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IMPACT OF MONETARY POLICY ON AGRICULTURAL FOREIGN DIRECT INVESTMENT IN NIGERIA: 1985-2020

David D. Ogwuche, Ph.D.   Department of Economics,
                                 Bingham University,
                                 Nasarawa State

Obumneke Ezie, Ph.D.   Department of Economics,
                                 Bingham University,
                                 Nasarawa State

Elizabeth Obiaje   Department of Economics,
                                 Bingham University,
                                 Nasarawa State

ABSTRACT

The study examined the impact of monetary policy on foreign direct investment in agricultural sector performance in Nigeria, using annual data spanning the period 1985 to 2020. Given its significant role in providing employment to about 60 % of the economically active population and 70% of the country's poorest communities, agriculture has huge potential for achieving poverty reduction in Nigeria as many live below $1 dollar a day. The sector is bedevilled by problems such as organisational and weak policy, limited access to improved technologies in the form of improved seeds and the use of mainly crude farm tools such as hoes and cutlasses and underfunding leading to the problem of high food importation. The objective of this paper is to find out the significant relationship between foreign direct investment in agriculture and exchange rate, interest rate and money supply which are monetary policy variables in Nigeria. In this regard, the study employed the Autoregressive-Distributed Lag (ARDL) approach and established a long- run relationship between agriculture and interest rate, exchange rate and money supply. Specifically, the findings suggested that in the long-run only interest rate and money supply have significant effects on foreign direct investment in agriculture. Given the important role of interest rate and money supply in promoting agricultural sector performance, the study recommends that a significant decrease in interest rate and an expansionary money supply will lead to an increase in investment to the agricultural sector of the Nigerian economy.

Key words: Monetary Policy, Foreign direct investment in agriculture, Money supply.

INTRODUCTION

Monetary policy is the deliberate effort made by the monetary authorities to control the availability, supply and cost of money in the economy in order to achieve macroeconomic goals such as wooing foreign direct investment in agriculture and every other sectors of the economy. Hence, the importance of monetary policy in attaining desired objectives in the economy is crucial as over the years the central bank has been using it to influence the economic activities in Nigeria.

Suffice to say that agriculture constitutes the economic mainstay of majority of Nigerian households and contributes significantly to the overall economy (Oni, Nkonya, Pender, Phillips, & Kato, 2009). Agriculture provides food, raw materials, foreign exchange and contributes substantially to the gross domestic product (GDP). The sector has huge potential for achieving poverty reduction in Nigeria, given its significant role in providing employment to about 60 % of the economically active population and 70% of the country's poorest communities (Oboh & Adeleke, 2016). Since majority of the poor population in developing countries such as Nigeria reside in rural areas and engage in agriculture as their main source of livelihoods; any effective poverty reduction and sustainable growth strategy must necessarily involve agriculture (Todaro & Stephen, 2004).

The contribution of the Agricultural sector has grown at the rate of 4.52 percent in 2013, 6.23 percent in 2014. Agriculture is still the major driver of overall growth in Nigeria, the contribution of the sector are 25.13, 25.88 and 24.23 percent in 2018, 2019 and 2020 respectively, (NBS, 2021). The development of oil in the beginning of 1970s made Nigeria more dependent on the oil sector, at the same time the performance of the agricultural sector is affected negatively over the years. Even though the agricultural sector growth rate keep increasing from an average of about 3 percent in the 1990s to 7 percent in 2000, the food sufficiency in Nigeria continued to decline (Adeoti, 2002). Poverty in Nigeria is becoming an issue because almost 7 out of every ten citizen live below poverty line of $1 per day (National Bureau of Statistics, 2012). However, the FDI attracted to agricultural sector is small especially when compared with the potential need. Nigeria's share of FDI in Africa is around 20.68 percent but the portion of FDI inflow to Nigerian agricultural sector during the same period is less than 1 percent. During 1980-1984, it was 2.46 percent which is the highest and in 2012 it stood at 0.04 percent in (Ajuwon, 2013).

Agricultural sector development depends largely on the impact of macroeconomic policies in form of fiscal, monetary and trade variables (Aroriode & Ogunbadejo, 2014). Macroeconomic policies are generally designed with positive intentions; however, some of the policies may often have unintended and harmful outcomes especially on agriculture. A sound macroeconomic framework that is conducive to growth is usually characterized by low and stable inflation; investment-friendly real interest rate; a competitive and stable real exchange rate, a sustainable fiscal policy and a viable balance of payment (Fischer, 1993). This implies that accelerated agricultural growth largely depend on a sound and effective macroeconomic policy environment.

