



## IMPACT OF AGRICULTURAL AND MINING SECTOR ON ECONOMIC GROWTH IN NIGERIA

**TITUS Wuyah Yunana**

**Department of Economics and Management Science,  
Nigeria Police Academy, Wudil-Kano**

**MUHAMMAD Dahiru Ahmad**

**Department of Economics and Management Science,  
Nigeria Police Academy, Wudil-Kano**

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### Abstract

*The study aim at analysing the impact of Agricultural and Mining sector on economic growth in Nigeria between 1999 and 2017 using ordinary least squared (OLS) regression model. The variables were first subjected to unit root test using Augmented Dickey-Fuller test. The result shows that both agriculture and mining outputs have significant and positive impact on economic growth in Nigeria. However the result of mining sector shows only small marginal contribution to GDP due to the over reliance on oil while neglecting the other sectors of the economy. The study recommends that the government should take concrete measures to improve Agricultural and Mining sectors in Nigeria. Both sectors have tremendous potential to provide alternative sources of revenue and foreign exchange to channel towards improving the economic growth of Nigeria.*

**Keywords:** Agriculture, Mining, Economic Growth, Nigeria

**JEL Classifications:**

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### Introduction

Nigeria is currently the 39th largest economy in the world, with a real gross domestic product (GDP) in purchasing-power-parity (PPP) terms estimated at \$387 billion in 2012 and in 2017, GDP per capita based on PPP for Nigeria was \$5,927. GDP per capita based on PPP of Nigeria increased from \$2,228 in 1998 to \$5,927 in 2017 growing at an average annual rate of 5.36 %. 2014 economic statistics of the country considered Nigerian economy as the largest economy in Africa. The current economic statistics reveals South African economy as the largest economy with Gross Domestic Product (GDP) of \$301 billion as against Nigerian economy of GDP of \$296 billion (CBN, 2016) Nigeria is a major oil producer supplying 2.7 percent of global output and 6.7 percent of the twelve-member OPEC output as at May 2017 (CBN, 2017). For over five decades now, the Nigerian economy has mostly depended on proceeds from the sale of crude oil at the expense of other productive sectors such as Agriculture and solid minerals that hitherto contributed significantly to the economy of Nigeria. The country's over-dependence on oil amidst the dwindling state of other productive sectors of her economy has called for concerns (CBN, 2017).

Nigeria is a young country where about 63 percent of the population is younger than 25 years (NBS, 2017). Estimates suggest that the economy needs to create 15 million new jobs by 2020 in order to reap the "demographic dividend" (Bloom et al., 2010). Failure to achieve this raises the risk of social unrest as the youth population continues to rise. In Vision 20:2020, Nigeria aspires to achieve per-capita income of at least \$4,000 and GDP of not less than \$900 billion, which will place Nigeria among the 20 largest economies in the world, by year 2020. To achieve this goal, the economy requires a growth of 13.8 percent per annum between 2010 and 2020. This growth can only come when the country diversify its economy and get out of the monoculture nature of the Nigeria economy which is responsible for Nigeria's current status as an underdeveloped country (Agba, 2007). The prevailing economic situation has prompted Nigeria to work harder to further diversify its economy as well as government revenue. However, almost half of the economy is informal and out of the control of government. Policies aimed at drawing in this huge informal sector into the system must necessarily be deployed at this time if we are to diversify our sources of revenue and achieve a more sustainable structural

transformation of our economy (Akongwale, Ayodele & Udefuna, 2013).

Despite the country's substantial mining resources, agricultural and energy potential, nearly four out of every six Nigerians live below the poverty line (NBS, 2017). Nigerian economy is heavily dependent on oil as a means of foreign exchange and about 78 percent source of revenue to the country. Therefore, the country has to pay more attention to agricultural and mining sectors of the economic which have not been fully exploited.

Agriculture is the main stay of the Nigerian economy and the country need to look inward to make the sector a high priority by developing and exploiting the resources of the sector for the welfare of the citizens. It is noted that agricultural sector made Brazilian economy to out weight that

## Literature Review

### Agriculture

Akinboyo (2008) defines Agriculture as the science of making use of the land to raise plants and animals. It is the simplification of nature's food webs and the rechanneling of energy for human planting and animal consumption. Until the exploitation of oil reserves began in the 1980s, Nigeria's economy was largely dependent on agriculture. Nigeria's wide range of climate variations allows it to produce a variety of food and cash crops.

### Mining

Mining is the extraction [removal] of minerals and metals from the earth. The mining of minerals in Nigeria accounts for only 0.3% of its GDP, due to the influence of its vast oil resources. The domestic mining industry is underdeveloped, leading to Nigeria having to import minerals that it could produce domestically, such as salt or iron ore.

