



Received: 17-09-2024  
Accepted: 27-10-2024

## International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

### Domestic Savings and Economic Growth in Nigeria (1981 to 2021)

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#### Abstract

The significance of domestic savings remains a prominent topic in Nigeria's academic discussions, particularly due to its ongoing inability to close the savings-investment gap. In this context, the study explored how domestic savings influence economic growth in Nigeria. Specifically, it analyzed the effects of household savings, private sector savings, and public sector savings on economic growth, utilizing the time series data from 1981 to 2021 using the Autoregressive Distributed Lag (ARDL) model. The study design used was ex-post facto. The variables were integrated of order one I(1) and zero I(0), according to the results of

the Phillips-Perron and Augmented Dickey-Fuller (ADF) tests. The results showed that Nigeria's economic development is greatly influenced by family savings, business sector savings, and public sector savings. Based on these results, the study recommended several actions, including encouraging households to develop a savings culture, formulating policies to promote savings among firms for reinvestment into the economy, and establishing a government savings fund for emergencies. If implemented effectively, these measures could help bridge the savings-investment gap and enhance the country's economic growth.

**Keywords:** Domestic Savings, Household Savings, Firms' Savings, Public Sector Savings and Economic Growth

#### 1. Introduction

One important component of production that is necessary for economic development and expansion is capital. In developed nations, for example, output per labor unit exceeds that of developing countries, primarily due to a larger capital stock in the former. Developing countries need to significantly increase their capital to improve their economic growth and development. An increase in capital formation can lead to a rise in national income, subsequently boosting savings and investments. Lewis (1954) <sup>[23]</sup> highlighted a key difference between developed and developing countries: The latter typically save only 6% of their national income, compared to 12% or more in developed nations.

The amount of revenue saved aside for future use rather than being consumed immediately is known as savings (Stephen & Obah, 2017) <sup>[41]</sup>. It is not the same as an investment, which is the capital stock addition (Odey *et al.*, 2017) <sup>[30]</sup>. The basis for capital building and investment is savings. The term "private savings" refers to a household's disposable income that is not used for consumption, indicating that consumer spending has an enormous effect on savings levels.

The term "Gross Domestic Savings" (GDS) refers to the amount of funds saved by the public and private sectors of the economy after all costs have been paid. Development economists have been troubled for years by the idea that mobilising domestic savings is essential to maintaining the savings-investment growth chain in poor nations (Adelakun, 2015) <sup>[2]</sup>. For emerging countries, higher savings rates are essential because they can finance and encourage investments, which would help the country achieve its economic objectives.

Ohadoma (2018) <sup>[31]</sup> points out that in emerging countries like Nigeria, capital formation, economic growth, and stability depend heavily on savings and investments. The Economic Recovery and Growth Strategies document (2017-2020) demonstrated that although the Nigerian government has made significant strides towards economic recovery, the country's development initiatives have frequently failed to demonstrate stability, regularity, and a dedication to existing regulations and initiatives, which has hampered economic performance. As of 2020, Nigeria faced significant challenges: A population growth rate of 2.58%, an estimated infrastructure deficit of \$100 billion annually—189.77% above the 2021 federal budget of about \$34.51 billion—an unemployment rate of 9.01%, a GDP per capita decline of -4.26%, a 49.6% drop in foreign direct

investment, and a corruption perception index score of 25/100 (ranked 149 out of 180). Local and foreign loans have also surged, from \$29 billion in June 2010 to \$87.239 billion (approximately ₦33.107 trillion) by March 31, 2021, raising concerns about repayment amid a backdrop of social and ethnic challenges (Ejinkonye & Okonkwo, 2022)<sup>[18]</sup>.

Nigeria's consumption expenditures outpace its savings, despite the fact that the savings ratio is a major predictor of economic development, according to Pettinger (2018)<sup>[36]</sup>. This pattern suggests that exports and investments are underfunded in relation to consumption, indicating that economic managers give priority to short-term spending over long-term capital projects.

Nigeria's economic difficulties are closely tied to low income levels, which hinder savings capable of stimulating domestic investment (Adeusi & Ibitoye, 2010)<sup>[3]</sup>. The World Bank (2020)<sup>[47]</sup> also identified inadequate infrastructure—such as roads, electricity, and water—as a significant barrier to Nigeria's growth. Ohadoma (2018)<sup>[31]</sup> highlighted that Nigeria was rated poorly in the Africa Investment Index survey report of 2017.

As per Harrod-Domar economic development model, a key factor that influences economic growth rates is the amount of savings. Savings are vital to the economy because they provide a sizable pool of cash for investment, which is necessary for development and expansion of the economy. Ejinkonye and Okonkwo (2022)<sup>[18]</sup> pointed out that the propensity to save in sub-Saharan Africa is generally low, especially in countries grappling with war, weak economies, and widespread poverty. Less developed countries, including Nigeria, struggle to achieve high individual savings due to low per capita incomes and tendencies toward extravagant consumption among a small affluent group. Their study showed that Nigeria's marginal propensity to save is only 0.12, indicating a weak savings culture.

The amount and composition of savings in the financial sector are heavily impacted by shifts in the macroeconomic environment. Macroeconomic factors, domestic savings, and economic performance are closely related, especially because the market system is still immature. Pressure is applied to savings levels by elements such as high rates of inflation, low discretionary incomes, and restricted access to financial services. The private and public sectors of savings in Nigeria are heavily impacted by economic circumstances and policy, and the financial system's stability is essential to the mobilisation of savings. The inability of the financial sector to effectively mobilise savings necessary for economic growth might be a hindrance. For example, a small network of bank branches not only discourages people from saving, but also undermines government initiatives to encourage people to save.