The agricultural sector in Nigeria has attracted considerable government policy attention overtime due to its crucial role in economic development. In particular, the strong linkages (both forward and backward) between agriculture and other sectors of the economy has necessitates a robust understanding of the influence of monetary policy outcomes on agriculture.

As the farm sector becomes increasingly integrated with the nonfarm sector; macroeconomic developments both at the domestic and international levels tends to significantly affect costs of farm inputs, product prices, farm income and profitability levels. This is particularly true with respect to monetary variables such as exchange rates, interest rates, and inflation as well as their impacts on the farm sector (Devadoss, 1985).

The role of monetary policy in promoting economic growth dates back to the time of Adam Smith and notable monetary economists such as Fishers, Tobin and Friedman. Since then, there has been a growing consensus among monetary economists and policy practitioners that monetary policy matters significantly for growth at least in the short-run. However, the focus of monetary policy researchers has recently shifted from whether or not money matters, to investigating the role of monetary policy in real sector growth. Among several aspects that have received considerable policy attention is the impact of monetary policy shocks on various economic sectors. Evidence has shown varying responses of different economic sectors to monetary shocks (Ibrahim, 2005; Hayo & Uhlenbrock, 1999).

This development portends significant policy implications for macroeconomic management as monetary authorities would necessarily have to weigh the consequences of its policies on different sectors of the economy. For a developing country like Nigeria in particular where agriculture remains a critical sector of the economy; such an impact study would provide valuable insights to the effectiveness of monetary policy in promoting agricultural growth.

Changes in monetary policy variables such as interest rate, exchange rate or inflation might significantly impact the prices and incomes of the agricultural economy. One of such is the fluctuation in the value of the local currency relative to other currencies which has considerable implications for agricultural trade. For example, an expansionary monetary policy stance is likely to reduce the value of the local currency which may in turn, stimulate exports and increase aggregate demand for agricultural commodities. Similarly, increase in inflation is likely to heighten prices of both farm inputs and outputs, and, therefore affect investment decisions. Also, changes in monetary policy stance affect the interest rate which in turn influences farmers' decision to borrow credit.

Monetary authorities such as the central banks implement monetary policy decisions using various instruments such as monetary policy rate, cash reserve ratio, open market operations and liquidity ratio. In particular, adjustment in the policy rate determines the rate that banks charge each other for short-term loans. These changes are reflected in other short-term interest rates which ultimately affect borrowing costs for firms and households (Benazic & Rami, 2016). For example, a fall in policy rate will lead to a corresponding

reduction in bank lending rate. This will translate to cheap borrowing cost and in turn encourage agricultural households and firms to increase production.

The money market provides a trading intermediary where funds from surplus units are deployed to deficit units. Since agricultural investments such as farming require funding; farmers, agro-processors and other agricultural sector stakeholders participate actively in the money market (Muroyiwa, Sitima, Sibanda & Mushonge, 2014).

Agricultural sector practitioners such as farmers borrow funds from the money market to purchase farm inputs including machinery, seeds, fertilizers, land and chemicals as well as working capital. Agricultural sector performance depends considerably on availability of credit which, in turn, is a function of interest rate; hence the linkage between monetary policy and agriculture. However, in recent times, monetary policy appears to have failed in directing credit to the agricultural sector. Credit to the agricultural sector declined from 4,377,626.29 in 2018 to 4,068,332.47 in 2019 and then 4,321,663.85 in 2020 (CBN 2020). Thus, agriculture provided 29.94% of the country's GDP in the third quarter of 2021, with its contribution to the GDP dropping to 26.95% in 2020 (Statista, 2022). Today, less than 50 percent of the country's cultivable agricultural land is being cultivated with smallholder and traditional farmers who use crude agricultural tools cultivating most of this land. The sector is bedevilled by problems such as organisational and weak policy, limited access to improved technologies in the form of improved seeds and the use of mainly crude farm tools such as hoes and cutlasses. Also, there are infrastructural inadequacies as the sector suffers from poor road network, lack of storage/processing facilities as well as inadequate irrigation facilities and underfunding leading to the problem of high food importation.