### Empirical Literature

Olajide, Akinlabi and Tijani (2015) analyses the relationship between Agricultural resource and economic growth in Nigeria. The Ordinary Least Square regression method was used to analyze the data. The results revealed a positive cause and effect relationship between gross domestic product (GDP) and agricultural output in Nigeria. Agricultural sector is estimated to contribute 34.4 percent variation in gross domestic product (GDP) between 1970 and 2010 in Nigeria. The Agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s.

Omorogbe, Jelena and Fatima (2014) examined the role of agriculture in the economic development of Nigeria uses trend analysis. The study proves that an in-depth research on the development of the

of all other South America countries and is expanding its presence in the world market (Brown, 2000). Nigeria witnessed oil boom in the 1970s and the concentration on the oil and gas production has led to the denial of attention on other real sectors of the economy such as agriculture, manufacturing and mining (Sanusi, 2010).

This study seeks to examine the impact of Agricultural and Mining sectors on the economic growth of Nigeria. Following this introduction, section two shares some related literatures on the core area of study, while section three deals with the methodology of the study. Presentation and discussion of the result findings are discussed in section four while sector five draw the conclusion and made some important recommendations.

agricultural sector is essential to the progress of the country.

Akongwale (2013) analysed the role of solid minerals on economic diversification in Nigeria, employing both qualitative and quantitative (descriptive) analysis. The study shows that the solid mineral sector in Nigeria has the potential to contribute immensely to the economy of Nigeria. Specifically, it reveals that the development of the solid mineral sector could help to combat poverty in Nigeria via job creation; especially, given its forward linkage with other sectors of the economy. The study recommends the strengthening of Nigeria's existing solid mineral development policy and creation of an enabling environment by the government for the private sector to take the lead in the sector.

Adeniyi (2013) examines solid minerals and economic growth in Nigeria by employing qualitative analysis. The study revealed that the solid mineral sector remains crucial to economic development, wealth creation and poverty alleviation in any nation that is blessed with such mineral deposits and concluded that Nigeria government should adopt best practices and mechanisms that have been used by different countries to formalize and regulate mining explorations in order to attain sustainable development in the mining sector in Nigeria.

Adekeye (2010) examines the impact of conflict on mining in Nigeria. The study revealed that there is much more to be gained from the development of mining sector than is usually organized and there is very much to lose from the non-development of the sector. Agba (2007) in his study on economic analysis of natural resources sustainability for the mining sector component in Nigeria, employing both qualitative and quantitative (descriptive)

analysis. The study revealed that Nigeria stands to benefit from the development of solid minerals sector and concluded that the government must provide enabling environment for the private sector investment in mining.

**Methodology**

**Method of Data Analysis**

This study made use of Augmented Dickey-Fuller test, Johansen Cointegration test, and ordinary least

squared (OLS) regression model to examine the impact of Agricultural and Mining sectors on economic growth in Nigeria spanning the period 1999 – 2017 using quarterly data.

**Model Specification**

The study adapted the model of Olajide, Akinlabi and Tijani (2015) which was modified to achieve the objectives of the study. The functional form of the model is expressed as:

$$RGDP = F(AGR, MIN).....(1)$$

The econometric model of equation 1 is expressed as:

$$GDP_t = \beta_0 + \beta_1 AGR_t + \beta_2 MIN_t + U_t .....(2)$$

Where:

RGDP<sub>t</sub> = Real Gross domestic Product at current period

AGR<sub>t</sub> = Agricultural performance (output) at current period

MIN<sub>t</sub> = Mining Performance (output) at current period

U<sub>t</sub> = Error term

It is expected according to economic theory that the parameters  $\beta_1$  and  $\beta_2$  should have positive signs that is ( $\beta_1 > 0$ , and  $\beta_2 > 0$ )

**Presentation and Discussion**

**Unit Root Result**

A unit root test was carried out on all the variables in order to avoid misleading results by the used of Augmented Dickey Fuller (ADF). The ADF test

revealed that real gross domestic product, agricultural product, and mining output were non-stationary at levels but stationary after first difference as shown in Table 1.

