

Formal Financing, Country Risks and Livestock Output in Nigeria

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Abstract

Livestock, which accounts for 30% of employment among Nigeria's rural population, is essential to the country's local economy and efforts to reduce poverty. The growth of the livestock sub-sector is hindered, nevertheless, by a range of concerns, such as political, economic, and financial uncertainty, as well as insufficient government budget allocation. In light of this, the purpose of this study is to examine how formal funding and national hazards affect Nigeria's livestock production. Secondary data for the years 1995–2021 were gathered from the International Country Risk Guide (ICRG) and the Central Bank of Nigeria (CBN). Using E-view 9, the study used both descriptive and inferential statistics. Before and after the given model was estimated using Autoregressive Distributive Lag (ARDL), a variety of diagnostic tests were performed. The agricultural guarantee credit scheme funds (AGC) are statistically significant at the 5% level of significance, according to the short term ARDL model. Other variables, such as commercial bank credits (CBC), budgetary allocation to agriculture (BAA), and exchange rate control variable (EXR), are not statistically significant in the short run. The control variable of prime lending rate (PLR, 0.0653) is statistically significant at 5% level of significance. Among other things, the study suggests that banks create customized credit solutions that address the particular requirements of cattle farmers, offer flexible periods for repayment, and form alliances with input suppliers and agriculture specialists.

Keywords: Formal Financing, Livestock Output, Agricultural Credit

JEL Classification: A12, B21, E23, E58, E61, G21, H53, H61, H81, Q13

1. Introduction

Livestock is vital to Nigeria's economy and poverty alleviation, contributing 30 percent to the rural population's employment in the country, but contributing just about 2-3% to the nation's gross domestic productivity (L-PRES, 2024), signaling the under-

development of the sub-sector, despite its potency in enhancing economic stability, growth and creation of hedge against rising food inflation and insecurity. In terms of employment generation, Livestock is estimated to directly and indirectly engage

more than 14 million people in the country (Suleiman, Aliyu & Bello, 2021).

Live-stock, including animals, milk, and eggs, generate revenue, provide investment, insurance, and savings in areas without alternative sources, and enhance income diversity and asset accumulation, particularly for households below poverty threshold. Steven et al (2020) found that investing in cattle fattening enterprises, goat value chains, and dairy farmer hubs can boost milk productivity and net farm returns, leading to significant macro-level effects in Kenya, where dairy policy advocacy efforts lead to industry wide gains of over USD 30 million annually. Livestock production in Nigeria was primarily centered on nomadic pastoralism even before the British Colonial Administration arrived. It contributes one-third of the country's agricultural GDP and offers a variety of benefits including income, employment, food, fuel, manure, farm energy, and transportation (Alhassan, 2022).

The livestock subsector has sluggishly expanded from an estimated 9.3 million cattle, 8.8 million sheep, 20.8 million goats, 133.5 million poultry, and 0.86 million pigs in 1981 (Federal Ministry of Agriculture, 1981), to an estimated 18.4 million cattle, 76 million goats, 43.4 million sheep, 7.7 million pigs, and 80 million poultry farmers as of 2017. At that time, the livestock subsector accounted for 5% of the total GDP and 17% of the agricultural GDP. Despite the socioeconomic, health and environmental impact of livestock production to Nigeria's economy, especially

in the face of growing food inflation and insecurity, dwindling oil revenue as a result of the unimpressive macroeconomic outlook, with consequential economy shamble in the country since 2015, the focus on livestock development subsector as a fallback option for building economic resilience is stifled due to lack of adequate finance (Akpan et al, 2023).

Nigeria's renewed interest in agriculture depends on the extent of institutional credit directed to the sector, both short-term and long-term. The agricultural sector faces challenges in obtaining formal financial services, with many farmers relying on informal financing methods. The lack of formal financial intermediaries and inadequate government interventions have led to a decline in the sector's output. This study examines the impact of formal institutional financing and country risks on Nigeria's livestock sub-sector output.