This paper will specifically investigate the effects of monetary policy on foreign direct investment in agriculture. Given the significant contribution of agriculture to Nigeria's economy, the paper would deepen our understanding of the impact of monetary policy on the agricultural sector and provide a guide on how to develop more effective policies towards increasing value addition and enhance international investments. Thus, the paper hypothesis that there is no significant relationship between foreign direct investment in agriculture and monetary policy in Nigeria.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Conceptual Review

Folawewo and Osinubi (2006) describe monetary policy as a mixture of premeditated methods to control the cost, supply, value and of the stock of money in an economy, in line with the estimated economic activity level. Monetary policy is essentially a programme of action undertaken by the monetary authorities, generally the central bank, to control and regulate the supply of money with the public and the flow of credit with a view to achieving predetermined macroeconomic goals (Dwivedi, 2005). Anyanwu (1993) defines it as measures designed to regulate and control the volume, cost, availability and direction of money and credit in an economy in order to achieve some specified macroeconomic policy objectives.

Foreign Direct Investment (FDI) is the inflow by investment (setting aside money or resources to obtain beneficial returns, such as interest, dividends or value appreciation) of foreign income into a particular economy involving multinational corporations (Agba, Adewara, Nwanji, Yusuf, Adzer & Abbah, 2018). Also, Foreign direct investment, according to the Organization for Economic Cooperation and Development (OECD, 2008), represents the purpose of creating a permanent interest of a resident enterprise in a single economy (direct investor) in an enterprise (direct investment enterprise) residing in an economy other than that of a direct investor.

Clunies-Ross, Forsyth & Huq, (2009) defined agricultural sector as "the part of the economy which is engaged in the cultivation of food and cash crops, besides other activities based on animals and plants including grazing, forestry, fishing and hunting". They defined agricultural productivity as "the average agricultural value added per worker". Agricultural development involves activities aimed at enhancing agricultural productivity and hence boosting agricultural output. According to Evbuonwan, Ukeje, Otu, Essein, Odey, Amoo & Abba, (2003), "the main thrust of agricultural development efforts has been to enhance and sustain the capacity of the sector to play its assigned role to attain sustainable level of production of basic food commodities.

Empirical Review
Elias and Udoh (2014) examined the effect of monetary policy on agricultural sector in Nigeria, using time series data covering the periods of 1970 to 2010 (40 years). The study captured both monetary and non-monetary policy variables such as lending rate, commercial banks credit to agriculture, exchange rate, government expenditure in agriculture and inflation rate in examining the effect of monetary policy on agricultural output. The study adopted the Auto- Regressive Distributed Lag (ARDL) Bound Testing Approach as a method for the analysis. The results obtained unveiled that exchange rate and government expenditure had positive and significant effect on agricultural output and, hence agricultural sector in Nigeria. The study recommended that a sound exchange rate policy should be implemented aimed at boosting agricultural exports in Nigeria. Also, government investment to provide the basic infrastructure and institutions should be sustained because without the appropriate institutions, monetary policy cannot impact positively on real sector.

Victor, Moses and Godday (2019) examined the impact of monetary policy on agricultural sector performance in Nigeria, using annual data covering the period of 35 years (1981 to 2016). The study employed the Autoregressive-Distributed Lag (ARDL) approach for the study and established a long- run relationship between agriculture value added and some monetary policy variables. The variables utilized were – money supply, inflation rate, maximum lending rate and real effective exchange rate, while agricultural value added was the dependent variable. Basically, the result suggested that in the long-run, money supply and maximum lending rate have significant effects on agriculture value added while exchange rate and inflation do not. Given the important role of money supply in promoting agricultural sector performance, the study recommends an expansionary but non-inflationary monetary policy to improve value addition to the agricultural sector of the Nigerian economy.

Theoretical Underpinning

The theoretical framework that underpins this paper hinges on the Keynesian model which recognises the crucial role monetary policy plays in an economy. According to Keynes, variations in money supply have an inherent impact on real variables such as the aggregate demand, the level of employment, output and income (Jhingan, 2004). Thus, in the Keynesian transmission mechanism, the impact of monetary policy is indirect, through the interest rate. As observed by Keynes, when the quantity of money increases, its first impact is on the interest rate, which tends to fall. Given the marginal efficiency of capital, the fall in interest rate will increase the level of investment through the multiplier effect, thereby increasing income, output and employment.

