

Agricultural output and food prices in Nigeria

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Abstract - The study evaluates the implications of agricultural output on food prices in Nigeria from 1981 to 2024. Data was sourced from the Central Bank of Nigeria (CBN) yearly journal. Using the Autoregressive Distributed Lag (ARDL) for the regression analysis, the evidences showed that agricultural output and food production index had favourable correlation with the food price index in Nigeria in the short run and long run. The study recommended that the authorities should find the agricultural sector in other to accelerate the agricultural output and more people should be employed to work in the agricultural sector to boost agricultural productivity which will go a long way in food price reduction.

Keywords: agricultural output, food prices, Gross Domestic Product (GDP), economic growth, agricultural economics

1. Introduction

Agricultural output as the total value of prices of amounts used for planting and formation of food of agricultural produce varieties churned out in a particular period, excluding quantities used as grains and the feed, which are also measured in the same pattern (Obayori (2014). According to Muhammed (2024) in his work on impact of financial policy on agricultural produce and prices of food in Nigeria, agriculture has locally become the main pillar of the nation's economy, adding to the GDP in tremendous ways including food security and job opportunities. Over sixty-five percent of gross domestic product (GDP) of Nigeria and the big mass of the revenue realized from the country's foreign exchange come from agricultural products exports before the late 1950s and early 1960s, when oil was detected in the southern part of the country (Okidim et al., 2023).

Agriculture accounts takes an unavoidable part of Nigeria's labour force which is about seventy-five percent and adds to the country's gross domestic product (GDP) in a significant manner (Matthew et al., 2019). It adds to the acceleration of Gross Domestic Product, i.e., a unit change in agricultural output brought about 34.4 per cent change in GDP as at 2021 (Azam & Khan, 2021). According to Babatunde et al. (2017), there are varieties of economic activities that are connected with agricultural processes implemented with the main purpose of making profit. These includes livestock and forestry, fishery, processing and finally the marketing of such agricultural produce. From Njoku and Oladosu (2025), the essential gains of the output of agriculture to the Nigerian economy include: the food availability, input to Gross Domestic Product (GDP), job creativity, agro-allied industries input delivery, creation of foreign returns to



labour and entrepreneurship enhancement through strength development. The realization of this fact led Nigerian government to embark on several agricultural development programmes in order to develop agricultural sector (Ogbonna & Osondu, 2015; Abdullahi, 2024).

As expected, availability of food should not be far from the issue of abundance, such that any demand changes or food items supply which will not have a prominent effect on the prices of food, including the general price level. It is anticipated that elevated agricultural output stages should minimize food product prices and at the same time, have a mitigating impact on the general rate of inflation (Benfica et al., 2017; Salik & Aras, 2020). It is a serious concern that despite the available agricultural inputs in the nation, prices of food items are still accelerating while the national rate of inflation is also exorbitant. The impediments surrounding agricultural output and prices of food is a cause for alarm taking into cognizance the perpetual food inflation which is an indicator of the rise in the general level of prices. Both local and extrinsic determinants control the food price fluctuations in the nation. Locally, insecurity, poor infrastructure, and climate variability significantly impact agricultural productivity, causing fluctuations in food availability and prices (FAO, 2022). Furthermore, exchange rate fluctuations and global market trends have further complicated food price stability (Nwokoji et al., 2021). It was also noticed that globally, disruptions in food supply chains exacerbate price increases and food insecurity worldwide due to rising food prices (NBS, 2024).

Agriculture remains a critical sector in Nigeria, contributing significantly to food production, employment, and economic development. Several studies have examined the relationships among agricultural output, food prices, inflation, and economic growth. However, the findings reveal both convergences and gaps that warrant further investigation.

Research on agricultural production consistently highlights the importance of smallholder farmers in ensuring food availability in Nigeria. Smallholder farmers contribute substantially to national food production despite facing challenges such as inadequate access to technology, finance, and infrastructure (Chiaka et al., 2022). Similarly, studies on agricultural productivity indicate that factors such as land quality, input utilization, and institutional support significantly influence crop productivity (Oni et al., 2019). Longitudinal analyses further reveal that although crop productivity has improved over time, growth rates remain insufficient to meet increasing population demands (Adediji et al., 2017).

Several scholars have investigated the determinants of agricultural output. Agricultural production has been found to depend on capital investment, labour availability, technological advancement, and government policies (Brown & Iyabode, 2020). More recent evidence demonstrates that technological adoption enhances both the intensity and diversity of agricultural production, suggesting that innovation can play a transformative role in the sector (Adeyemo et al., 2025). Furthermore, climate change has emerged as a significant threat to agricultural productivity, negatively affecting crop yields and potentially undermining food security (Omachi & Okoh, 2025). Similar findings from international research indicate that adaptation strategies are crucial for maintaining productivity under extreme climatic conditions (Mayorga et al., 2025).

The relationship between agricultural productivity and food prices has attracted considerable scholarly attention. Agricultural productivity improvements are generally associated with lower food prices and reduced inflationary pressures (Mbah et al., 2022). However, rising food prices continue to be a major concern in Nigeria due to structural inefficiencies, supply-chain disruptions, and macroeconomic instability (Po et al., 2025). Studies have identified transportation costs, exchange rate fluctuations, production shortages, and market imperfections as major determinants of food price inflation (Egwuma et al., 2019; Ogbonna, 2020). Consequently, increases in food prices have become a significant contributor to overall inflation dynamics in the country (Shehu et al., 2023).

Numerous studies have also examined the connection between food prices and inflation. Agricultural commodity prices have been shown to possess predictive power for inflation trends



in Nigeria, suggesting a strong transmission mechanism between agricultural markets and macroeconomic conditions (Tule et al., 2019). Recent investigations further indicate substantial regional variations in food price inflation across Nigerian states, highlighting the importance of localized economic conditions in shaping inflationary outcomes (Ayenigba et al., 2025). Moreover, the interaction between geopolitical risks, energy market fluctuations, and food price increases has intensified the cost-of-living crisis in Nigeria, exacerbating household vulnerability (Oyadeyi et al., 2024).

Food price volatility has important implications for household welfare and food security. Rising and unstable food prices reduce purchasing power and increase the likelihood of food insecurity, particularly among low-income households (Amolegbe et al., 2021). While many studies focus on macroeconomic indicators, relatively few examine the social and welfare consequences of food price fluctuations, suggesting an area that requires further scholarly attention.

The relationship between agricultural output and economic growth is another widely explored theme. Evidence suggests that increased agricultural output contributes positively to economic growth by generating income, employment, and export earnings (Samuel, 2025). Similarly, agricultural sector productivity has been linked to improvements in human development outcomes, including education, health, and living standards (Mekoma et al., 2025). These findings reinforce the strategic importance of agriculture in promoting sustainable development and poverty reduction.

Despite the substantial body of literature, several limitations remain. First, many studies examine agricultural productivity, food prices, and economic growth separately rather than investigating their interconnected dynamics within a comprehensive analytical framework. Second, most studies focus on either productivity determinants or inflation outcomes, leaving a gap in understanding the mediating role of food prices between agricultural output and economic growth. Third, the growing impacts of climate change, technological innovation, and regional disparities are often analysed independently, resulting in fragmented evidence. Finally, recent economic shocks and policy uncertainties suggest the need for updated empirical investigations that incorporate contemporary macroeconomic realities.