The Nigerian economy's pace of expansion has persistently faced challenges due to low domestic savings, which are essential for capital mobilization to fund the total investments required for economic expansion. Nigeria's growth has been adversely impacted by the increase in savings mobilisation not keeping up with the developmental issues facing the country.

If the economy is not growing at the predicted rate, there can be problems with the systems and savings culture that result in insufficient investment. Thus, it is important to

investigate how domestic savings—that is, savings in the governmental, private, and household sectors—affect economic growth as shown by Nigeria's real GDP.

### Statement of the Problem

Nigeria, like many developing countries, requires rapid and sustainable investment growth to secure a long-term economic trajectory. However, the savings-investment gap has been a significant barrier to achieving this goal. Consequently, private investment—an essential driver of economic growth—has diminished in its influence on the country's GDP. For example, when domestic savings drop over time, so do the corresponding investment rates, which results in a diminished contribution to GDP growth. This begs the question of whether barriers exist between institutions and regulatory agencies that influence the way that individuals, companies, and the government save.

Since gaining independence in the 1960s, closing the savings-investment gap has been a primary objective of successive Nigerian governments. The nation has put in place a number of policy changes intended to fostering a savings culture, including financial liberalization and the NEEDS initiative. Although savings have increased as a result of these initiatives, the difference between saves and investment has not been sufficiently closed. For example, from N6,562.60 million in 1981 to N8,062,901.35 million in 1994, Nigeria had a definitive growth in its national savings (CBN, 2012). However, in 1995, this figure dropped significantly to N108,490.3 million (CBN, 2014)<sup>[11]</sup>. The rate of increase in national savings saw fluctuations, reaching a high of 14% in 1982 but then dropping to 11.28% by 1986, 2.4% in 1989, and -2.2% in 1995. The growth rate of savings has been modest since 2010. Domestic savings as a percentage of GDP decreased to 0.12% between 2013 and 2019, with just a minor uptick in 2021 (CBN, 2020)<sup>[12]</sup>.

According to Obadan and Odusola (2002)<sup>[28]</sup>, a number of variables, such as high rates of poverty, low disposable incomes, an undeveloped capital market, conspicuous spending, and a difficult economic climate characterised by high rates of unemployment and inflation, are responsible for Nigeria's low savings level. Similarly, public investment fell at same time, which contributed significantly to the investment rates falling from 12.3% of GDP in 1991 to 8.3% in 1992. The investment rate dropped to 8.9% in 1996 after rising to 12.5% in 1993 and 16% in 1994. The average rate increased to 16.2% after stabilising at 13% between 2001 and 2005 (CBN, 2010 reported in Imoisi, *et al.*, 2015)<sup>[22]</sup>. Gross domestic savings as a share of GDP was 21.66% in 2021 (World Bank, 2021). In spite of this, private sector investment's share of GDP has stayed very small. Thus, the purpose of this study is to objectively evaluate the influence of domestic savings on the expansion of the Nigerian economy throughout the given time frame.

### Objectives of the Study

The specific objectives are as follows:

1. To determine the extent to which household savings affect real gross domestic product (GDP) in Nigeria.
2. To analyze the impact of firms' savings on real GDP in Nigeria.
3. To evaluate the influence of public sector savings on real GDP in Nigeria.

## Research Questions

1. How significantly have household savings impacted real GDP in Nigeria?
2. In what way have firms' savings contributed to real GDP in Nigeria?
3. What is the extent of the impact of public sector savings on real GDP in Nigeria?

## Research Hypotheses

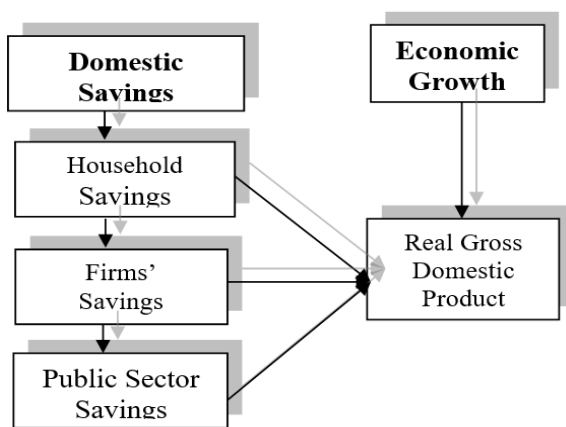
**H<sub>01</sub>:** Household savings do not significantly affect real GDP in Nigeria.

**H<sub>02</sub>:** Firms' savings have no significant effect on real GDP in Nigeria.

**H<sub>03</sub>:** Public sector savings do not significantly influence real GDP in Nigeria.

## 2. Review of Related Literature

### Conceptual Framework



**Fig 1:** Authors Conceptual Model, 2024

### Domestic Savings

Savings are the parts of income that people (personal savings), businesses (retained profits), or institutions (savings) do not use for immediate consumption (Odhiambo, 2021). Savings is essentially putting money away for later. Savings are any money that is not designated for immediate consumption, or After taxes, money that is not used for immediate consumption, according to Ejinkonye and Okonkwo (2022)<sup>[18]</sup>.

Savings can be invested, kept in reserve, or utilised to purchase material or immaterial goods. Saving money means sacrificing some of your existing expenditures. If money is not spent now, it can be invested and might yield dividends, interest, rent, or capital growth in the future, providing income for the saver.

The part of the country's current revenue that is not spent on consumption is known as savings. A nation's capital stock grows as a result of increased savings, which increases its ability to generate products and services. Therefore, savings can be achieved by either setting aside funds or reducing expenditures. Every economy must generate sufficient savings to meet its investment needs, either through domestic savings or borrowing from abroad. A higher savings rate typically leads to increased investment, contingent upon three key steps: First, a rise in actual savings to free up more funds for investments; second, an effective system for collecting and channeling these savings to investors; and third, actual investments that transform savings into productive capital (Mahmood, 2007)<sup>[24]</sup>.