According to Thomas Malthus theory, birth and death rates vary according to changes in the standard of living, and the return to labour ultimately decreases because the amount of land available for agriculture is fixed. Malthus (1960) further states that as the population grows the rate of food production does not grow proportionately, thus real wages decrease, and subsequently the birth rate declines and the death rate increases. Hence, food production establishes the limits to population growth.

Malthus also proposed that the impact of population growth would be detrimental to the environment by outstripping all natural resources. This would result in severe environmental deterioration and famine, as well as the involution of agricultural intensification and irreversible land degradation. This was supported in the work of Martin (1987), and Lele and stone (1989), and they have found that where population densities have been high for a long period, land degradation, involution and perhaps even starvation sets in. This is quite true with the case of Nigeria. However, in some countries like Rwanda, Lewis, Clay and Dejaegher (1988) found that farmers were managing their resources wisely and have been able to maintain yields over time. In Kenya, Tiffen & Mortimore's (1994) found that population growth combined with market development and access to capital resulted in new technologies, which brought about increased productivity and improved land and water conservation. From the foregoing, the economic recession that Nigeria recently experienced was an eye-opener to the fact that agriculture seems to have been abandoned, and that there is a limited investment in agriculture (Adeniran, Akanbi & Sidiq, 2019). This is resulting to farmer's consciousness in managing their resources wisely so as to maintain yields over time and be able to meet the demand of increased population and export.

METHODOLOGY

The paper examine the impact of monetary policy on foreign direct investment in agricultural sector in Nigeria and because it is a cause and effect relationship which observes an existing situation and searching back in time for causal agent, the research design is the ex-post facto design.

This paper uses time series data covering a period of 35 years from 1985 to 2020. The research made use of secondary data on monetary policy and foreign direct investment in agriculture. The researcher sources relevant data which were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin of various issues and National Bureau of Statistics.

The fundamental assumption of the model of the paper is time series stationarity. The unit root test is required to ensure that the variables are stationary within I (0) and (1) because above this levels of integration the ARDL cannot be applied. Thus, since economic time series are non-stationary, the paper avoided spurious results by utilising Augmented Dickey Fuller (ADF) test to identify the order of integration.

Model Specification
This paper used Autoregressive Distributive Lag (ARDL) bound test to model the short run and long run effect of the extent to which monetary policy impacts on foreign direct investment in agricultural sector in Nigeria. This method was extensively used by Pesaran and Pesaran (1997); Pesaran and Smith (1999); Pesaran, Shin and Smith (2001). ARDL is sufficient and efficient in the mixture of different time series that show co-integration at different levels thereby avoiding spurious regression. The robustness of the results of the ARDL was examined using diagnostic test, such as serial correlation, normality and heteroscedasticity tests. The results of this test indicated the accuracy and reliability of the functional form of the models estimated. Monetary policy represents the independent variable while foreign direct investment in agriculture is the dependent variable.

$FDIAG = f(INTR, EXR, MS)$ .... (1)

Where;

$FDIAG$ = Foreign Direct investment in Agricultural Sector
$INTR$ = Interest rate
EXR = Exchange rate
MS = Money Supply

In linear stochastic forms:

$FDIAG = \beta o + \beta 1\ INTR + + \beta 2\ EXR + \beta 3 MS + Ut_2$ ....(2)

However, the ARDL model is thus;

$$\Delta FDIAG_t = \beta_0 + \sum_{g=1}^{k} \beta_{1i} \Delta FDIAG_{t-i} + \sum_{h=1}^{l} \beta_{2i} \Delta INTR_{t-i} + \sum_{i=1}^{m} \beta_{3i} \Delta EXR_{t-i} + \sum_{j=0}^{n} \beta_{4i} \Delta MS_{t-j}$$
$$+ \sum_{g=1}^{k} \beta_{1i} FDIAG_{t-i} + \sum_{h=1}^{l} \beta_{2i} INTR_{t-i}$$
$$+ \sum_{i=1}^{m} \beta_{3i} EXR_{t-i} + \sum_{j=0}^{n} \beta_{4i} MS_{t-j} + \varepsilon_t \ ...... (3)$$

Below is the ARDL ECM model

$$\Delta FDIAG_t = \beta_0 + \sum_{g=1}^{k} \beta_{1i} \Delta FDIAG_{t-i} + \sum_{h=1}^{l} \beta_{2i} \Delta INTR_{t-i} + \sum_{l=1}^{m} \beta_{3i} \Delta EXR_{t-i} + \sum_{j=0}^{n} \alpha_{4i} \Delta MS_{t-j}$$
$$+ \beta ECM_{t-1} + \varepsilon_t \; \ldots\ldots (4)$$