2. Literature Review

2.1 Livestock Production

Livestock are important to subsistence and economic development in sub-Saharan Africa, as they provide essential flow of food products; generate personal income for individuals and public income for the government. According to a USAID funded FAO report (2019), livestock sub-sector development is fundamental to support the transformation of Nigeria in a sustainable way socially, environmentally and from a public health perspective.

Over the next three decades, Nigeria's population is projected for a rapid increase

and significant transformations. The population will nearly double to 400 million by 2050, and there will be three times as many people living in metropolitan areas - 280 million against 94 million, as there are now. The GDP per person will nearly treble to \$7,137 USD PPP (FAO GPS, 2018). The demand for livestock products is consequently expected to increase dramatically as a result of these changes; estimates indicate that consumption of milk, beef, and poultry meat will increase by 577 percent, 253 percent, and 117 percent, respectively (FAO GPS, 2018), creating the need for a radical transformation to meet the demands, which cannot happen without adequate funding. The increasing demand for products derived from animals, which is often associated with intensification, would need a rapid increase in herd size and productivity. The 2023 estimates of Agramondis, an agricultural bulletin, revealed that Nigeria's consumption of cattle products will increase by more than three percent by year 2050, noting that the amount of milk consumed in 2012 was 1.4 thousand tons and by 2050, this amount is expected to have grown by 262 percent to 4.2 thousand tons. Similarly, there may be a 250 percent increase in egg consumption between 2012 and 2050.

In certain scenarios, the number of cattle might triple to 37 million, while the number of chickens could double to 900 million. The structure of the industry may change significantly. For example, in intensive systems, the proportion of cattle may increase in some circumstances from 1% to 33%, indicating significant increases in

average productivity. The increasing livestock industry and the growing need for animal feed present the country with enormous developmental prospects. A significant income boost is possible for livestock farmers, input suppliers, animal health care providers, processors, wholesalers, retailers, and other stakeholders (FAO, 2019).

2.2 Institutional Finance

Finance as the hallmark of any adventure can be sourced in several ways. According to Ademola (2019), institutional finance is a type of funding that originated from financial organizations other than commercial banks. These financial organizations serve as a go-between or connector for investors and savers. They offer financial services and financing in sectors that are not covered by conventional commercial banking. Institutional financing is defined by Evbuomwan et al (2018) as a means or a portion of financing a work under a method of financing works prescribed periodically, either entirely or partially; in certain cases, capital subsidies (central financial assistance) available to residential consumers as an incentive have exacerbated issues due to long-overdue payments, complicated procedures, delayed disbursement, and intermittent availability (Ibe, 2014).

Lawal et al. (2019) opined that institutional financing should allow farmers to advance to a level of new technology that will boost productivity and jobs in the agricultural sector. Global funding initiatives (GFIs), framework agreements, finance partnership

facilities (FPFs), and trust funds with one or more donors are the many vehicles used for institutional financing collaborations. For the purposes of this study, financial assistance and support from the commercial banks, CBN actions, and budgetary allotments to agriculture are collectively referred to as institutional financing.

2.2.1 Nature of Government Intervention in Agriculture

The Central Bank of Nigeria (CBN) has implemented various schemes to support agricultural growth in the country. The Interest Drawback (IDP) scheme allows farmers to borrow money at market-determined interest rates, with a 40% interest refund for timely repayment. The Commercial Agricultural Credit Scheme (CACS) was created in 2009 to accelerate commercial agriculture growth, with a 9.0% interest rate. The Agricultural Credit Support Scheme (ACSS) offers a 14 percent interest rate, with a refund of 6.0% for full and timely repayment. The Anchor Borrowers' Programme provides farmers with N40 billion annually at a single-digit interest rate.

The Nigerian Incentive-Based Risk Sharing system for Agricultural Lending (NIRSAL) aims to identify, quantify, value, and distribute credit risk associated with agriculture. The National Programme for Food Security Fund supports SMEs, cooperative groups, and Apex Farmers' Associations with a funding structure of 40% grants, 80% loans, and 20% equity contributions. The Agricultural Credit Guarantee Scheme Fund (ACGSF) offers a

maximum 75.0% guarantee for agricultural loans, improving production, financial empowerment, and sustainable growth.