Improving savings and making sure they are invested in profitable ventures are essential for quickening economic expansion. Low levels of savings have a negative impact on capital accumulation, which is vital for development, according to Osundina and Osundina (2015)<sup>[34]</sup>. Savings are therefore a macroeconomic factor that is necessary to achieve economic growth. There are three primary sources of domestic savings: Families, the private and governmental sectors.

When all factors considered, more domestic savings can encourage investment, which promotes economic expansion. An increase in domestic savings is indicative of more money that is accessible for investment. These monies have the potential to significantly boost economic growth and development in Nigeria if they are allocated to important economic sectors.

### Household Savings

Household savings are calculated by deducting consumption costs from disposable income after taking into consideration changes in pension benefits. After deducting current taxes, interest, and social contributions, the bulk of income that is available consists of revenues from jobs and unregistered enterprises, plus interest, dividends, and social benefits. This term includes owner-occupier imputed rental revenue as well.

Household savings are the amount of discretionary income that is not utilised for ultimate consumption. Social payments in kind are represented by the difference between available income and adjusted available income. Consequently, there is a unified understanding of savings. The actual savings ratio is influenced by three factors: (i) the unexpected income effect caused by inflation; (ii) the inflation impact on savings; and (iii) the savings ratio under the assumption of accurate relative price information.

### Firms' Savings

Firms' savings denote the earnings that are retained for reinvestment, cash reserves, or future expenditures rather than distributed as dividends. These savings are crucial for funding internal investments, enhancing financial stability, and facilitating growth. Various factors influence firms' savings behavior, including market conditions—where fluctuations in demand and competition impact savings; taxation and incentives—where tax policies can either encourage or discourage savings by altering the after-tax return (Devereux & Griffith, 2003)<sup>[15]</sup>; and access to finance—where firms with better credit access may choose to save less due to the ease of financing investments externally (Beck & Demirgüç-Kunt, 2006)<sup>[9]</sup>.

Firms' savings are integral to the financial ecosystem, influencing both individual firms and the broader economy. Current research highlights that market conditions, taxation, and access to finance significantly affect savings behavior.

### Public Sector Savings

Public sector savings refer to the portion of government revenues that is kept for the future instead than being wasted. expenditures or investments. These savings are important for funding public projects, stabilizing the economy, and reducing reliance on external debt. Factors that influence public sector savings include government revenues—the level of taxation and other revenue sources, which significantly impact public savings (Waqar & Babar,

2023) [46]; public expenditure management—effective oversight of public spending affects the government's ability to save; poor management can lead to budget deficits and lower savings; and macroeconomic conditions—economic growth, inflation, and overall stability can influence public sector savings. During economic downturns, savings may decline due to increased expenditures on social welfare programs (Abdul, Davide, & Petia, 2015) [1].

### Theoretical Review

The basis of the present research is the Harrod-Domar Theory of Economic Growth, a Keynesian model applied in development economics to characterise the degree of economic growth in relation to levels of saving and capital. It makes the argument that balanced growth in an economy is not a natural occurrence. This model, which Domar (1946) [16] and Harrod (1939) [21] separately developed, is regarded as a forerunner to the exogenous growth model (Hagemann, 2009) [20].

The unpredictability of the Harrod-Domar model's solutions is the main criticism levelled against it by neoclassical economists (Scarfe, 1977) [38]. The Solow-Swan model was developed in response to this criticism, which sparked an academic discussion in the late 1950s (Sato, 1964; Solow, 1994) [37, 40]. Three categories of growth are distinguished under the Harrod-Domar model: Warranted, actual, and natural growth.

The rate at which the economy may expand without going into a recession or going on forever is referred to as warranted growth. Real growth is the actual yearly growth in a nation's GDP. The growth required to sustain full employment is known as natural growth; for example, if the labour force expands by 3% yearly, the economy must grow by 3% annually to maintain full employment.

The following a priori presumptions form the basis of the model: The capital stock determines output, The marginal product of capital remains stable and the production function shows uninterrupted returning as it grows, suggesting that the mean and marginal products of capital are the same.. The ability to generate output requires capital. d. Savings is equal to production multiplied by the savings rate, and investment is the result. The shift in capital stock distinguishes depreciation from investment.

The underlying presumptions of the Harrod-Domar model are a major source of criticism, especially the notion that growth would inevitably lead to full employment. This presumption is based on the equal proportionate usage of labour and capital at a given relative price. Furthermore, the model assumes constant marginal returns to capital and constant savings rates, which may not be the case. Moreover, Critics have disputed the idea that the capital stock and productive capacity are directly correlated.; Domar subsequently admitted this as being impractical (Easterly, 1997) [17].

### Empirical Review

In Nigeria, Nwonye, *et al.* (2022) [27] explored the growth of savings within the economy, utilizing statistics from the CBN annual bulletin for the years 2011–2020. Their analysis, conducted through multiple regression, revealed that total savings positively and significantly influence Nigeria's GDP. They also found that private consumption expenditure negatively and insignificantly affects GDP, gross fixed capital creation, however, has a very detrimental

effect. However, core lending towards private enterprise has a noteworthy and favourable impact. Nonetheless, the study's rather brief duration could restrict its applicability for extended econometric evaluations of the influence of domestic savings on economic expansion.

Ejinkonye and Okonkwo (2022) [18] used data from the Global Development Indicators to investigate Using regression analyses to examined the effects of gross domestic savings and investments on the nation's economy between 1981 and 2020. Their theoretical framework was based on neoclassical growth theory and Harrod-Domar's Growth Model. They discovered a significant adverse relationship between GDP growth rate per capita and gross domestic investment, and a significant beneficial relationship between GDP per capita and gross domestic savings.