According to Saliu (2021) food prices are the worldwide and national mean price of particular food items. Different from the main reason for grading the correlation between agricultural output and demand at the market level, the price of goods adversely controls food enablement and income. It has control on the farmers and producers returns. Also, upon the large base of nutritious soils in the nation, hunger and starvation have been a pressing issue among Nigerian citizens due to downgrading of agriculture to the background. Several surviving factories are heavily reliant on input importation in their productive processes (Noko, 2015). Higher usage of required inputs such as land, labor, and farm implement also contributed to rise in agricultural products output Bachewe et al. (2019). This study seeks to reply the following questions coming up from the research which is what is the effect of agricultural output on food prices in Nigeria?

The main study objective is to unravel the implication of agricultural output on food prices in Nigeria. Specifically, the study seeks to: (a) assess the impact of agricultural output on food prices in Nigeria, (b) investigate how agricultural output reacts to the shocks of high food prices in Nigeria, (c) examine the short run and long run implication of agricultural output on food prices in Nigeria.

Sir James Stuart (1767) posited that cost-push theory rests on the idea that the commodity prices are mainly set by their underlying costs, with money supply adjusting according to demand. In this context, inflation tends to arise from mounting costs, and the resulting inflationary pressure can become persistent due to the ongoing interplay between prices and wages, often described as the price-wage spiral.



Leoning (2009) developed a model of food prices in agrarian economies, presenting an experimental inflation model that integrates various theoretical approaches. Rather than imposing restrictive assumptions, his model required multiple hypothetical tests to account for different scenarios. This framework considers the unique characteristics of developing economies, which are largely agrarian. According to Leoning, inflation arises from price adjustments driven by either excess demand or higher costs of imported supplies. The model examines inflation through the lens of the financial, extrinsic, and local sub-division markets, including those for food that can be traded and non-food agricultural commodities. A summary of Leoning's (2009) hypothesis, highlighting the role of divergence from long-run equilibrium, the influence of the domestic agricultural market, and the relative importance of domestic shocks versus external factors in driving inflation.

Food System Theory offers a comprehensive framework to understand the interconnectivity of stages of food production, distribution, consumption, and policy and how these elements impact local and global contexts. Food system theory originates from interdisciplinary approaches, especially in agricultural economics, sociology, environmental studies, and public health. It emerged as a response to the need for a more comprehensive understanding of how food-related activities are interconnected across scales local to global and how they impact societal, environmental, and economic outcomes (Pollan, 2006).

According to Muftaudeen and Abdullahi (2014), agricultural output refers to the total value of production or yield generated by a particular farming enterprise, whether consumed or sold. It represents the combined yield from crop produce, animal rearing, fisheries, forestry, and other agricultural products. This concept is crucial as it connects to the food systems sustainability and the ability to meet the rising population demands, especially in discussions around resource management and environmental impacts. It involves the production and sale of agricultural parameters such as crops, livestock, fish, timber, and other agricultural products. Additionally, it includes value-added activities such as processing, packaging, transportation, and distribution of agricultural goods (Adeshina et al., 2020).

Measuring agricultural sector output is important for several reasons. First, it enables an assessment of the productivity and efficiency of the agricultural segment. By evaluating total output, policymakers and economists can determine the sector's capacity to satisfy both domestic and international demand, as well as its growth potential. Second, agricultural output is a key element in the computation of a nation's gross domestic product (GDP). It shows the total economic performance and offers insight into the significance of the agricultural segment in connection to other sectors of the economy (Ogbonna & Osondu, 2015).

Food prices performs an essential duty in moulding consumption behaviour, and elevated food prices can have serious adverse effects on nutrition and health, particularly among low-income populations (Rosemary et al., 2013). In Nigeria, food price inflation has emerged as a major concern, with penetrating implications for both the national economy and the well-being of citizens. As one of Africa's biggest countries, Nigeria frequently experiences food price fluctuations controlled by a motley of microeconomic parameters. The agricultural sector, which is central to economic growth, is marked by price instability resulting from weak marketing structures, imbalances between supply and demand, and external shocks (Mukaila et al., 2021). While rising food prices generally favor producers, falling prices tend to benefit consumers. Consequently, food markets can significantly affect food affordability, nutritional outcomes, and the prevalence of hunger and malnutrition. Fang (2019) argues that global food price elasticity is lower than the elasticity of global food consumption.

The literature on food prices and agricultural productivity in Nigeria consistently demonstrates that rising food prices are closely linked to agricultural performance, macroeconomic instability, and household welfare. Several studies reveal that fluctuations in agricultural productivity directly influence food inflation, suggesting that improvements in



agricultural output can mitigate persistent increases in food prices and contribute to economic stability (Mbah et al., 2022; Toriola, 2022; Peter & Kwanashie, 2025).

Research further indicates that food price increases have substantial implications for household welfare, particularly among low-income populations that allocate a large proportion of their income to food consumption. Price shocks reduce purchasing power, increase food insecurity, and exacerbate poverty and nutritional vulnerabilities among Nigerian households (Ojiya et al., 2023; Amolegbe et al., 2021; Po et al., 2025).

Several scholars have identified multiple determinants of food price inflation, including exchange rate fluctuations, market inefficiencies, production constraints, supply chain disruptions, and rising input costs. Climate variability and global food price shocks have also emerged as significant factors affecting the prices of staple foods in Nigeria, demonstrating that food inflation is influenced by both domestic and international dynamics (Egwuma et al., 2019; Ogunmola et al., 2023; Mafimisebi et al., 2025; Justina et al., 2026).

The literature also highlights the important role of monetary policy in influencing agricultural productivity and food prices. Studies employing time-series and structural econometric approaches suggest that monetary interventions affect agricultural output through credit availability, inflation control, and investment incentives. However, the findings indicate that monetary policy alone is insufficient to address food inflation without complementary structural reforms in the agricultural sector (Muhammed, 2024; Achua et al., 2026).

Despite these contributions, the existing literature exhibits several limitations. Many studies rely heavily on aggregate national data and macroeconomic indicators, with limited attention to regional disparities, household-level heterogeneity, and long-term structural changes in the agricultural sector. Furthermore, relatively few studies adopt interdisciplinary frameworks that integrate economic, environmental, and social dimensions of food price dynamics. Consequently, there remains a need for more comprehensive and multidimensional research that examines the interaction between agricultural productivity, food price inflation, policy interventions, and household welfare in Nigeria (Akanni, 2019; Adekunle et al., 2023; Obayelu et al., 2021; Odion et al., 2025; Ogbonna, 2020; Ayoola et al., 2022).

The examination of the impact of persistent increases in food prices on the Nigerian economy, highlighting how food inflation adversely affects household welfare, purchasing power, and overall economic stability (Echebiri et al. (2022)). The study is significant because food inflation remains one of Nigeria's most pressing socioeconomic challenges, particularly given the country's high poverty rates and dependence on food consumption expenditures.

One of the strengths of the study is its relevance to contemporary economic realities in Nigeria. The authors successfully demonstrate that persistent food price increases contribute to declining living standards, increased poverty, and economic uncertainty. The article also underscores the interconnectedness between food inflation and macroeconomic variables such as income, employment, and economic growth, providing valuable insights for policymakers.