2.2.2 Government Expenditure/ Budgetary Allocation and Agricultural Financing in Nigeria:

The costs and expenses incurred by the government in the process of upholding governance are referred to as government expenditures. According to Edeh, Ogbodo, and Onyekwelu (2020), it is a fundamental tool of governance that is employed to foster economic growth, a necessary component of sustainable development. Public (government) spending is typically divided into two categories: capital and ongoing, and it includes expenses on both administration and defense, internal security, health, education, and foreign policy, among other areas (Aigheyisi, 2013).

Extant budgets represent public expenditures as well as government spending. These budgets show the amount that will be spent as well as the amount that taxes will take out of the stream of private expenditure (Everett, 2011). In Nigeria, from 1980 to 2011, the federal government spent less than 4% of its overall budget on agriculture—much less than it did on other important areas like water, health, and education. From 1.8% in 2011, 1.6% in 2012, 1.7% in 2013, 1.4% in 2014, 0.9% in 2015 and 1.2% in 2016, 1.7% in 2017, 2.0% in 2018, 1.56% in 2019, 1.34% in 2020, 1.37% in 2021, and 1.8% in 2022, the federal government allotted depressing budgetary figures to the agriculture industry (Premium Times, 2022). These numbers are all notably inadequate, as

they fall well short of the benchmark set by the Maputo Declaration, undermining Nigeria's agricultural industry and inevitably leading to a decline in agricultural output.

2.3 Country Risks

A country's dangers, whether they are political or financial developments that potentially alter the status quo, are collectively referred to as country risk. Nuno (2015) defines it as the likelihood that alterations to the business climate in a nation where individuals conduct business could have a negative effect on those activities and cause a loss of money. Timurlek and Kaptan (2012) viewed country risk as the political and economic factors that may affect productivity and performance of credit facilities. According to Meldrum (2000), practitioners are less concerned with the full range of potential outcomes and more focused on the risks that could prevent them from reaching a certain target performance. These risks include the possibility of capital being restricted or frozen by government action, as well as risks related to politics, the economy, sovereign risk, exchange rates, and transfer risk. The two aspects of country risks that were the focus of this study were political and economic and financial risks.

2.4 Political Risk

Political risk is the possibility that social and political developments in a country, along with policy decisions, could have an adverse effect on the economic environment and cause a loss (Alon & Herbert, 2009). Governments, corporations, and investors confront political risk when they think specific political outcomes would

significantly affect the projected value of an economic activity or the profitability of a business actor. Kaufmann (2006) argued that political stability in the economy would lead to economic growth. Political risk, often measured by variables such as political structure, ethnicity, or violent frequency, encompasses cultural, ethnic, economical, and institutional changes. It can be further divided into three categories: government risk, societal risk, government policy risk, and political risk.

The Political Risk Services (PRS) Group's International Country Risk Guide (ICRG) offers information on political risk and institutions. It rates government stability, internal conflict, corruption, ethnic tensions, and democratic accountability. Government stability is measured as the government's capacity to implement policies and maintain power; political violence is measured as political violence and its effect on governance; corruption is measured as the threat to government efficiency and the introduction of instability; ethnic tensions are measured as the degree of tension resulting from racial, national, or linguistic divides; democratic accountability is measured as the government's responsiveness to its citizens and fundamental civil liberties and political rights. Each indicator is rated from 0 to 12, with higher values indicating less political risk and better institutions.

2.5 Economic and Financial Risks

Economic risk is determined by a country's strengths and weaknesses, such as inflation rate and GDP per capita. An efficient financial system is vital for capital and money market security. Exposure to

financial markets, transactions, and process dependence all result in financial hazards. It is important to take into account variables like GDP, inflation, exchange rates, and foreign indebtedness in order to comprehend these dangers. A country's GDP is expressed as a percentage of the GDP of all the nations under the International Monetary Fund (IMF), and this is known as GDP per capita. Opening up to foreign investment and trade assisted in severing the link between savings and investment, which fueled economic expansion. The Consumer Price Index (CPI) is measured by the annual inflation rate, whereas the percentage of total exports of goods and services that is represented as external debt is known as foreign debt. A stable exchange medium between nations is the aim of monetary policy, which includes exchange rate stability.