The model above is used to adjust the estimation until the ECM turned negative. The negative sign of coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

Where
Δ = first differencing operator
U_1 - white noise or disturbance term
Bo = is the intercept
$\beta_1, \beta_2, \beta_3, \beta_4 \ldots$ are the coefficient to be estimated

Presentation and Analysis of Results

Table 1: Descriptive Statistics

	LFDIAG	EXR	INTR	MS
Mean	47795593	121.6675	18.15139	8124.093
Median	49618205.	121.58500	17.58500	1729.440
Maximum	4.82E+08	381.0000	29.80000	36014.88
Minimum	120.1000	0.990000	9.250000	22.30000
Std. Dev.	1.05E+08	99.86235	4.102548	11141.91
Skewness	2.807935	0.844744	0.591389	1.233342
Kurtosis	10.45243	3.189658	4.277962	3.186506
Jarque-Bera	130.6150	4.335505	4.548228	9.178969
Probability	0.000000	0.114435	0.102888	0.010158

Source: Authors compilation, 2022 (Eviews-12)

Table 1 shows the descriptive statistics test which provides brief descriptive coefficients that summarize the data set used in the paper. It is a representation of the entire population of the paper. The descriptive statistics is broken down into measures of central tendency and measures of variability, or spread. The descriptive statistics table above shows the mean, median, maximum, minimum, skewness, kurtosis, Jarque-Bera, probability and standard deviation of thirty six (35) observations used in the paper. Foreign direct investment in agriculture (FDIAG) showed the highest mean followed by money supply (MS). This was an indication that FDIAG enjoyed economies of large scale investment and higher patronage within the sample period. Also, money supply and exchange rate has higher standard deviation values, indicating fluctuations recorded in the investment sector within the sample period. The variables, FDIAG, EXR, MS, INTR were positively skewed an indication that the distribution has a long right tail. Thus, the variables are leptokurtic kurtosis which means they are greater than 3 – slim or long tailed. Jarque-Bera test showed a normally distributed FDIAG, EXR and INTR with probability values of greater than 0.05

(5%) each, leaving MS variable not normally distributed, with less than 5% probability value.

Table 2: Summary of Unit Root Test Results

Variables	5% Critical level		ADF Stat.	5% Critical level		ADF Stat.	
	Level	Prob.		First Diff.	Prob.		Order of Int.
LfdiagnEXR				-3.548490	0.0007	- 5.281401	1(1)
LfdinINTR	-2.948404	0.0051	- 3.899116				0(0)
LfdinFDIAG				-3.548490	0.0000	- 6.974131	1(1)
LfdinMS				-3.548490	0.0001	- 6.157100	1(1)

Note: The test includes Trend and Intercept all at 5% level of significance
Source: Authors compilation, 2022 (Eviews-12)

Table two shows the results of the unit root test indicating varying levels of integration. Interest rate shows unit roots at levels and others show at first difference.

Table 3: Summary of Bound Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.547920	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.26

Source: Authors compilation, 2022 (Eviews-12)

The bound test also revealed an F-statistics value that was higher than the lower and upper bound test at 5% showing that there is co-integration between the dependent and independent variables. This co-integration suggests that there is a long run relationship between monetary policy and foreign direct investment in agriculture.

Table 4: Summary of ARDL-ECM

Variable	Coefficient	Std. Error	T. Statistics	Probability
XLFDIAG(-1)	-0.506147	0.115905	-4.366918	0.0002
D(EXR)	-678246.9	211496.5	-3.206894	0.0041
D(INTR)	2731953	1361517	0.000000	0.0000
D(MS)	4429.143	1471.829	3.009279	0.0065
R-squared	0.796868			
Adjusted R-squared	0.757804			
Prob(F-statistic)	0.000000			
		Long run ARDL		

Variable	Coefficient	Std. Error	T. Statistics	Probability
EXR	102342.3	415258.8	0.246454	0.8076
INTR	10700534	6162400.	1.736423	0.0965
MS	8750.709	2816.917	3.106485	0.0051

Source: Authors compilation, 2022 (Eviews-12)