However, the study has several limitations. First, the analysis appears to rely heavily on descriptive discussions and secondary data, which may limit the ability to establish strong causal relationships between food price inflation and economic performance. The article could have been strengthened by employing more advanced econometric techniques, such as vector autoregression (VAR), cointegration analysis, or panel data methods, to provide more robust empirical evidence. Second, the study pays limited attention to regional disparities within Nigeria, despite considerable differences in food security and economic conditions across states and geopolitical zones.

Additionally, the paper primarily focuses on the negative consequences of food inflation and provides relatively limited discussion on structural factors driving food price increases, such as supply chain disruptions, insecurity in agricultural regions, climate change, exchange rate volatility, and inadequate agricultural infrastructure. A more comprehensive analysis of these



determinants would offer a deeper understanding of the issue and facilitate the development of more effective policy recommendations.

The cost of food production in Nigeria has increased significantly as a result of increasing prices of essential inputs such as labor, fertilizers, and fuel. These higher production expenses are ultimately transferred to consumers through increased food prices. Labor costs have gone up due to inflation and the growing demand for trained workers, while fertilizer prices have risen sharply because of higher global demand and disruptions in supply chains. Furthermore, escalating fuel prices, especially for farm machinery and transportation, have contributed to higher farming costs. Abimbola, (2022) and Bolaji (2022) note that increased fuel prices have impacted transport operators nationwide, leading them to raise transportation charges for both passengers and goods, which in turn has pushed food prices higher. This situation is further worsened by Nigeria's heavy reliance on imported agricultural inputs. Both producers and consumers are affected by rising cost of production. Producers experience shrinking margins of gain and are compelled to modify their output in response to increasing input expenses. To cope with these pressures, producers may cut back on production, which further constrains food supply in the market and contributes to higher food prices (Bellemare, Lee & Just, 2020).

Asuquo and Iwaat (2026) investigated the impact of price fluctuation on agricultural Produce marketing in the state of Akwa Ibom. Descriptive survey design was used as 29582 certified farmers were population of the study and a sample of 400 experienced farmers were improvised using Taro Yamane formula. Multi-stage sampling method was deployed to single out the study sample. Three professionals gave an approval for the instrument and intrinsic instrument consistency was finalized with a test-retest procedure. The trustfulness of the instrument was concluded as it gave a 0.92 reliability coefficient index with the use of Cronbach Alpha statistic. Two colleagues assisted with the work as the evidences revealed that Price fluctuations had prominent outcome on the demand of consumers and output level. It stated that unstable prices have added a favorable quota to the demand of the consumers for agricultural produce and output. The researchers looked at agricultural marketing without focusing on agricultural output and food prices which is the gap that this work seeks to cover.

Suleman et al (2025) assessed the agricultural sector's additions to the economic advancement of Nigeria. Pooled least squares procedures were used as 1990 to 2020 was used as the scope of study. The evidences displayed a non-prominent connectivity between agricultural output and GDP. The work recommended that people-oriented government policies on agriculture are essential to block the loopholes in agricultural output and foster inclusive advancement. Suggested policies includes; building storage equipment like silos to make sure all agricultural products are made available at affordable rates. Besides, the work stresses the why extra research on funding agriculture is essential to minimize joblessness in the republic. Food prices was neglected in the study which is the gap that this work aims to cover. Mbah et al (2022) examined the implication of agricultural productivity on food prices in Nigeria and watching if such anomaly will transcend into inflation, Scope of study was from 1981 and 2021 with a secondary data. The data were measured using a 3-variable structural vector autoregressive model (SVAR). Evidence showed that the transcending of productivity of agriculture to inflation in Nigeria was a parameter of the long-run. Advanced agricultural productivity causes a favorable change in the prices of food while an acceleration in food prices is followed by a downward inflation trend in the long run. The work suggested some solutions such as agricultural raw materials subsidization or passage of new laws to keep the cost of raw materials at a low level in order to stop an acceleration of food prices which may be the outcome of an advanced agricultural productivity because of the rise in the costs of production.

Muhammed (2024) goes into the implication of financial policy on agricultural output and food prices in Nigeria. The study scope was from 1995 to 2022 and data was obtained from the Central Bank statistical bulletin. Autoregressive distributed lag (ARDL) was the estimation procedure and the evidences displayed exchange rates boosting Nigeria's agricultural output and



food prices in the short and long run. Interest rates unfavorably impacts agricultural productivity and food prices in Nigeria in the long run but favorably influences agricultural sector advancement in the short duration. It also revealed that the supply of money minimizes agricultural productivity in the short and long period. It was finalized that the rate of exchange surges or elevates export-focused agricultural commodities but has a repercussion on imported food commodities or inputs in agriculture. Exorbitant interest makes agricultural technology investment to be monotonous due to accelerating cost of operations, which reduces agricultural productivity and accelerates the prices of food. High supply of money with an absence of investing in agriculture reduces agricultural productivity and steps up food prices. The authorities should ensure an exchange rate misalignment reduction and create a focused and imagined atmosphere for farmers to invest in techniques that enhances agricultural productivity.

Anderu and Omotayo (2020) evaluated the bond between the advancement of agricultural output and government spending in Nigeria and the scope of study was from 1981 to 2018. Augmented Dickey-Fuller (ADF) test was used to find out the stationary variable at levels and first differencing. The evidences revealed the short and long run implication of government expenditure on the advancement of agricultural output in the country. The policy repercussion is that any government expenditure distortions on agricultural sub-division would have side implication on the rise of agricultural output growth in Nigeria. The researchers looked at agricultural output and government expenditure in Nigeria without looking at the effect on food prices which is the gap this study will cover.

Omodero (2021) analysed the impact of agricultural output and food productivity on poverty alleviation in Nigeria from 2009 to 2019. After the autoregressive distributed lag was performed on the work, evidence showed that the index of Food Production prominently and favorably affects the alleviation of poverty, while Agricultural Output has an inconsequential unfavorable impact on poverty alleviation. The work finalized on the point that poverty alleviation in Nigeria and food assurance will rely on government's complete participation in agriculture and better budget for the sector. Also, providing the relevant equipment to improve the sector have been suggested. The researcher was silent on food prices as a result of the agricultural output which is the reasons for this study.

Eniekezimene et al (2023) delved into how value of the Nigerian exchange rate affects agricultural output. Scope of study was from 1981 and 2021 as the study utilized the Dutch Disease Syndrome theoretical framework with the application of non-linear autoregressive distributed lag (NARDL). The work revealed that while the lengthy-duration outcome of the exchange rate on agricultural output in the nation is symmetrical, the short-period implication is asymmetrical. Exchange rate exerted favorable implication on agricultural productivity in the long run and it was concluded that the national authorities looks at the rise in the agricultural sector jostling for each other in its economic efforts of diversifying as this will spread out the authorities' base of revenue for the sector. The researchers looked at how the exchange rate affects agricultural productivity without making mention of food prices which is the gap this study will cover.

Shehu et al. (2019) investigated the asymmetric impact of shocks from oil on prices of food in Nigeria, Quarterly time series data was utilized for the duration the first month of 2010 to the last month of 2017. Non-linear Autoregressive distributive lag complexity was deployed to explain asymmetric short run and long run effect of shocks from oil on prices of food in Nigeria. The evidences showed that favorable oil price shocks have healthy and prominent impact on prices of food while unfavorable trends have no visible implication on the prices of food. The researchers looked at the unfavorable and favorable impacts of shocks in oil price of food without looking at the agricultural output which is the gap that this paper is aiming to cover.