2.6 Empirical Review

This section reviews empirical literatures on the relationship between agricultural financing, country risks and agricultural output in Nigeria, with special focus on the livestock sub-sector. Minja and Samwel (2018) explored the role of financial institutions and agriculture financing policies in Tanzania's agriculture sector growth. Using a mixed approach, data was collected through questionnaires and interviews, and analysis was done using Theme Content Analysis and inferential statistics. The results suggest a positive impact of financial institutions on agricultural development. Due to the qualitative approach adopted by the research, it does not measure the extent at

which financial institution affects agricultural development.

Lawal et al (2019) used secondary data from the Central Bank of Nigeria Statistical Bulletin to investigate the effect of bank lending on agricultural productivity in Nigeria. They discovered a unidirectional causal relationship between ACGSF and AGDP, confirming the estimate of ACGSF's contribution to AGDP change provided by the VAR model. Similarly, the effect of agricultural financing schemes on agricultural output in Nigeria was also studied by Ibitomi and Ijaiya (2019). The study discovered that while interest rates and capital stock had negative effects on agricultural output, Agricultural Credit Guarantee Scheme Funds, Commercial Banks Credit to Agriculture, Government Expenditure on Agriculture, Annual Rainfall, and Population Growth all had positive and significant effects. The study although considered the implication of formal financing on agricultural output, it does not look specifically into its effect on livestock subsector and did not also consider intervening effects of country risks.

Asukwo et al's (2020) study looked into how commercial bank lending affected the expansion of Nigeria's agriculture sector. Using multiple regression statistical approaches, the study discovered a substantial association between loans, advances, lending rate, liquidity, and bank assets on agricultural output. Ndubuaku et al (2020) study looked at how agricultural financing affected the economic growth of Nigeria's agricultural industry. The findings indicated that the contribution of agriculture to GDP was positively and non-significantly

impacted by government support, particularly through the Agricultural Credit Guarantee Scheme Fund (ACGSF). Ndubaka (2020) also conducted a similar research on how Nigeria's economic growth is impacted by the federal government's budget allocation to the agriculture sector. Time series data were used, and OLS multiple regression analysis showed that the amount of money the federal government allocated to the agricultural sector had a positive and significant impact on Nigeria's rate of economic growth. These studies focused on how the agricultural sector affects Nigeria economy, without considering factors that enhances the growth of agricultural sector.

Edeh et al (2020) investigated how government spending affected the output of Nigeria's agricultural industry. They examined variables such labor force participation, capital spending, ongoing expenses, agricultural loans, precipitation, interest rates, and economic reforms using secondary data. According to the study, recurrent expenses had a negative correlation with agricultural output, while capital expenditures had a positive and statistically significant correlation. In a related study, the association between the credit policy environment and Nigeria's livestock output index was investigated by Akpan et al (2023). They discovered that while loans from the agricultural credit guarantee plan had a short-term detrimental influence on productivity, overall commercial bank and domestic lending to the agricultural sector had a long-term favorable impact on animal production. While Edeh et al (2020) only focused on

public policy and public institutional finance effect on agriculture, neglecting the private sector, Akpan et al (2023) however reported a negative relationship between agricultural credit guarantee and productivity, which negates the findings of Ndubuaku (2020).

Using GDP as the endogenous variable and FDI, inflation (INF), money supply (M2), public and private domestic investment (DINVEST), and foreign exchange reserve (FExR) as independent variables, Nath, Begum, and Maleque (2024) investigated the impact of macroeconomic factors on economic growth in Bangladesh. Time series secondary data spanning the years 2005–2023 were used in the investigation. Macroeconomic factors are positively impacted by FDI and DINVEST, according to multiple linear regression analysis. Although it is statistically negligible, the money supply, foreign exchange reserves, and inflation all positively affect economic growth.