From table 4 ARDL result, it can be seen that foreign direct investment in agriculture has a negative coefficient of -0.506147 and a P-value of 0.0002 meaning that foreign direct investment in agriculture has a negative and significant relationship with some of the variables of monetary policy. However, interest rate with coefficient of 2731953 and a P-value of 0.0000 has positive and significant impact on foreign direct investment in agriculture and interest rate. Exchange rate with coefficient value of -678246.9 and a P-value of 0.0041 means that there is a negative and significant relationship between foreign direct investment in agriculture and exchange rate. Money supply with coefficient of 4429.143 and a P-value of 0.0065 has a positive and significant relationship with FDIAG. Also, the P-value of the F-statistics of the model is significant indicating a goodness of fit of the model. Furthermore, R-squared of 0.796868 suggests that about 79% of variation in FDIAG is explained by the model while 21% is explained by variables outside the model.

From the foregoing, we can aver that interest rate and money supply has a positive and significant relationship with the dependent variable, that is, foreign direct investment in agriculture. Hence, we can submit that interest rate and money supply has a positive and significant relationship with FDIAG as against our initial hypothesis that there is no significant relationship between foreign direct investment in agriculture and monetary policy in Nigeria.

Fig.1 Stability test result

CUSUM ----- 5% Significance
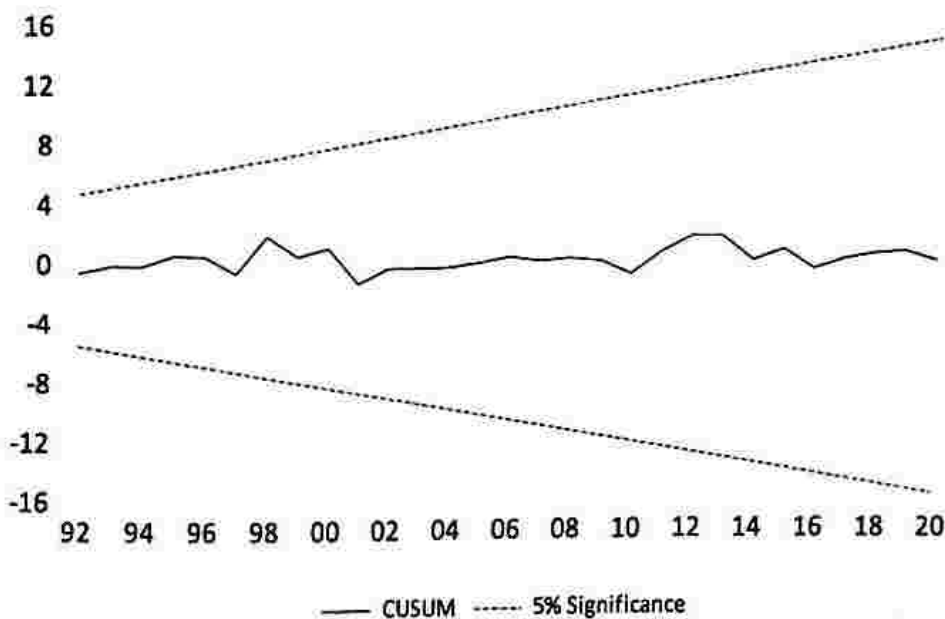
Also, the plot of the cumulative sum control (CUSUM) test result remains within their critical values represented by the two straight lines indicating that the coefficients are constant (Fig.1).

Table 5: Diagnostic test

Test type	F-Statistics
Heteroskedasticity Test	0.6479
Breusch-Godfrey Serial Correlation LM	0.6479

Source: Authors compilation, 2022 (Eviews-12)

The diagnostic test result indicates that the residuals of the ARDL specification are not affected by auto-correlation, heteroskedasticity or misspecification.

Table 6: ECM Result

Variable	Coefficient	Std Error	T-statistics	Prob.
CointEq(-1)*	-0.506147	0.097636	-5.184021	0.0000

Source: Authors compilation, 2022 (Eviews-12)

From the above result ECM is statistically significant, less than one and negative which shows that there is a high speed of adjustment from the short run to the long run of the model.

DISCUSSION OF FINDINGS

The short run result revealed a negative and significant relationship of FDIAG and EXR with their coefficient and probability as -678246.9, 0.0041. Also, the result revealed a positive and significant relationship of FDIAG and INTR with coefficient and probability as 2731953, 0.0000; it also unveiled a positive and significant relationship with MS with coefficient and probability as 4429.143, 0.0065. This indicates that during the review period exchange rate had no relevant contribution to foreign direct investment in the agricultural sector, hence, by having a negative association. But interest rate and money supply has a positive influence which may likely be the result of some good policies that were implemented under the review period. However, the low output of the agricultural sector, which results in importation is a result of poor technology, poor implementation of economic policies, inadequate funding and poor infrastructures. In the short run, ECM value of -0.506147 indicates that the adjustment from economic disequilibrium to stability will take Nigeria 50.61% of the time. This suggests that the likelihood of the nation escaping any state of disequilibrium such as stagflation or recession is a bit fair.