2. Method



The adopted methodology which is used to examine the impact of agricultural output and food prices in Nigeria. The chapter discusses the theoretical framework behind the specification of the model, the sources of data, the specification of the model as well as the estimation techniques

2.1 Model Specification

In order to look at the effect of agricultural output on food prices in Nigeria, we specify and estimate the dynamic growth model in the first equation

$$CRIND_t = f(AGO_t, FPIN_t, POPgr_t, GDP_t) \dots \dots \dots (1)$$

Where *CRIND* is the dependent variable which is the crop price index. The explanatory variables, *AGO* denotes agricultural output rate, *FPIN* stands for food production index, *POPgr* means population growth rate, while *GDP* means gross domestic product

$$CRIND_t = \alpha_0 + \beta_1 AGO_t + \beta_2 FPIN_t + \beta_3 POPgr_t + \beta_4 GDP_t + \varepsilon_t \dots \dots \dots (2)$$

Where the coefficients of $\beta_1 \dots \dots \beta_4$ denotes the parameters, α_0 shows the constant term, *t* represents time, ε_t stands for the error term.

2.2 Economic Apriory Criteria

The tests are used to know if the signs and sizes of the results are in line with what the economic theory is postulating thus the economic theory tells us that the coefficients are positively or negatively related to the dependent variable. Because of this the variables are put into consideration by summarizing their parameters and their priori signs in the table below.

The table will be guarded by these criteria

When a or b > 0 = conform

When a or b < 0 = does not conform

Variable	Expected sign
Crop price index	Positive
Agricultural Output	Positive
Food production index	Positive
Population Growth rate	Negative
Gross Domestic Product	Positive

2.3 Data Requirement and Sources

The data used includes that of Gross Domestic Product growth rate, agricultural output, formation of gross capital, rate of inflation, rate of interest and rate of exchange for the period covering from 1981 to 2024. The research work used secondary data which was collected from World Bank, Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics. Selecting the duration was based on data that was on ground. Augmented Dickey Fuller was used to check the statistical properties of the data.

2.4 Techniques of Estimation

Unit root test

Time series data are susceptible to counterfeit regression. We subject our data to unit root test to avoid this. We tested for the stationary state of the series using the Augmented Dickey Fuller (ADF) tests

$$\Delta y_t = \alpha_0 + \gamma_1 Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-i} + \varepsilon_t \dots \dots \dots 3.8$$

Where Y_t is the log of the variable in the time period *t* while *t* denotes the time trend, *p* indicates the lag length ΔY_{t-1} indicates the first difference at Y_t for example $Y_{t-1} - Y_{t-2}$, $y = \left[\sum_{i=1}^p \alpha_i \right]$ and $\delta_1 = \sum_{j=1}^p \alpha_j$ while ε_t is the stochastic error term with the mean 0.

The ADF test assumes a null hypothesis of a unit root in the Y_t series against the alternative of no unit root in the Y_t series. The equation 3.8 is in first difference which makes us to find out if the variable Y_t is a stationary series and contains the unit root if the estimated coefficient *Y* is equal to zero. The ADF test is a null hypothesis of a unit root in the Y_t series



against the alternative of no unit root in the Y_t series. Therefore $H_1: y = 0$ which implies that there is a unit root and $H_1: Y < 0$ which says no unit root exist.

2.5 Cointegration

The study used the ARDL bound testing approach for cointegration. An advantage of the ARDL bound testing is that it takes in several variables with different orders of cointegration which makes it applicable even when the series is showing a non-uniform integration order.

Besides the ARDL is usually robust in cases of small sample sizes and it ensures a more reliable estimates in the long run relationships. This flexibility makes the model to capture the cointegration regardless of a situation where the variables are integrated at $I(0)$ and $I(1)$ while fostering the accuracy and reliability of the long run model. This study employs the Autoregressive Distributed Lag (ARDL) model developed Pesaran et al (2001). The ARDL model is useful in order to know if the order of integration is first order or mixed and does not put a restriction on sample size. Equation 3 shows the short run and the long run dynamics of equation 2.

$$\Delta CRIND = \alpha_0 + \sum_{k=1}^n \alpha_1 \Delta CRIND_{t-k} + \sum_{k=1}^n \alpha_2 \Delta AGO_{t-k} + \sum_{k=1}^n \alpha_3 \Delta FPIN_{t-k} + \sum_{k=1}^n \alpha_4 \Delta POPgr_{t-k} + \sum_{k=1}^n \alpha_5 \Delta GDP_{t-k} + \beta_1 CRIND_{t-1} + \beta_2 AGO_{t-1} + \beta_3 FPIN_{t-1} + \beta_4 POPgr_{t-1} + \beta_5 GDP_{t-1} + \varepsilon_t \dots \dots \dots (3)$$

In the equation 3 above, $\beta_1, \dots, \beta_7$ are the long run parameters while $\alpha_0, \dots, \alpha_7$ are the short run parameters. α_0 is the drift component, Δ is the difference operator while ε_t is the error term. ARDL Bound test is used to confirm the presence of a long run cointegrating relationships and it also compares the upper and lower bound critical values which was provided by Pesaran et al (2001) with the value of the F-Statistic. If the F-Statistic is higher than the upper bound critical values, we reject the null hypothesis which shows that there is an existence of the cointegrated variables in the model. But if the upper bound critical values are higher than the F-statistic, the null hypothesis is accepted indicating the absence of cointegration among the variables in the model. The error correction coefficient that shows the speed of adjustment from the short run disequilibrium to the long run equilibrium is shown in equation 4.

$$\Delta CRIND_t = \alpha_0 + \sum_{k=1}^n \alpha_1 \Delta CRIND_{t-k} + \sum_{k=1}^n \alpha_2 \Delta AGO_{t-k} + \sum_{k=1}^n \alpha_3 \Delta FPIN_{t-k} + \sum_{k=1}^n \alpha_4 \Delta POPgr_{t-k} + \sum_{k=1}^n \alpha_5 \Delta GDP_{t-k} + \phi ECM_{t-k} + \varepsilon_t \dots \dots \dots (4)$$

Where Δ is the first difference operator, ϕ denotes the coefficients of the error correction term which shows the long run equilibrium adjusting speed after a shock in the short run.

3. Results and Discussion

3.1 Results

3.1.1 Descriptive Statistics

Table 1 below showed that mean value of the variables of CRIND, FPIN, POPGR, GDP and INFR are N8159billion N11538.6billion, N70billion, N2.612billion N40380.5billion and N19.225 respectively which showed that the economy is in a healthy condition. The standard deviation aspect showed that the Gross Domestic Product experienced the highest figure of 21992.310 while the growth rate of population revealed the lowest variation of 0. 228. The results of the skewness of CRIND, AGO, GDP and INFR are positive while that of population growth rate are negatively skewed. The Jacque-Bera statistics revealed that CRIND, FPIN and GDP are distributed normally since their values of probability are higher than 0.05 meanwhile the values of AGO, POPGR and INFR are not normally distributed.