The effects of savings and investments on Nigeria's economic growth between 1980 and 2019 were examined by Agu and Omolade (2021) [6]. They found that both had a short- and long-term unfavourable and significantly adverse influence on economic growth, according to their statistical study, which included ARDL and co-integration tests.

Using yearly data from 1980 to 2015, Matthew and Manu (2021) [25] looked into how savings affected the expansion of the economies of thirty African countries. According to their research, there is a 3.96% gain in economic production for every 1% increase in savings. Additionally, they pointed out that while improvements in the current account balance and foreign direct investment stimulated development in the economy, they were unable to prove a link between growth and domestic savings.

Ahmed, *et al.* (2020) [4] used the autoregressive distributed lag (ARDL) model to examine how domestic savings affected Algeria's economic development between 1980 and 2018. They discovered that short- and long-term growth were significantly influenced by savings, and strategies to boost domestic savings were suggested as a means of financing capital accumulation and fostering economic expansion. They did point out that Nigeria, where there is a weak savings culture, would not benefit from Algeria's robust saves culture.

Between 1986 and 2019, Chuba and Ebhotemhen (2019) [13] looked at the link between Nigeria's GDP growth and gross domestic savings. Their results supported the Keynesian and Harrod-Domar models, showing a statistically important Report Phrase and unfavourable association.

Oyedokun and Ajose (2018) looked at the relationship between domestic investment and Nigeria's economic growth from 1980 to 2016. They concluded that domestic investment promotes economic growth after observing a robust and consistent relationship between GDP and domestic investment.

In Kenya, Odhiambo (2018) [29] found a Granger causal relationship between savings and economic expansion, emphasising the critical role that savings play in the development of the banking sector.

Ghana's domestic savings and economic development from 1970 to 2013 were examined by Anthony *et al.* (2017) [7]. Their investigation showed that a number of economic factors had good long-term benefits, but that domestic savings had negative but negligible short-term effects. This suggests that more research is needed in light of current advancements.

Verma (2017)<sup>[44]</sup> used ARDL Bound Testing to investigate the link between savings, investment, and economic advancement in India between 1951 and 2014. According to the report, savings fuel growth as opposed to being the other direction elsewhere with investments serving as the primary driver of economic development at the moment.

Siaw *et al.* (2017)<sup>[39]</sup> examined the relationship between domestic savings and economic development between 1970 and 2013. Their results demonstrated that domestic savings had a substantial and positive long-term impact on economic growth despite having a short-term unfavourable and inconsequential impact.

Okwori *et al.* (2016)<sup>[33]</sup> found the worldwide financial slump and its effects on Nigeria's total consumption, as well as the multiplier effect of the expenditure function, Nigeria's economy recovered following the global financial crisis. They demonstrated that trade balance has a favourable effect on the growth of the economy, government expenditure, investment, and consumption. A multiplier of 0.68 meant that for every N1 invested, income increased by N3.30. They examined data from 2010 to 2014 using the OLS approach, and their recommendations for demand management policies—which would address investment deficiencies and market inefficiencies—would include using fiscal and monetary tools.

Using the Toda-Yamamoto approach, Eze and Nwigboji (2016)<sup>[19]</sup> looked into the connection between Nigeria's economic growth and domestic savings. They looked at real GDP, financial depth, government spending, and total private savings. Data from the CBN statistics bulletin covering the years 1981 through 2014 served as its foundation. Using ADF, VAR models, and Granger causality tests, they concluded that total private savings positively impacted real GDP and that there was actually a causal correlation between GDP and total private savings.

Udede (2015)<sup>[43]</sup> used a vector autoregressive model to study how interest rates affected savings in the Nigerian economy. He discovered that savings and economic growth were positively correlated, observing that a 1% gain in national income was accompanied by a 0.04% increase in savings. In order to promote savings in the real sector, he suggested that the CBN implement interest rate policies.

Okere and Ngbudu (2015)<sup>[32]</sup> examined how macroeconomic factors affected Nigerian savings mobilisation between 2003 and 2012. They used OLS to run linear regression using secondary data from the CBN on variables including inflation rate, per capita income, and domestic savings. According to their findings, there is a significant positive correlation between domestic savings and key macroeconomic factors. They recommended that the government boost foreign direct investment, create logical fiscal and monetary policies, and support banks opening branches in rural regions.

Osundina and Osundina (2015)<sup>[34]</sup> used multiple regression analysis using data from 2010 to 2012 to examine the effects of low savings and capital accumulation on economic development in Nigeria. They discovered a positive correlation, with a 22% change in savings being explained by a 12% change in real GDP. They advised paying close attention to sociocultural and economic aspects in order to create an atmosphere that is favourable to investing and saving.

Using OLS, Verma and Wilson (2015)<sup>[45]</sup> investigated the link between foreign inflows, investment, savings, and

economic development in India between 1950 and 2011. According to their findings, there was little short-term feedback from GDP to savings and investment, even if these factors did have effect on GDP over the long term. The Solow and endogenous growth theories, which place a strong emphasis on raising household savings and investment for economic development, were not supported by their findings.

Mohamed (2014)<sup>[26]</sup> examined the relationship between savings, investment, and economic development in Ethiopia from 1970 to 2011 using a multivariate method. Co-integration between GDP, savings, and investment was shown that while human capital and savings were statistically insignificant, Investment and the work force both significantly boosted economic growth over the long run.

Turan and Olesia (2014)<sup>[42]</sup> used the Johansen co-integration test and an error-correcting model to examine the effect of savings on Albania's economic performance between 2000 and 2012. Their results showed an unchanging long-run equilibrium because growth in the economy and savings are intertwined.

