it is able to channel her resources into other

developmental projects, thus the bulk of her income is expended in importing food, denoting a sign that the country still experiences food insecurity. Furthermore, agriculture contribution aids in economic development in the country, as a large segment populace is employed under the sector. The study hence concludes that food security significantly impact on Nigeria's economic development.

5.3 Recommendations

The findings from this study raise the following policy issues and recommendations;

1. Nigeria should reduce her food import bill, as that will afford her the opportunity to utilize her foreign reserve on more capital intensive imports.
2. The government should direct and prioritize the agricultural sector, as that will not just ensure it attains food security, but will increase employment, and income to the populace.

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