Table 1: Descriptive statistics

	CRIND	AGO	FPIN	POPGR	GDP
Mean	8159.442	11538.590	70.562	2.612	40380.530
Median	7235.451	4418.725	71.365	2.655	31874.990
Maximum	17865.590	57498.630	119.820	3.070	79289.390



Minimum	1759.115	17.050	23.830	2.090	16048.310
Std. Dev.	5681.444	15669.490	29.609	0.228	21992.310
Skewness	0.383	1.514	-0.024	-0.944	0.452
Kurtosis	1.571	4.364	1.858	3.525	1.566
Jarque-Bera	4.819	20.222	2.393	7.033	5.267
Probability	0.090	0.000	0.302	0.030	0.072
Sum	359015.5	507698.1	3104.73	114.91	1776743
Sum Sq. Dev.	1.39E+09	1.06E+10	37696.68	2.241189	2.08E+10

Source: Eviews 12 output

Unit root test

It was done using the Augmented Dickey Fuller and Philip Perron which determines the stationarity properties between the parameters. Evidences showed that CRIND, AGO, FPIN and GDP were non-stationary at level but became stationary at first difference which showed that they were integrated to the order of one I(1) while POPGR and INFR were stationary at level which is an indicator that they are integrated to the order of zero which is I(0). The mix of I(0) and I(1) justifies the Autoregressive Distributed Lag(ARDL) acceptance.

Table 2: Unit Root Test table
ADF PP

Variable	Level	First Difference	Level	First Difference	Remark
CRIND	5.356 (1.000)	-2.114 (0.000)***	4.097 (1.000)	-3.643 (0.001)***	I(1)
AGO	19.821 (1.000)	-6.810 (0.000)***	16.121 (1.000)	-5.101 (0.000)***	I(1)
FPIN	2.117 (0.991)	-9.945 (0.000)***	4.128 (1.000)	-7.686 (0.000)***	I(1)
POPGR	-11.166 (0.000)***	-5.222 (0.000)***	-11.571 (0.001)***	-5.198 (0.000)	I(0)
GDP	-2.491 (0.996)	-12.076 (0.000)***	3.933 (1.000)	-1.759 (0.000)***	I(0)

Source: Eviews 12 output

ARDL Bound Test

The table below shows that the F-Statistic value of 6.289 is bigger than the upper bound critical values of 1%,2.5%,5% and 10%. This is an indicator that the null hypothesis of the long run relationship is not accepted therefore the presence of a long run relationship between the variables of the model exists which justifies using the ARDL at the long run and the short run.

Table 3: ARDL Bound test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.289	10%	2.08	3
K	5	5%	2.39	3.38
		2.50%	2.7	3.73
		1%	3.06	4.15



Source: Eviews 12

The table below reveals the long run implication of agricultural output and food prices in Nigeria. Agricultural Output (AGO) had an unhealthy correlation with the crop price index as a unit increase in the agricultural output will give room to 0.030-unit rise in crop price index at an insignificance level which conforms to the apriori expectation. This is because agricultural output will automatically reduce the price of food items which will lead to the advancement of the nation's economy.

Food Production Index (FPIN) had a healthy connectivity with the crop price index as a unit surge in the food production index will cause a 20.175-unit advancement in the crop price index at a 5% significance level as it obeys the apriori expectation. This is because food production index is an indicator that the crop production index is at a high level of economic productivity. Also, the Gross Domestic Product (GDP) has a positive implication to the crop production index as a 1-unit increase in the poverty rate led to a 0.211-unit acceleration in the crop price index at a 1% significance level as it in tandem to the apriori expectation. This is because high gross domestic product makes the economy to be on the path of agricultural productivity

Besides, the inflation rate (INFR) has a negative impact to the crop production index as a 1-unit rise in the inflation rate led to a 3.340-unit deceleration in the crop price index at an insignificance level as it does not conform to the apriori expectation. This is because inflation rate causes a persistent rise in the general price level and it minimizes the pattern in which the public patronizes goods and services.

Furthermore, the population growth rate also has a positive implication to the crop price index as a 1-unit boost in the population growth rate caused a 6273.55 unit rise in the growth of the economy at a 1% significance level as it conforms to the apriori expectation. This is because the population growth rate makes the authorities to propagate and introduce policies that will lead to an increase in agricultural productivity thereby reducing food prices.

Table 5: Long run table

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGO	0.030	0.032	-0.953	0.349
FPIN	20.175	8.887	2.270	0.031
GDP	0.211	0.016	13.475	0.000
INFR	-3.340	4.825	-0.692	0.495
POPGR	6273.554	1707.494	3.674	0.001
C	-19096.730	4589.645	-4.161	0.000

Source: Eviews 12 output

Short run

The table below shows the short run effects of agricultural output on food prices in Nigeria. The lag of Crop Price Index CRIND (-1) had a favorable connectivity with the economic growth as a unit surge in the crop price index will initiate a 0.211-unit acceleration in the crop price index itself at a 5% significance level which conforms to the apriori expectation. This confirms that the past crop prices will have a favorable effect on the current prices of crops in Nigeria as it will increase the demand of people in purchasing those crops.

Agricultural output (AGO) had a healthy connectivity with the crop price index in Nigeria as a unit advancement in the agricultural output will cause a 0.516-unit advancement in the current crop prices in Nigeria at a 1% significance level as it synchronizes with the apriori



expectation. This is because the agricultural sector makes the prices of food to be affordable to the consumers as it will go a long way in poverty reduction

Besides the lagged value of Agricultural output (AGO) had a healthy connection with the crop price index in Nigeria as a unit advancement in the agricultural output lagged value will cause a 0.516-unit acceleration in the current crop prices in Nigeria at a 1% significance level as it synchronizes with the apriori expectation. This is because the past agricultural sector output increases the demand of people in purchasing agricultural products.

Moreover, the Food Production Index (FPIN) has an encouraging implication to the crop price index in the nation as a 1-unit improvement in the food production index led to a 41.198-unit diminishing in the index prices of crops at a 1% significance level as it aligns with the apriori expectation. This is because food production index influences the price of food crops in Nigeria which will make it food affordable for low-income families.

Moreover, the Food Production Index lagged value (FPIN (-1)) has an encouraging effect to the nation's crop price index as a 1-unit rise in the food production index lagged value led to a 27.013-unit shrinking of the index prices of crops at a 1% significance level as it synchronizes with the apriori expectation. This is because food production index of the preceding year's influences the price of food crops in Nigeria in the present period which will make it food affordable for struggling families.

From the foregoing, the gross domestic product has a beneficial implication to the index of crop prices as a 1-unit increment in the gross domestic product led to a 0.140-unit acceleration in the crop price index at a 1% significance level as it does not synchronize with the apriori expectation. This is because the GDP lagged value was not stable because the GDP of the previous year was not favorable to the economy due to delayed implementations and adjustments that would have benefitted the public.

Yet the population growth rate (POPgr) had a good outcome on the index of crop prices as a-unit surge in the population growth rate led to a 2619.564-unit advancement in the crop price index at a 1% significance level as it concurs with the apriori expectation. This is because the rise in the population causes a surge in the demand of food in the short run.

The coefficient for CointEq (-1) was -0.565 at the 1% level of significance which points to the fact that approximately 56.5% of any disequilibrium in the economic growth short run was rectified in each year which returns the economy back to its equilibrium of the long run. The negative sign confirms that the deviations from equilibrium were gradually reduced over a period of time which confirms that nation showed a tenacity to be stable and to synchronize with a long-term path.