Using a cointegration technique, Private savings and inflation, per capita income, and financial emancipation are positively correlated, according to Davis' (2013)<sup>[14]</sup> investigation into the variables impacting private savings in Ghana. The Richardian equivalency theory was also validated by the study, which showed a high propensity to save despite a restricted capacity to do so.

Ayalew (2013)<sup>[8]</sup> analysed yearly data from 1970 to 2011 to examine the factors influencing domestic savings in Ethiopia. The ARDL bounds testing and error correction mechanism highlighted the importance of sustainably increasing income, minimizing the effects of budget deficits and inflation, and fostering competition in the financial sector.

Ahmad and Mahmood (2013)<sup>[5]</sup> used the ARDL bound test technique for co-integration to examine national savings drivers throughout economic development from 1970 to 2010. In the short term as well as the long term, they discovered a negative link between per capita income and the national savings rate. Additionally, exchange and inflation rates significantly impacted national savings, with lagged exchange rates also playing a crucial role due to increased international capital flows amid floating exchange rates and reduced capital controls.

### Gap in Literature

The influence of domestic savings on economic growth in Nigeria has been extensively studied by earlier scholars using a variety of approaches; Nwonye *et al.* (2022)<sup>[27]</sup>, Matthew and Manu (2021)<sup>[25]</sup>, Ahmed, Abdelhak, and Amal (2020)<sup>[4]</sup>, and Odhiambo (2018)<sup>[29]</sup> have all made noteworthy contributions to this field. However, this study presents a novel approach, as the existing literature does not break down domestic savings into household, firm, and public sector savings. Consequently, these earlier works may be outdated and do not adequately address the current dynamics of domestic savings' impact on economic growth in Nigeria for the period from 1981 to 2021.

### 3. Methodology Research Design

The ex post facto research methodology was employed in

this study to look at current data in order to forecast or explain future events.

**Model Specification**

The underlying theory of this work is the economic growth model developed by Harrod and Domar which emphasises the vital functions that investment and savings play in fostering growth. This is an illustration of the model:

$$\begin{aligned} \text{Growth of GDP} &= \text{Savings} + \text{Investment} & 1 \\ \text{RGDP} &= f(\text{HHS}, \text{PSS}, \text{FSV}, \text{RMT}, \text{RIR}) & 2 \end{aligned}$$

Equation 2 is then reformulated mathematically:

In econometric terms, this is expressed in logarithmic form as:

$$\text{LRGDP} = b_0 + b_1\text{HHS} + b_2\text{LPSS} + b_3\text{LFSV} + b_4\text{LRMT} + b_5\text{RIR} + \epsilon_t$$

- LRGDP = Log of Real Gross Domestic Product
- LHHS = Log of Household Savings
- LPSS = Log of Private Sector Savings
- LFSV = Log of Firm Savings
- LRMT = Log of Remittances
- RIR = Real Interest Rate
- $\epsilon_t$  = Error term
- $b_{is}$  = Parameter estimates

**A Priori Expectation**

It is anticipated that the signs of the parameter estimates for household savings, firm savings, public sector savings, remittances, and per capita income will positively correlate with economic growth, while the real interest rate is expected to negatively correlate with growth. The inflation rate may exhibit either sign depending on monetary policy decisions. Thus, a priori, the expectations are: HHS > 0, PSS > 0, FSV > 0, RMT > 0, and RIR < 0.

**Description of Variables**

Economic growth is measured by real GDP. Inflation is taken into account while calculating economic growth. It is generated by using a gross domestic product deflator to

deflate the nominal GDP. The measurement of economic activity during a given time frame, often a year, is called the gross domestic product. Firms' savings is proxied by deposit in corporate accounts in deposit money banks expressed in logarithm form while public sector savings is defined as state and local governments deposits in deposit money banks expressed in logarithm form.

Remittance transfers are any current in-kind or monetary payments produced or obtained by resident households from nonresident homes. As a result, all current exchanges between citizens and non-residents are regarded as private transfers.

The entire amount of money that the government spends in a particular year is known as total government spending. It consists of both capital and ongoing expenses.

The cost of lending facilities to customers of commercial banks is expressed as an interest rate. High GDP and investment are associated with a decrease in interest rates, whereas decreased GDP and investment are associated with higher borrowing costs.

**Sources of Data**

For this 1981–2021 analysis, secondary data were provided from the World Bank and the Central Bank of Nigeria Statistical Bulletin.

**Estimation Procedure**

The Phillips-Perron Unit Root Test, the Augmented Dickey-Fuller (ADF) Unit Root Test, and other estimate techniques were employed in this work. ARDL Bounds Testing, and Post-Diagnostic Tests.

**Hypothesis Testing Procedures**

For hypothesis testing, the study employs the following criteria: P-value, F-Test, and A Rule of Decision. In the event that the P-value exceeds zero, the null hypothesis indicating insignificance is dismissed. indicating that the calculated parameter is substantial. and both F-statistics fall short of the significance threshold of 5%. If not, it is regarded as irrelevant.

**4. Results and Discussion**

**Table 1:** Descriptive statistics

	RGDP	HHS	FSV	PSV	RMT	TGE	RIR
Mean	10.39751	3.600003	13.78829	11.38953	-0.447687	6.252937	0.453578
Median	10.19087	3.589381	13.47893	11.76295	0.510665	6.925595	4.310292
Maximum	11.18987	4.467011	17.70243	16.13737	2.117688	9.364573	18.18000
Minimum	9.683359	2.762908	9.692976	5.829240	-5.321916	2.265921	-65.85715
Std. Dev.	0.533477	0.439344	2.536742	3.145453	2.524963	2.307468	14.25917
Skewness	0.267005	-0.009577	-0.012657	-0.255672	-0.836936	-0.459231	-2.717477
Kurtosis	1.496631	2.258603	1.689820	1.920092	2.087261	1.819585	12.91104
Jarque-Bera	4.348198	0.939646	2.933572	2.438942	6.209693	3.821461	218.2694
Probability	0.113711	0.625113	0.230666	0.295386	0.044831	0.147972	0.000000
Sum	426.2979	147.6001	565.3198	466.9706	-18.35518	256.3704	18.59669
Sum Sq.Dev.	11.38389	7.720927	257.4025	395.7549	255.0175	212.9764	8132.960