According to a review of the empirical literature on the topic, previous studies have mostly concentrated on institutional financing and agricultural output without making any particular effort to look at the composite determinants of agricultural productivity, like livestock production. However, the goal of this study is to examine the impact of different formal institutional funding sources in Nigeria, such as federal budgetary allocation, commercial banks, and interventions by the Central Bank of Nigeria, on the country's livestock subsector. Furthermore, this study took into account the innovative notion of

incorporating hazards unique to Nigeria in terms of politics, economy, and finance.

2.7 Theoretical Framework

In order to assist developing nations like Nigeria in making the transition from traditional subsistence agriculture to a modern, urbanized, and industrially varied economy, this study expands on H.V. Prochanow's 1944 expected income theory. The theory was employed by Sami et al, (2022) to analyse the role of financial banks in Libya in liquidity provision. According to the argument, the central bank should lend to banks based on the security of the short-term liquidation productive loans that commercial banks make. This idea guarantees banks adequate liquidity and a steady flow of money into the economy. Recounting loans allows the Central Bank to raise or lower bank reserves; when businesses grow, banks can recoup more reserves by recounting bills.

In light of this approach, commercial banks are anticipated to lend money to farmers for short periods of time so they can use it to meet their working capital requirements. Their loans are primarily intended to be used for farming operations, and the farm's profits are supposed to be utilized to repay the loans.

3. Methodology

Using a systematic disaggregation technique and a descriptive ex-post facto research design, this study examines agricultural operations in Nigeria from 1995 to 2021.

We gathered information on livestock output, budgetary allocation, agricultural guaranteed credit, and commercial bank credit from the Federal Bureau of Statistics, the Central Bank of Nigeria, websites that provide economic statistics, and the International Country Risk Guide. The following regression model, based on the model developed by Ndubaku et al (2018) was specified:

$$GDLV_t = \beta_0 + \beta_1 GS_t + \beta_2 IC_t + \beta_3 COR_t + \beta_4 ET_t + \beta_5 DA_t + \beta_6 GDPH_t + \beta_7 INF_t + \beta_8 EXS_t + \beta_9 PLR_t + \beta_{10} EXR_t + \mu_t \dots\dots\dots 1$$

Where,

GDLV = Gross domestic product of livestock production

CBC = Commercial Banks Credit

AGC =Agricultural Guaranteed Credit Scheme

BAA = Budgetary Allocation to Agriculture

GS = Government Stability

IC =Internal Conflict

COR= Corruption

ET= Ethnic Tension

DA= Democratic Accountability

PLR= Prime Lending Rate

EXR = Exchange Rate

PLR= Prime Lending Rate

EXR = Exchange Rate

U = Error term or Random term.

According to the model's a priori expectations, there should be a positive correlation between the variables and a positive sign for the impact of agricultural funding on livestock output.