Table 5: Short run table

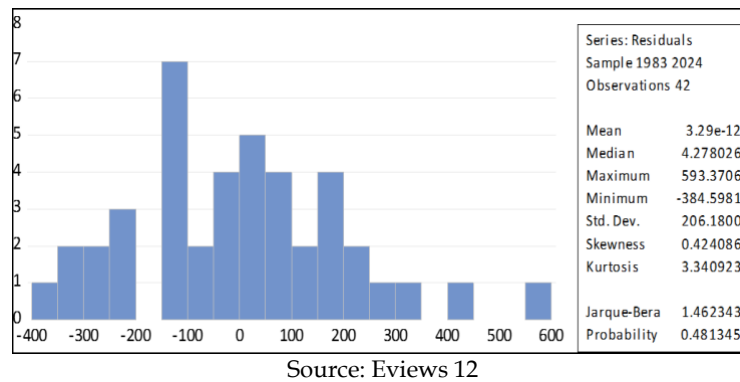
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CRIND(-1)	0.211	0.107	1.980	0.058
AGO	0.516	0.064	8.023	0.000
AGO(-1)	0.196	0.077	2.537	0.017
FPIN	41.198	9.971	4.132	0.000
FPIN(-1)	27.013	9.795	2.758	0.010
GDP	0.140	0.030	4.700	0.000
GDP(-1)	-0.158	0.038	-4.175	0.000
POPGR	2619.564	559.094	4.685	0.000
CointEq(-1)*	-0.565	0.077	-7.335	0.000

Source: Eviews 12 output

Diagnostic test



The histogram and Jarque-Bera normality test revealed the residuals as normally distributed. The Jarque-Bera probability value of 0.481 is bigger than the 5% probability level which means that the null hypothesis for the normal distribution can't be discarded. This points to the fact that the model is accurately examined and the residuals satisfies the assumption of normality. The histogram also accepts the distribution results as the residuals appears to be bell shaped. Table 6 Jarque-Bera Histogram normality test.



Stability test

The Cumulative Sum of the Residuals (CUSUM) and the CUSUM of Square (CUSUM SQ) tests was used to assess the model parameter stability. Figure 1 & 2 plots the graphs of CUSUM and CUSUM SQ tests.

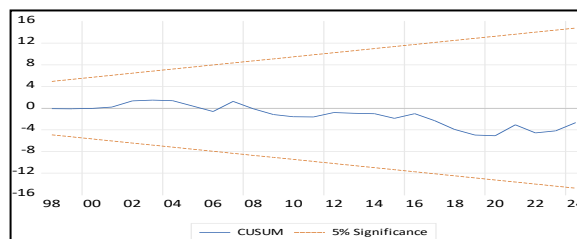


Figure 1: Cumulative sum of the residuals

Similarly, from the result of CUSUM, blue line falls inside the critical bands which are the red lines of the 5% confidence interval of the stability of the parameters which validates the estimates of the CUSUM that the mode is stable during the period.

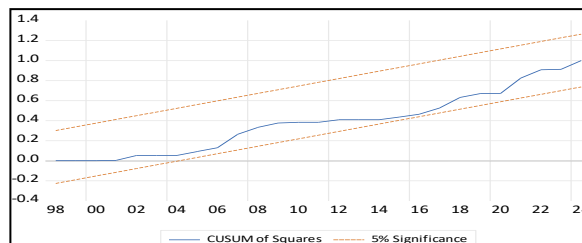


Fig 2: Cumulative sum of squares

Similarly, from the result of CUSUMSQ, the blue line also falls within the critical bands which are the red lines of the 5% confidence interval of the stability of the parameters which validates the estimates of the CUSUM that the mode is stable during the period.

4. Conclusion



The work looked at the outcome of agricultural output on food prices in the nation with a time series data from 1981 to 2024. Unit root test was done to prevent a spurious regression of the model while the ARDL bound test was used for cointegration test among the variables. From the results, both agricultural output and food production index had a significant favorable connectivity with the crop price index in the short run and long run. The study concluded that agricultural output and food production index has a favorable correlation with crop price index. Therefore, the following were suggested for policy purposes: The authorities should invest in the agricultural sector to boost national crop production index and agricultural output. This is by granting loans and subsidies to farmers along with selling affordable lands to farmers for farming purposes. If this is done it will contribute a large quota to the gross domestic product. The authorities should also engage the unemployed in the agricultural sector so that their contribution can lead to an increase in agricultural output that would cause drastic reduction in food prices.

References

- Abdullahi, B.M. (2024). 'The impact of monetary policy on agricultural productivity and food prices in Nigeria: A time-series analysis', *African Journal of Stability & Development*, 16(2), pp. 291-315.
- Abimbola, J. (2022) 'Factors responsible for high cost of food items in Nigeria and recommendations', *Info Guide Nigeria*. Available at: <https://infoguidenigeria.com> (Accessed: 4 September 2022).
- Achua, J., Eboreime, M., & Ohiaeri, I. E. (2026). The impact of monetary policy on agricultural output and food prices in Nigeria: A Structural Vector Autoregressive Analysis. *Food and Humanity*. <https://doi.org/10.1016/j.foohum.2026.101152>
- Adediji, I., Tiku, N., Sanusi, S., & Waziri-Ugwu, P. R. (2017). Trend analysis of crop productivity growth in Nigeria (1961-2014). 14-24. <https://doi.org/10.22004/ag.econ.265801>
- Adekunle, C., Kao, P., & Sergeo, T. T. N. (2023). Farm households' input demand and output supply response to price shocks in Nigeria. *Mediterranean Agricultural Sciences*. <https://doi.org/10.29136/mediterranean.1189118>
- Adeshina, K.F., Tomiwa, O.Y. and Eniola, O.O. (2020) 'Agricultural financing and economic performance in Nigeria', *Asian Journal of Agricultural Extension, Economics & Sociology*, 38(7), pp. 61-74.
- Adeyemo, J. T., Olagunju, O. E., Ilesanmi, K., & Lawal, A. I. (2025). Disaggregated Impacts of Technology on Agriculture in Nigeria: Insights into Intensity and Diversity. *Scientific African*. <https://doi.org/10.1016/j.sciaf.2025.e02722>
- Akanni, K. (2019). Agricultural price policy, consumer demand and implications for household food security in Nigeria.. *International Journal of Food and Agricultural Economics*, 2, 121-132. <https://doi.org/10.22004/ag.econ.163714>
- Akinyemi, O., Omisore, H. O., & Kupolusi, J. A. (2025). Analysis of Food Price Indices and Inflation Rate in Nigeria. *International Journal of Science for Global Sustainability*. <https://doi.org/10.57233/ijsgs.v11i1.779>
- Amolegbe, K. B., Upton, J., Bageant, E. R., & Blom, S. (2021). Food price volatility and household food security: Evidence from Nigeria. *Food Policy*. <https://doi.org/10.1016/j.foodpol.2021.102061>
- Anderu, K. S., & Omotayo, E. O. (2020). Agricultural output and government expenditure in Nigeria. *Jurnal Perspektif Pembiayaan dan Pembangunan Daerah*, 8(2), 101-110.
- Asuquo, E. E., & Iwatt, E. B. (2026) Effect of price volatility on agricultural produce marketing in Akwa Ibom State, Nigeria.
- Ayenigba, A. A., Ajao, O. M., & Igbobie, E. J. (2025). Spatial Variations in Inflation Dynamics: A Comparative Analysis of Food and General Consumer Price Indices Across Nigerian States (January 2023–January 2024). *Asian Journal of Science, Technology, Engineering, and Art*. <https://doi.org/10.58578/ajstea.v3i5.7068>
- Ayoola, J. B., La'ah, D., & Weye, E. A. (2022). Assessment Of The Price Fluctuation On Production Of Selected Food Grains In Nigeria (1981-2020). *Journal of Agripreneurship and Sustainable Development*, 5(2), 153–161. <https://doi.org/10.59331/jasd.v5i2.324>
- Babatunde, A., Biodun, O., Ibukun, F.O. and Bode, O. (2017) 'Agricultural output and economic growth in Nigeria', *Journal of Agricultural Economics and Rural Development*, 3(2), pp. 203-214.