Source: Researchers Estimate from E-view 9.0, 2024

Table 1 displays the variables under investigation along with key metrics including standard deviation, mean, median, and Jarque-Bera statistics. The key metrics to pay attention to in this case are the distribution of its mean and Jarque-Bera statistics, which evaluate the data's normality and identify

any outliers. The real interest rate (RIR) is at 0.45%, household savings (HHS) is at 3.60%, and other factors like RGDP is at 10.3 per cent, bank reserve deposits (BRD) is at 11.3 percent, and net domestic credit is at 13.7 percent. The mean value of remittances (RMT) is the lowest at -0.44%.

Furthermore, the results of the normality test showed that every variable—aside from remittances and the real interest rate—was regularly distributed. The economic growth (RGDP), household and corporate savings, public sector, and total government expenditure figures were all found to be statistically insignificant by the Jarque-Bera test. However, the real interest rate and the remittance Jarque-Bera data were noteworthy. Remittance and real interest rate

data were therefore reassessed and outlier-corrected. The ADF unit root test findings are shown in Table 2, which demonstrate that economic growth, as determined by RGDP, HHS, FSV, PSV, and RMT, is stationary at the first difference. At the level, RIR is stationary. Additionally, the test revealed that the factors in the research had a varied order of integration.

**Table 2:** ADF Unit Root Test of Stationarity of Time Series Data

ADF tests at Level				ADF tests at 1 <sup>st</sup> Difference			
Series	ADF Statistic	5% Critical Level	p-Values	ADF Statistic	5% Critical Level	p-Values	Order of Integration
LRGDP	-1.054009	-2.943427	0.7234	-3.994793	-2.943427	0.0038	I(1)
LHHS	-0.679151	-2.951125	0.8388	-5.716179	-2.951125	0.0000	I(1)
LFSV	-0.573609	-2.938987	0.8650	-6.940325	-2.941145	0.0000	I(1)
LPSV	-0.507784	-2.938987	0.8789	-6.513135	-2.941145	0.0000	I(1)
LRMT	-1.526535	-2.938987	0.5098	-6.894671	-2.941145	0.0000	I(1)
RIR	-7.359547	-2.938987	0.0000	-	-	-	I(0)

Source: Researchers Estimate from E-view 9.0, 2024

\*NB: Whereas I(1) denotes stationary at first difference, I(0) denotes stationary at level.

**Table 3:** Phillips-Perron Unit Root Test of Stationarity of Time Series Data

ADF tests at Level				ADF tests at 1 <sup>st</sup> Difference			
Series	ADF Statistic	5% Critical Level	p-Values	ADF Statistic	5% Critical Level	p-Values	Order of Integration
LRGDP	0.547424	-2.936942	0.9863	-3.916717	-2.938987	0.0045	I(1)
LHHS	-2.191480	-2.936942	0.2124	-124.6032	-2.938987	0.0001	I(1)
LFSV	-0.492506	-2.936942	0.8822	-58.75681	-2.938987	0.0001	I(1)
LPSV	-0.497417	-2.936942	0.8812	-9.048017	-2.938987	0.0000	I(1)
LRMT	-1.606263	-2.936942	0.4702	-6.995918	-2.938987	0.0000	I(1)
RIR	-7.464138	-2.936942	0.0000	-	-	-	I(0)

Source: Researchers Estimate from Eview 9.0, 2024

The outcomes of the Phillips-Perron tests for the stationarity of the time series data demonstrated the different order of integration among the factors included in the present analysis which are shown in Table 3. To be more precise, the RIR and economic growth as indicated by the RGDP, HHS, FSV, PSV, and RMT were both stagnant at the 1<sup>st</sup> difference.

The variables under study showed a varied order of integration, according to the findings of the Phillips-Perron and ADF tests. In addition, none of the factors were demonstrated to be stationary at the second difference by either test.

**Table 4:** ARDL Bounds test result

Test Statistic	Value	K
F-statistic	5.649975	6
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.50%	2.75	3.99
1%	3.15	4.43

Source: Researchers Estimate from E-view 9.0, 2024

Nigeria's economic development and domestic savings have a strong long-term relationship, according to the ARDL Bound test findings, which are shown in Table 4. This implies that there is cointegration between these two variables. At the five per cent relevant criterion, the F-statistic value of 5.649975 is especially higher than the top limit value of 3.61. At this level of importance, the null hypothesis—that there is no consistent relationship between domestic savings and economic growth in Nigeria—is

therefore disproved. Therefore, there is a long-term longitudinal association between domestic savings and Nigeria's economic progress over the time frame being studied.