In the long run it was discovered that foreign direct investment in agriculture has a positive influence with the variables of monetary policy. The implication of this findings is that monetary policy has the capacity to influence greatly the investment into the agricultural sector with improved technology, policies and good management of production factors to increase output as to therefore, reduce if not stop importation.

However, foreign direct investment in agriculture has a negative relationship with monetary policy according to the findings of the paper. According to the findings, an increase in monetary policy will lead to a decrease in foreign direct investment in agriculture. The negative influence was found to be statistically significant (P-value 0.0002 <0.05). According to the coefficients, every 1% increase in monetary policy will results in a decrease of 506,147,000 in foreign direct investments in agriculture. Jonathan et al, (2020), research work establishes a negative association between monetary policy and agricultural sector in Nigeria. The findings indicate that the aggregate agricultural sector and its various sub-sectors consistently responded negatively to unanticipated monetary tightening in most of the forecast horizon; while the immediate impact of monetary policy shocks is transmitted to the agricultural sector through the interest rate and money demand (credit) channels. The paper concludes that the monetary authority should evolve interest rate, credit, and exchange rate policies that will promote the development of the agricultural sector in Nigeria.

CONCLUSIONS AND RECOMMENDATIONS

The paper therefore concludes that Nigeria economy has not being performing well due to the fluctuations in the exchange rate, interest rate and money supply while over the years; the government has made considerable efforts to increase productivity into the agricultural sector in Nigeria. On the basis of the empirical findings the following recommendations are proffered;

i. The study recommends that a significant fall in interest rate will lead to an increase in investment into the sector.

ii. Also, an expansionary money supply should be encouraged because if there is adequate money in circulation, it will serve as a bait for investors to troop into the Nigerian economy to do business thus boosting the gross domestic product.

iii. The government should also protect our exchange rate as a continuous fall or rise in it discourages investors as it brings uncertainty to them.

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Appendix one
Data used in analysis

Year	FDIAG N'BILLION	INTR %	EXR %	MS N'BILLION
1985	358.2	9.25	0.99	22.3
1986	298.7	10.5	3.31	23.81
1987	146.6	17.5	4.19	27.57
1988	120.1	16.5	5.35	38.36
1989	673.2	26.8	7.65	45.9
1990	2,207.00	25.5	9	47.42
1991	1,457.50	20.01	9.75	75.4
1992	4,028.50	29.8	19.66	111.11
1993	11,706.90	18.32	22.63	165.34
1994	349,127	21	21.88	230.29
1995	581,232	20.18	84.58	289.09
1996	878,036	19.74	79.6	345.85
1997	684,717	13.54	74.63	413.28
1988	891,749	18.29	84.37	188.15
1999	861,319	21.32	92.53	628.95
2000	4,958,294	17.98	109.55	878.46
2001	867,140.90	18.29	113.45	1,269.32
2002	4,964,116.40	24.85	126.9	1,505.96
2003	6,453,350.70	20.71	137	1,952.92
2004	7,744,020.80	19.18	132.85	2,131.82
2005	10,067,227	17.95	129	2,637.91
2006	16,107,563.30	17.26	127	3,797.91
2007	11,306,270.37	16.94	116.8	5,127.40
2008	12,493,686.89	15.14	131.25	8,643.43
2009	13,302,506.85	18.99	148.1	9,687.51
2010	4,340,000	17.59	148.81	11,101.46
2011	21,330,000	16.02	156.7	12,628.32
2012	76,750,000	16.79	155.76	15,503.41
2013	112,840,000	16.72	155.74	18,743.07
2014	24,320,000	16.55	168	20,415.61
2015	103,210,000	16.85	197	20,885.52
2016	43,290,000	16.87	305	24,259.00
2017	159,370,000	17.58	306	28,604.47

2018	299,970,000	16.17	307	29,774.43
2019	481,910,000	14.99	307	34,251.70
2020	300,780,000	11.78	381	36,014.88