- Bachewe, F.N., Berhane, G., Minten, B. and Taffesse, A.S. (2019) 'Agricultural growth in Ethiopia (2004–2014): Evidence and drivers', *Gates Open Research*, 3(661), pp. 1–20.
- Bellemare, M.F., Lee, Y.N. and Just, D.R. (2020) 'Producer attitudes toward output price risk: Experimental evidence from the lab and from the field', *American Journal of Agricultural Economics*, 102(3), pp. 806–825. <https://doi.org/10.1002/ajae.12004>
- Benfica, R., Boughton, D., Uaiene, R. and Mouzinho, B. (2017) 'Food crop marketing and agricultural productivity in a high price environment: Evidence and implications for Mozambique', *Food Security*, 9(6), pp. 1405–1418.
- Brown, E., & Iyabode, A. (2020). Determinants of Agricultural Production and Agricultural Sector Output in Nigeria. *Journal of Economics & Management Research*. [https://doi.org/10.47363/jesmr/2020\(1\)101](https://doi.org/10.47363/jesmr/2020(1)101)
- Chiaka, J. C., Zhen, L., Hu, Y., Xiao, Y.-T., Muhirwa, F., & Lang, T. (2022). Smallholder Farmers Contribution to Food Production in Nigeria. *Frontiers in Nutrition*, 9. <https://doi.org/10.3389/fnut.2022.916678>
- Echebiri, U. V., Abode, J. O., Andrew, A. E., Onaghise, I. A., & Amolo, O. B. (2022). Impact of persistent rise in food prices on the Nigerian economy. *International Journal of Business and Management Review*, 10(8), 21–29. <https://doi.org/10.37745/ijbmr.2013/vol10n82130>
- Egwuma, H., Ojeleye, O., & Adeola, S. (2019). What Determines Food Price Inflation? Evidence From Nigeria. *Fuoye Journal Of Agriculture And Human Ecology*. <https://doi.org/10.62923/fuojahe.v1i2.51>
- Eniekezimene, F. A., Wodu, E., & Anda-Owei, M. J. P. (2023). Interrogating the asymmetric impact of exchange rate on agricultural output in Nigeria. *American Journal of Applied Statistics and Economics*, 3(1), 24–32.
- Ewubare, D.B., Momodu, A.A. and Adiele, L.J. (2024) 'Agricultural output and insecurity in Nigeria', *International Journal of Research and Innovation in Social Science*, 8(7), pp. 324–332. doi:10.47772/JRISS.2024.807.
- Fang, M. and Zibo, S. (2019) 'An analysis on the influencing factors of the world food price', *Applied Finance and Accounting*, 5(2), pp. 35–41. <https://doi.org/10.11114/afa.v5i2.4412>
- FAO (2021–2022) *The state of food security and nutrition in the world*. Rome: Food and Agriculture Organization. Available at: <https://www.fao.org/state-of-food-security-nutrition/2021/en/> (Accessed: 20 September 2022).
- Idowu, M.A., Adamu, C.O., Fabusoro, E., Obayelu, A.E., Afolabi, W.A.O. and Fapojuwo, E.O. (2018). Effects of changes in food prices on food security and nutritional status among households in rural and urban communities of Ogun and Oyo States, Nigeria. *Journal of the Rural Sociology Association of Nigeria*, Pp. 58–64.
- Igweze-Ekwunife, A.E. and Okpala, C.J. (2022) 'Impact of government expenditure on agricultural output in Nigeria', *International Journal of Research and Innovation in Social Science (IJRISS)*, 6(12), 433–441.
- Justina, O. O., Ngozi, O., & Odemero, A. (2026). Global food price shocks and supply responses of staple crops in Nigeria. *Magna Scientia Advanced Research and Reviews*. <https://doi.org/10.30574/msarr.2026.16.1.0024>
- Loening, J.L., Durevall, D. and Birru, Y.A. (2009) *Inflation dynamics and food prices in an agricultural economy: The case of Ethiopia*. World Bank Policy Research Working Paper No. 4969. Available at: <https://ssrn.com/abstract=142762>
- Mafimisebi, T. E., Oni, F. O., & Awolala, D. (2025). Influence Of Climate Variability On Staple Food Prices In Nigeria: Evidence From Causality Analysis. *International Journal of Agriculture, Environment and Bioresearch*. <https://doi.org/10.35410/ijaeb.2025.5997>
- Matthew, O.A., Osabohien, R., Ogunlusi, T.O. and Edafe, O. (2019) 'Agriculture and social protection for poverty reduction in ECOWAS', *Cogent Arts & Humanities*, 6, 1682107.
- Mayorga, J., Villacis, A. H., & Mishra, A. K. (2025). Farm-level agricultural productivity and adaptation to extreme heat. *American Journal of Agricultural Economics*. <https://doi.org/10.1111/ajae.12509>
- Mbah, C. C., Orjime, S. M., & Mgbemena, E. M. (2022). Agricultural productivity, food prices and inflation in Nigeria. *Journal of Management, Economics, and Industrial Organization*. <https://doi.org/10.31039/jomeino.2022.6.3.8>
- Mekoma, C. N., Chukwu, S. N., & Ewubare, D. (2025). Agriculture Sector Productivity and Human Development in Nigeria. *Global Journal of Economic and Finance Research*. <https://doi.org/10.55677/gjefr/14-2025-vol02e9>
- Muftaudeen, O.O. and Abdullahi, H. (2014) 'Macroeconomic policy and agricultural output in Nigeria: Implication for food security', *American Journal of Economics*, 4(2), pp. 99–113.