**Table 5:** ARDL Short-Run Impact and the Coefficient of ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LRGDP(-1))	-0.158071	0.142268	-1.111077	0.2867
D(LHHS)	-0.093277	0.060323	-1.546297	0.1460
D(LHHS(-1))	-0.089999	0.040338	-2.231134	0.0439
D(LHHS(-2))	-0.074494	0.066768	-1.115706	0.2847
D(LFSV)	-0.009934	0.020666	-0.480696	0.6387
D(LFSV(-1))	-0.036629	0.026889	-1.362232	0.1963
D(LPSV)	-0.015598	0.008145	-1.915136	0.0777
D(LPSV(-1))	0.035617	0.008913	3.995962	0.0015
D(LRMT)	-0.025585	0.009974	-2.565139	0.0235
D(LRMT(-1))	0.026837	0.006397	4.195558	0.0010
D(LRMT(-2))	0.012036	0.007610	1.581675	0.1377
D(LTGE)	0.088979	0.029021	3.066031	0.0090
D(LTGE(-1))	-0.003056	0.028208	-0.108355	0.9154
D(LTGE(-2))	-0.054082	0.020207	-2.676391	0.0190
D(RIR)	-0.000551	0.000814	-0.676727	0.5104
D(RIR(-1))	0.001338	0.000464	2.885780	0.0128
CointEq(-1)	-0.510727	0.066007	-3.192471	0.0071

Source: Researchers Estimate from E-view 9.0, 2024

Table 5 displays the short-run coefficients and Error Correction Mechanism (ECM) findings indicate that lagged household savings significantly negatively affected economic growth. Specifically, In the near term, Nigeria's economic growth decreased by 0.08% for every 1% rise in delayed household savings. Despite the prevailing expectation that family savings will favourably impact economic development, this result suggests they are

insufficient in this context. A potential reason for this negative impact could be linked to a poor savings culture among the population.

In contrast, lags in public sector savings were large, but business savings had little short-term impact on economic growth. The short-run remittance study in Table 5 additionally demonstrates that lag remittances had an empirically significant beneficial effect on economic growth; real gross domestic product, an indicator of economic growth, increased by 0.02% for each percent that remittances increased.

Additionally, aggregate government spending and economic growth showed a favourable short-term association; an increase of a single percent in spending was linked to a 0.08 percent boost in GDP. Interest rates have a beneficial and statistically meaningful short-term effect to economic growth; a one percentage point rise in interest rates translated into a 0.001 percent gain in growth. This unexpected result may be explained by interest rates increasing in tandem with other prices as Nigeria's economy grows.

Ultimately, but just as importantly, the ECM findings showed a statistically significant, negative, fractional coefficient that suggests a long-term cointegration between domestic savings and economic development in Nigeria. According to the ECM results, each year 51% of the difference between the short-run and long-run values is adjusted.

**Table 6: ARDL Long Run Impact**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LHHS	0.216211	0.702754	0.307663	0.0432
LFSV	0.227169	0.078770	2.883958	0.0128
LPSV	0.309062	0.066013	4.681812	0.0004
LRMT	-0.276838	0.112208	-2.467188	0.1283
LTGE	0.783829	0.264822	2.959831	0.0111
RIR	-0.012925	0.005350	-2.415986	0.0311
C	5.184367	4.401195	1.177945	0.2599

Source: Researchers Estimate from E-view 9.0, 2024

The aforementioned determinants were of statistical significance and had an effect on long-term economic development, as seen by the domestic savings indicators' long-run coefficients in Table 6: Interest rates, remittances, government savings, household savings, firm savings, and total government expenditure. The following is a summary of these factors: Long-term influence on Nigeria's economy's development during the study's timeframe.

Household savings were positively correlated with increase in the economy and statistically important, with a rise of one percent translating into an approximate 0.22% rise in GDP.

**Firm Savings:** Similarly favourably connected and statistically connected with economic development, a boost of one percent in firm savings resulted in a roughly 0.23 percent rise in GDP.

**Public Sector Savings:** Favourably influenced economic growth and was statistically meaningful; a one percentage point rise in public sector savings was responsible for around a 0.31 percent boost in economic growth.

**Remittances:** This adversely affected economic

development and was statistically negligible, with a one percent rise in remittances translating into a roughly 0.28 percent drop in growth. Although remittances are generally expected to boost economic growth, their lack of impact during this period may be attributed to insufficient investment opportunities for migrants and challenges in transferring funds back home.

A one percent rise in overall public spending translated into a 0.78 percent rise in growth in the economy. This relationship was statistically significant.

**Interest Rates:** Statistically important but has a detrimental impact on economic expansion, with the economic growth declining by 0.012% with an one percent rise.

**Post-diagnostic Tests**

**Table 7: Breusch-Godfrey Serial Correlation LM Test**

F-statistic	1.410393	Prob. F(2,11)	0.1704
Obs*R-squared	1.416150	Prob. Chi-Square(2)	0.1208

Source: Researchers Estimate from Eview 9.0,2024

The post-diagnostic results for serial correlation, displayed in Table 7, indicated that there was actually no evidence of serial correlation because the likelihood estimates of the F-statistic were more than the 5% criterion.

**Heteroskedasticity Test**

**Table 8: Heteroskedasticity –Godfrey Test**

F-statistic	1.554142	Prob. F(23,13)	0.1414
Obs*R-squared	30.29573	Prob. Chi-Square(23)	0.1411
Scaled explained SS	3.854983	Prob. Chi-Square(23)	1.0000

Source: Researchers Estimate from E-view 9.0, 2024

Given that the overall measured R-squared and the F-statistic's probabilities were over the five percent confidence threshold, the results of the Breusch-Pagan-Godfrey test for heteroskedasticity, this is shown in Table 8, demonstrated that heteroskedasticity was not proven.

**Table 9: Ramsey RESET Test of Specification**

	Value	Df	Probability
t-statistic	1.311753	12	0.2141
F-statistic	1.720697	(1, 12)	0.2141
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.000827	1	0.000827
Restricted SSR	0.006592	13	0.000507
Unrestricted SSR	0.005765	12	0.000480

Source: Researcher's Estimate from E-view 9.0, 2024

Table 9 presents the findings of the Ramsey RESET test of model specification, which show that the model utilised in the current research was adequate and that there was no model misspecification in this examination. It is completely stated, with no factors left out.