4. Results and Discussion

Table 4.1

	GDLV	CBC	AGC	BAA	PLR	INF	EXR	GS	IC	COR	ET	DA	GDPH	INFDIFF	FDG	EXS
GDLV	1.000															
CBC	0.665 (0.000)	1.000														
AGC	0.582 (0.002)	0.384 (0.048)	1.000													
BAA	0.522 (0.000)	0.372 (0.000)	0.337 (0.086)	1.000												
PLR	-0.670 (0.000)	-0.592 (0.001)	-0.590 (0.001)	-0.593 (0.001)	1.000											
INF	-0.670 (0.000)	-0.592 (0.001)	-0.590 (0.001)	-0.593 (0.001)	0.237 (0.234)	1.000										
EXR	-0.225 (0.259)	-0.155 (0.439)	-0.274 (0.166)	-0.131 (0.514)	-0.507 (0.007)	-0.241 (0.226)	1.000									
GS	0.616 (0.000)	0.637 (0.000)	0.352 (0.072)	0.323 (0.000)	0.229 (0.271)	-0.275 (0.183)	-0.631 (0.001)	1.000								
IC	-0.654 (0.000)	-0.669 (0.000)	-0.364 (0.074)	-0.651 (0.000)	0.478 (0.012)	-0.122 (0.545)	-0.533 (0.004)	0.724 (0.000)	1.000							
COR	-0.604 (0.001)	-0.489 (0.010)	-0.602 (0.001)	-0.446 (0.020)	0.349 (0.074)	0.288 (0.145)	-0.279 (0.159)	0.308 (0.134)	0.549 (0.003)	1.000						
ET	-0.207 (0.301)	-0.086 (0.668)	-0.433 (0.024)	-0.085 (0.673)	0.419 (0.029)	0.117 (0.560)	-0.505 (0.007)	0.616 (0.001)	0.595 (0.000)	0.601 (0.000)	1.000					
DA	-0.517 (0.006)	-0.384 (0.048)	-0.621 (0.001)	-0.353 (0.071)	-0.355 (0.000)	-0.395 (0.042)	0.709 (0.000)	-0.309 (0.132)	-0.485 (0.010)	-0.425 (0.0268)	-0.505 (0.007)	1.000				
GDPH	0.486 (0.000)	0.412 (0.000)	0.602 (0.001)	0.699 (0.000)	0.373 (0.055)	0.360 (0.000)	-0.583 (0.001)	0.212 (0.310)	0.418 (0.030)	0.613 (0.001)	0.645 (0.000)	-0.607 (0.001)	1.000			
INFDIFF	-0.559 (0.003)	-0.439 (0.021)	-0.596 (0.001)	-0.411 (0.033)	0.048 (0.808)	-0.352 (0.072)	-0.116 (0.564)	0.557 (0.004)	0.715 (0.000)	0.544 (0.003)	0.739 (0.000)	-0.075 (0.712)	0.179 (0.369)	1.000		
FDG	-0.124 (0.538)	-0.051 (0.801)	-0.287 (0.146)	-0.035 (0.862)	-0.204 (0.000)	0.862 (0.308)	-0.650 (0.000)	-0.647 (0.000)	-0.247 (0.000)	-0.559 (0.214)	-0.690 (0.0024)	0.782 (0.000)	-0.552 (0.003)	-0.152 (0.449)	1.000	
EXS	0.585 (0.000)	0.187 (0.000)	0.649 (0.000)	0.854 (0.000)	-0.031 (0.879)	-0.457 (0.019)	0.132 (0.520)	0.067 (0.749)	0.159 (0.439)	-0.074 (0.717)	0.116 (0.573)	0.093 (0.652)	-0.262 (0.197)	0.456 (0.019)	0.057 (0.781)	1.000

Source: Author's computation, (2024)

In summary, the table above shows that there is a weak correlation between the factors. This suggests that multicollinearity could not be a significant issue for the regression analysis. According to Gandhi & Porter (2009) and Field (2013), a coefficient of correlation larger than 0.8 may indicate collinearity issue, however a coefficient of correlation less than 0.7 may indicate no multicollinearity between the explanatory

variables. Therefore, the current study is consistent with the recommendations made by Kennedy (2008) and Tabachnick, Tabachnick, and Fidell (2012) about the use of coefficient of correlation to determine multicollinearity. To determine the stationarity of the data for each variable in the table, the study also calculated and provided the results of a unit root test.

Table 4.2 Results of the augmented Dickey-Fuller Unit Root Test (ADF-URT)

Variables	Unit Root at Level		Unit Root at First Difference		I(d)
	Test statistic	p-value	Test Statistic	p-value	
GDLV	-3.310928	0.087	-4.143319	0.017**	I(1)
CBC	-0.529853	0.975	-6.803710	0.000***	I(1)
AGC	-1.557095	0.782	-5.799270	0.000***	I(1)
BAA	1.604827	1.000	-3.728006	0.039**	I(1)
PLR	-1.572264	0.482	-5.029377	0.000***	I(1)
INF	-12.60210	0.000***	-	-	I(0)
EXR	1.230735	0.997	-3.781311	0.008***	I(1)
GS	-1.702963	0.417	-4.154811	0.004***	I(1)
IC	-1.807974	0.368	-5.890190	0.000***	I(1)
COR	-3.885160	0.008***	-	-	I(0)
ET	-1.458687	0.538	-4.714888	0.001***	I(1)
DA	-2.095271	0.247	-4.649382	0.001***	I(1)
GDPH	-2.030725	0.557	-5.501299	0.001***	I(1)
INFDIFF	-5.502075	0.001***	-	-	I(0)
FDG	-13.43327	0.000***	-	-	I(0)
EXS	-2.608886	0.104	-4.845691	0.000***	I(1)