- Muhammed, A. (2024). Impact of Monetary Policy on Agricultural Productivity and Food Prices in Nigeria: A Time-Series Analysis. *African Journal of Stability and Development (AJSD)*. <https://doi.org/10.53982/ajsd.2024.1602.06-j>
- Mukaila, R., Obetta, A.E., Awoyelu, F.E., Chiemele, C.J. and Ugwu, A.O. (2021) 'Marketing analysis of vegetables: The case of carrot and cucumber marketing in Enugu State, Nigeria', *Turkish Journal of Agriculture – Food Science and Technology*, 9(2), pp. 346–351. <https://doi.org/10.24925/turjaf.v9i2.346-351.4000>
- National Bureau of Statistics (2024) *Selected food prices watch (June 2024)*. Abuja: NBS. Available at: <https://www.nigerianstat.gov.ng/elibrary/read/1241536>
- Njoku, K.C. and Oladosu, I.O. (2025) 'Agricultural sector output and economic growth in Nigeria', *International Journal of Economics and Financial Management (IJEFM)*, 10, pp. 2695–1932.
- Noko, E.J. (2015) 'Impact of agricultural sector on Nigeria economic growth and development (1981–2015)'. Available at: <http://educainfo.com/agricultural-sector-nigeria-economic-growth/> (Accessed: 10 February 2018).
- Nwokoji, N., Aremu, F. and Otemade, A. (2021) 'Reasons behind rising cost of food items', *Tribune*. Available at: <https://tribuneonline.ng.com> (Accessed: 4 September 2022).
- Obayelu, A., Obayelu, O., Bolarinwa, K. K., & Oyeyinka, R. A. (2021). Assessment of the Immediate and Potential Long-Term Effects of COVID-19 Outbreak on Socioeconomics, Agriculture, Security of Food and Dietary Intake in Nigeria. *Food Ethics*, 6. <https://doi.org/10.1007/s41055-021-00085-w>
- Obayori, J.B. (2014) *The real sector performance and selected macro-economic aggregates in Nigeria*. Unpublished MSc dissertation, University of Port Harcourt.
- Odion, D., Gajardo, J., Defraeye, T., Motmans, T., Shoji, K., Evangelista, R., & Onwude, D. I. (2025). Towards improving farmers livelihood in Nigeria using food price forecasting. *Journal of Agriculture and Food Research*. <https://doi.org/10.1016/j.jafr.2025.102365>
- Ogbonna, S. I. (2020). Determinants Of Agricultural Food Grain Commodity Prices In Nigeria. *Journal of Agriprenurship and Sustainable Development*, 3(3), 202–211. <https://doi.org/10.59331/jasd.v3i3.150>
- Ogunmola, O., Verter, N., & Obayelu, A. (2023). Factors Influencing the Prices of Rice, Maize and Wheat Prices in Nigeria. *Agris on-line Papers in Economics and Informatics*. <https://doi.org/10.7160/aol.2023.150109>
- Ojiya, E., Asom, S. T., Ashifa, T., & Useni, Y. (2023). Agricultural Output-Food Price Nexus And Households' Welfare In Nigeria. *International Journal of Advanced Research in Accounting, Economics and Business Perspectives*. <https://doi.org/10.48028/iiprds/ijaraebp.v7.i2.03>
- Okidim, I., Obe-Nwaka, M., Okuduwor, A. and Lebari-Tuaneh, G. (2023) 'Dynamics of stabilization policies and investment effects on agricultural output in Nigeria (1981–2019)', *International Journal of Food and Agricultural Economics*, 11(2), pp. 83–97.
- Omachi, A., & Okoh, O. F. (2025). THE EFFECT OF CLIMATE CHANGE ON CROP YIELDS IN NIGERIA (1990–2023). *Economic Growth and Environment Sustainability*. <https://doi.org/10.26480/egnes.01.2025.33.38>
- Omodero, C. O. (2021). Sustainable agriculture, food production and poverty lessening in Nigeria. *transport*, 3(6), 81–87.
- Oni, O., Nkonya, E., Pender, J., Phillip, D., & Kato, E. (2019). Analyzing Drivers of Food Crop Productivity in Nigeria. 36–45. <https://doi.org/10.22004/ag.econ.147904>
- Owoh, A. (2024) Impact of inflation on agricultural output in Nigeria. *Journal of Current Research in Humanities and Social Sciences*, 3(2), pp. 13–18.
- Oyadeyi, O. O., Ukoli, K. C., Chandiramani, A., Rosas, J., Luo, J., & Oyadeyi, O. A. (2024). Navigating Economic Policy Uncertainty in Nigeria: The Influence of Soaring Food and Commodity Prices on the Cost-of-Living Crisis in Nigeria Amid Geopolitical Risks and Energy Market Fluctuations. *Energy RESEARCH LETTERS*. <https://doi.org/10.46557/001c.123839>
- Peter, O. A., & Kwanashie, M. (2025). Impact of Cereal Production on Food Inflation in Nigeria. *African Journal of Agricultural Science and Food Research*. <https://doi.org/10.62154/ajasfr.2025.018.010628>
- Po, I., Ba, A., Ij, O., A., M., M., Cc, I., & J, O. (2025). Farm Input Price Changes and their Impact on Households Welfare in Nigeria: A Review. *International Journal of Multidisciplinary Research and Growth Evaluation*. <https://doi.org/10.54660/.ijmrge.2025.6.6.400-408>
- Po, I., Ba, A., Im, M., Solomon, F. E., & Ekong, U. H. (2025). Microeconomic Determinants of Rising Food Prices in Nigeria- An Analytical Perspective. *International Journal of Advanced Multidisciplinary Research and Studies*. <https://doi.org/10.62225/2583049x.2025.5.1.3641>
- Pollan, M. (2006) *The omnivore's dilemma: A natural history of four meals*. New York: Penguin.



- Quinton, J., Jenkins, G. P., & Olasehinde-Williams, G. (2026). Economic Shocks and Trade Policy: Analyzing Household Food Insecurity in Nigeria Following the 2015 Oil Price Decline. *Food and Energy Security*, 15(1), e70140.
- Rosemary, G., Laura, C., Alan, D.D., Rachel, T., Bhavani, S., Mario, M. and Richard, D.S. (2013) 'The effect of rising food prices on food consumption: A systematic review with meta-regression', *BMJ*, 346, f3703. <https://doi.org/10.1136/bmj.f3703>
- Salik, A.M. and Aras, O.N. (2020) 'Trade restriction and its implications on domestic production of rice in Nigeria', *Journal of Business*, 9(2), pp. 41–53.
- Saliu, M.O. (2021) 'External macroeconomic shocks and stock price behavior in Nigeria: A structural vector autoregressive approach', *International Journal of Research in Business and Social Science*, 10(6), pp. 174–180.
- Samuel, A. O. S. (2025). Agricultural Output and Economic Growth: Evidence from Nigeria. *African Journal of Stability and Development (AJSd)*. <https://doi.org/10.53982/ajsd.2025.1701.31-j>
- Shehu, A., Abdullah, S. S., & Yau, N. A. (2019). Asymmetric effect of oil shocks on food prices in Nigeria: A nonlinear autoregressive distributed lags analysis. *International Journal of energy economics and policy*, 9(3), 128-134.
- Shehu, E., Abdullahi, B. M., & Mustapha, A. (2023). Inflation Dynamics and Food Prices in Nigeria. *Gusau International Journal of Management and Social Sciences*. <https://doi.org/10.57233/gijmss.v6i3.13>
- Suleman, O. S., Ogiaga, B. A., & Izuagie, U. A. (2025). Agricultural sector output contribution to Economic Growth in Nigeria: An Examination of the Critical Nexus: An Examination of the Critical Nexus. *Journal of Human Resources and Management Science*.
- Toriola, A. (2022). Effects of Agricultural Commodity Prices on Agricultural Output in Nigeria. *Journal of Economic Impact*. <https://doi.org/10.52223/jei4032203>
- Tule, M., Salisu, A. A., & Chiemeké, C. (2019). Can agricultural commodity prices predict Nigeria's inflation?. *Journal of Commodity Markets*, 16, 100087. <https://doi.org/10.1016/j.jcomm.2019.02.002>