**Histogram Normality Post Diagnostic Test**



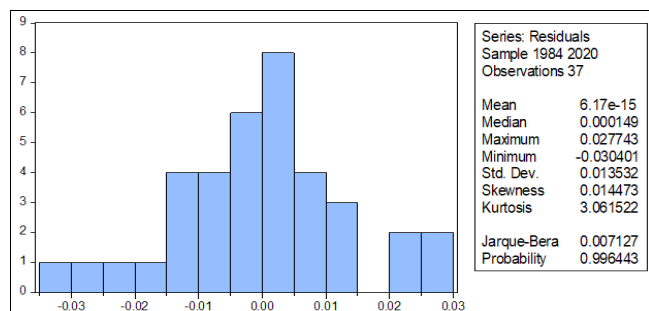


Fig 2: Histogram Normality Test

Figure 2's histogram normality test indicates that the model's residuals have normal distributions since the Jarque-Bera statistic's probability is higher than the five percent confidence level.

### Test of Research Hypotheses

**H<sub>01</sub>:** Household savings does not have significant impact on real gross domestic product in Nigeria.

Table 6 above displays the long-term outcomes for household savings, with a coefficient of 0.216211 and an expected value of 0.0432. Given that the probability value is below the 5 percent relevance level, the study shows that household savings have a significant and positive effect on Nigeria's real gross domestic product during the investigation timeframe.

The null hypothesis, which held that family savings in Nigeria had no appreciable effect on the country's actual gross domestic product, was therefore disproved. Nonetheless, the alternative theory—which claimed that Nigeria's actual gross domestic product was greatly influenced by family savings—was implemented. This suggests that a 0.22 percent long-term increase in real gross domestic product is linked to a one percentage point increase in family savings.

**H<sub>02</sub>:** Firms' savings have no significant impact on real gross domestic product in Nigeria.

The long-run firm savings results were shown to have a probability value of 0.0128 and a coefficient of 0.227169 in Table 6. Given that this probability value is below the threshold of five percent, the research suggests that Nigeria's real gross domestic product has benefited greatly from corporate savings over the study period.

Consequently was decided not to accept the null hypothesis, which claimed that family savings in Nigeria had no appreciable effect on the country's actual gross domestic product. But the other argument, which claimed that family savings significantly impacted Nigeria's actual gross domestic product, was accepted. This suggests that a 0.22 percent long-term gain in real gross domestic product is linked to a 1 percent boost in family savings.

### Test of Hypothesis Three

**H<sub>0</sub>:** Public sector savings have no significant impact on real gross domestic product in Nigeria.

Table 6 displays the public sector savings data, which indicate a probability value of 0.0004 and a coefficient of 0.309062. Given that this probability value is below the threshold of five percent, the study suggests that public sector savings have had a beneficial effect on Nigeria's real

gross domestic product throughout the course of the period under review.

The alternative hypothesis, which maintained that public sector savings have an important effect on Nigeria's real GDP, was thus accepted, while the null hypothesis, which maintained that public sector savings have no substantial effect on Nigeria's real GDP, was rejected. This suggests that a one percent rise in public sector savings corresponds to a real gross domestic product gain of about 0.31%.

## 5. Findings, Conclusion and Recommendations

### Findings

This study looked at how domestic savings affected Nigeria's economic growth from 1981 and 2021. The empirical results were compiled and presented following the analysis of the time series data and the estimation of the coefficients of the relevant variables. Among the estimate methods employed were unit root tests, the ARDL bound test, and the short- and long-run ARDL tests.

The results of the ADF and Phillips-Perron (PP) tests indicated that the variables' order of integration was mixed. Specifically, real GDP, total government expenditure, savings in the public and private sectors, remittances, and household savings all exhibited stagnant growth at the first difference, while real interest rates were constant at the level. Upon the second variation, every variable exhibited instability.

A sustained correlation between domestic savings and Nigeria's economic expansion was confirmed by the bound test results. Additionally, the error correction technique's coefficient was statistically important, fractional, and unfavourably indicated.

The following are the main conclusions on the long-run coefficients of domestic savings on real gross domestic product in Nigeria:

Household savings are statistically important and have a favourable impact on economic growth. A one percentage point spike in household savings causes the real gross domestic product to rise by about 0.22 percent.

Firm Savings: A 1% increase in company savings yields a real gross domestic product rise of around 0.23 percent. Firm savings are also statistically significant and have a favourable influence on economic growth.

Long-term economic growth is benefited by public sector savings, which have an effect of about 0.31 percent on real gross domestic product.

### 6. Conclusion

The present research examined how domestic savings affected Nigeria's economic growth, emphasising how important they are to the nation's economic development. The research paper examined the long-term effects of domestic savings on economic growth from 1981 to 2021 using the ARDL model in order to evaluate this link.

During the period under investigation, real gross domestic product and domestic savings exhibited a long-term equilibrium relationship, according to the statistical results of the ARDL Bound test study. Furthermore, the fractional, adversely signed, and statistically significant Error Correction Mechanism (ECM) coefficient indicated a propensity to revert to long-run equilibrium. Below is a summary of how domestic savings affect economic development over the long term:

1. The actual gross domestic product grows by around

0.22 percent for every one percentage point rise in household savings.

2. An estimated 0.23 percent boost in economic growth follows a one percentage point rise in company savings.
3. In Nigeria, public sector deposits account for around 0.31 percent of the country's actual GDP.

## 7. Recommendations

1. Since an increase in household savings positively impacts economic growth in Nigeria, the government should promote a culture of saving among households. Funds saved by households can be reinvested in the economy, stimulating further economic growth.
2. Promoting Firm Savings: Given that an increase in firm savings contributes to economic growth, the government should develop policies that incentivize firms to save. These savings can then be reinvested into the economy.
3. Enhancing Public Sector Savings: Given that economic development is positively impacted by public sector savings in a statistically meaningful way, the government should prioritize saving to prepare for future uncertainties. This approach can help mitigate economic shocks and promote stability in economic growth.

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