Source: Author's calculation (2024) using E-views 9

*Notes: (**) and (***) indicate stationarity at significance levels 5% and 1% respectively*

As depicted from the above table, every variable included in the research was either stationary at first difference or at level. The variables are a combination of I(0) and I(1), according to the results of the Augmented Dickey Fuller (ADF) unit root test. This is a necessary condition for the Auto-regressive Distributive lag (ARDL) test. Not a single

variable is I(2) as a result (Sebastian and Schneider, 2018)

Since we now know that the variables are a combination of I(0) and I(1), we can safely start the ARDL data estimation process. The next step of the research is to figure out the ideal lag time for the ARDL estimation test.

Table 4.3 ARDL Estimation Results

Variables	GDLV	CBC	No Long Run Relationship
D(CBC)	-0.000906 (-1.705) [0.104]	AGC	No Long Run Relationship
D(AGC)	0.000000 (2.1159) [0.047]**	BAA	No Long Run Relationship
D(BAA)	-0.000714 (-0.184) [0.855]	EXR	No Long Run Relationship
D(EXR)	-0.004124 (-1.983) [0.061]	PLR	No Long Run Relationship
D(PLR)	0.065341 (2.3058) [0.032]**	C	No Long Run Relationship
CointEq(-1)	-1.533627 (-2.505) [0.021]***	R-Squared	0.5164
	Model 2	Adj. R-Squared	0.3637
	GDLV	F-Statistic (Prob.)	3.3821 (p = 0.0193)

Source: Authors' Computation (2024) Using Eviews 9

The table above shows the result of the estimated ARDL short-run relationship between livestock production (% of GDP), being the dependent variable and commercial bank credits, agricultural guarantee credit scheme funds being the independent variables, while prime lending rate and exchange rate are the control variables included in the model estimation.

With a p-value of 0.021, the short run ARDL model exhibits a strong error correction term (ECT), indicating that the model rapidly adapts to changes in the long-run equilibrium relationship. At the 5% level of significance, the model shows that the prime lending rate (PLR) and the money from the agricultural guarantee credit scheme (AGC) are important. In the short term, other variables such as currency rates, budgetary allotment to agriculture, and credits from commercial banks are not

statistically significant. The livestock output (as a percentage of GDP) in Nigeria increases by 0.0001% and 0.0635 percent in response to increases in the AGC and prime lending rate, respectively. The bound test, however, reveals no sustained correlation between the explanatory variables and cattle production.

The agricultural guarantee credit program funds, commercial bank credits, budgetary allocation to agriculture, prime lending rate, and currency rate account for 51.6% of the variation in livestock output (percentage of GDP), according to the R-squared of 0.5164. The ARDL model as a whole with regard to livestock production (as a percentage of GDP) is statistically significant, according to the F-statistics illustrating the explanatory power of the independent variables determining the dependent variables, which

have coefficients of 3.3821 and associated p-values of 0.0193.

5. Conclusion and Recommendation

The study concludes that a positive relationship exists between institutional financing and livestock productivity in Nigeria, based on the findings of this research. Agriculturist guarantee credit scheme funds significantly impacted livestock production. Prime lending rate also influenced the relationship. Other variables like commercial banks credits, budgetary allocation to agriculture, and exchange rate did not have a significant effect in the short run. To meet the increased demand for livestock products, commercial banks should innovate specialized lending products, establish partnerships with experts, and explore microfinance. Governments should prioritize conflict resolution and peace-building in rural areas, manage economic and financial risks, and increase the agricultural sector budget.

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