**Table 1: Augmented Dickey Fuller (ADF) Unit Root Test**

Variables	Degree of Freedom	ADF CV at level	ADF t-stat. at Level	ADF CV at 1 <sup>st</sup> Diff	ADF t-stat. at 1 <sup>st</sup> Diff	P-Values at 1 <sup>st</sup> Diff	Order of integration
RGDP	1%	4.21	3.10	4.21	4.36	0.0002	1 (1)
	5%	3.47	2.52	3.47			
	10%	3.22	2.19	3.22			
AGR	1%	4.18	2.87	4.18	3.79	0.0006	1 (1)
	5%	3.47	2.63	3.47			
	10%	3.22	2.12	3.22			
MIN	1%	4.18	3.11	4.18	5.24	0.0001	1 (1)
	5%	3.47	2.34	3.47			
	10%	3.22	2.24	3.22			

Source: Compiled by Author(s) using E-views 7.0

**Cointegration Test Result**

Having confirmed the stationarity of the variables, we proceeded to test for co-integration among the variables. In testing for co-integration the Johansen multivariate co-integration test was used. The results of the co-integration tests are shown in tables 2. The trace statistic revealed that there were three co-integrating relationships at 5% level of significance, while the maximum eigenvalue statistic revealed no co-integration both at 5% and 1% level of significance. However, the trace

statistic was recommended because it possessed more power than the maximum eigenvalue statistic since it takes into account all of the smallest eigenvalues (Johansen and Juselius, 1990). Therefore, based on the co-integration test results, the null hypothesis that there is no significant co-integration was rejected at 5% level of significance. This mean that Real Gross Domestic Product (RGDP), Agricultural output (AGR) and mining output (MIN) had long-run equilibrium relationship among them.

**Table 2: Johansen co-integration Test Result**

Trend Assumption: Linear deterministic trend  
 Series: RGDP AGR MIN  
 Lag interval (in first difference): 1 to 1

Unrestricted Cointegration Rank Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.674553	36.20727	29.68	35.65
At most 1 *	0.435526	17.12384	15.41	20.04
At most 2 **	0.353009	7.402193	3.76	6.65

\*(\*\*) denotes rejection of the hypothesis at the 5%(1%) level  
 Trace test indicates 3 cointegrating equation(s) at the 5% level  
 Trace test indicates 1 cointegrating equation(s) at the 1% level

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
None	0.674553	19.08343	20.97	25.52
At most 1	0.435526	9.721646	14.07	18.63
At most 2 **	0.353009	7.402193	3.76	6.65

\*(\*\*) denotes rejection of the hypothesis at the 5%(1%) level  
 Max-eigenvalue test indicates no cointegration at both 5% and 1% levels

Source: Compiled by Author(s) using E-views 7.0

**Regression Result**

The regression result presented in Table 3 shows that Agricultural (AGR) has positive relationship with real gross domestic product (RGDP), and is significantly important in influencing it as indicated by the t-statistics which is greater than two in absolute term. Mining (MIN) was positive and significant. The F-statistics which showed the combined significance of the estimated parameters

and goodness of fit of the model was significant also. The result further showed that both the coefficient of determination (R2) and the adjusted coefficient of determination were 0.98 and 0.95 respectively. This meant that agriculture and mining could jointly explain 98% of the total variation in real gross domestic product while the remaining 2% not explained in the models was captured by the error term.

**Table 3: Regression Result**

Dependent Variable: RGDP  
 Method: Least Squares  
 Date: 01/15/18 Time: 09:45  
 Sample: 1999 2017  
 Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.754753	0.659232	2.328491	0.0003
AGR	0.812057	0.742594	6.187650	0.0001
MIN	0.244236	0.073998	2.692958	0.0005
R-squared	0.981360	Mean dependent var		17565.42
Adjusted R-squared	0.959720	S.D. dependent var		23815.78
S.E. of regression	0.248621	Akaike info criterion		23.22394
Sum squared resid	2.899809	Schwarz criterion		23.37307
Log likelihood	-7.566275	F-statistic		325.9005
Durbin-Watson stat	0.961946	Prob(F-statistic)		0.000000

Source: Compiled by Author(s) using E-views 7.0

The regression result shows that agriculture significantly and positively affected real gross domestic product in Nigeria for the period under review. This result corresponds to the works of Olajide, Akinlabi and Tijani (2015)) which showed that agricultural output and gross domestic product

(GDP) in Nigeria had positive and significant relationship. The regression result further showed a significant relationship between mining output and Gross Domestic Product (GDP) in Nigeria for the period under review. This means increase in mining output have significant impact on Gross

Domestic Product (GDP) in Nigeria during the period under study which is consistent with the work of Adekeye (2010).

### Conclusion and Recommendations

This study analyses the contributions of agricultural and mining sectors to economic growth in Nigeria. In doing this, the study tried to establish the relationship between agricultural output and Real Gross Domestic Product, mining output and Real Gross Domestic Product. The study revealed

that agricultural output and mining sectors have positive and significant impact on economic growth in Nigeria. Therefore, this study recommends that the government should take concrete measures to improve Agricultural and Mining sectors in Nigeria. Both sectors have tremendous potential to provide alternative sources of revenue and foreign exchange to channel towards improving the economic growth of Nigeria.

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