An Examination of the Nexus Between Private Savings and Economic Development

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Abstract

The study aims to investigate the private savings and economic development nexus in Nigeria. The methodology is based on econometric analysis to estimate parameter values and analyze economic relationships with co-integration and Granger causality tests employed to examine the variables employed. The variables employed in the study have long term positive relationship following the results from the Johansen co-integration, private savings and economic development have bilateral causality which is significant using the Granger causality tests. The results suggest that economic development Granger-causes private savings and private savings Granger-cause economic development. Following the study results, in the long run economic development can stimulate private savings and private savings can accelerate economic development. Government and policymakers in Nigeria should implement policies to attract more private savings, thereby accelerating economic development and growth, GDP per capita increase, and the living standard of citizens in the country improved.

Key words GDP, Private Savings, economic development, Nigeria, long run.

JEL Classification E21, O11, O23

1. Introduction

At the heart of private savings lies the quest for financial security and the ability to meet future needs. By allocating a portion of their income to savings, individuals accumulate funds that can be used to make profitable investments. These savings provide crucial capital for businesses, allowing them to expand, adopt new technologies, and innovate. A robust private savings sector ensures a continuous flow of funds across various industries, leading to increased production, job creation, and enhanced economic performance. Private savings act as a catalyst for investment, a

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fundamental driver of economic growth, encompassing both physical capital formation (such as machinery and infrastructure) and human capital development (like education and training). When individuals save, their accumulated funds become available to financial institutions, which can then lend to businesses and entrepreneurs seeking to expand or initiate new ventures. This capital influx fosters innovation and stimulates economic activity, ultimately driving overall growth and development.

Private savings can positively influence national savings and the current account balance. A nation with higher private savings may experience reduced consumption and increased domestic savings, leading to greater national savings. Consequently, the country becomes less reliant on foreign borrowing to finance domestic investment. This reduced dependence on external funds helps improve the current account balance by decreasing the need to borrow from other countries or sell assets to finance imports.

Aghevli et al. (1990) identified a strong link between savings rates, investment in human capital, with development and growth of the economy. Savings, investing, and growth have always been tightly related to one another. It's common knowledge that insufficient national savings, investment, and savings optimization have contributed to the poor economic performance of a number of developing nations. Investment and economic activity have generally decreased significantly as a result of this lackluster growth. Poor savings rates have further exacerbated fragile balance of payments positions. Similarly, attempts to address external imbalances by lowering aggregate demand have resulted in lower investment spending, exacerbating the problems of slow growth and falling rates of savings and investment (Khan and Villanueva, 1991). In the literature on economic development, there is still disagreement over the connection between savings, investment, and growth, with no consensus reached thus far. According to the classical school, interest rates eventually bring savings and investments into balance. Savings are seen as the finite amount of money required for investments. According to this viewpoint, a lack of savings may have a negative impact on economic expansion. On the other hand, the classical perspective is challenged by the Keynesian school, which maintains that investment creates the savings required for its own financing.

In Nigeria, positive economic growth observed over the years has not consistently reflected domestic investment and savings during those periods (Olomola, 2016). Additional queries

concerning the connections between these three variables are brought up by this disparity. Concerns regarding the vital role that savings mobilization and investment play in maintaining and boosting economic growth in developing nations have endured for decades. Several studies have shown that investments, savings, and economic growth are closely related (Barro, 1997; Agu, 2015; Khan & Reinhart, 1990). Investment is influenced by national savings, and significant investment has a favourable effect on economic development and helps create jobs (Agu et al., 2015; Firebaugh, 1992). Furthermore, demand and valuable assets are combined with savings and investment to influence economic development. Savings and investment also accelerate and sustain development and productivity through capital creation.

Substantial research in financial economics indicates that the development of the financial sector significantly contributes to economic growth. The sector fosters economic growth by boosting the accumulation of capital and enhancing technology advancement through increased rate of savings, integrating and aggregating savings, generating data regarding investments, aiding foreign capital inflows, and optimizing capital allocation. Consequently, nations with advanced financial systems are expected to experience quicker growth over extended periods. However, stimulating savings is not straightforward. The business environment must be competitive to ensure profitability for enterprises. Additionally, savers need assurance that the real value of their savings will be preserved. Safe and profitable investment opportunities are essential to attract savings and guarantee returns, thereby maintaining the real value for savers. High inflation and low savings rates encourage excessive consumption and discourage savings. Many emerging economies struggle to achieve high levels of savings due to high unemployment, declining disposable incomes, and eroded purchasing power, resulting in decreased personal savings.

In comparison to most other countries, Nigeria has low gross national savings. In response to this low gross savings rate, the government has made numerous efforts to encourage saving. To safeguard investors and savers alike, financial market regulatory bodies have tightened their supervision and oversight responsibilities. One such effort is the Debt Management Office (DMO) introducing the Federal Government of Nigeria Savings Bonds on the federal government's behalf. Additionally, the creation of mutual funds and various products for wealth management has been pursued to encourage savings. Over the years, various financial sector reforms have been implemented in reation to declining savings rates, financial crises, systemic crises,

internationalization, computerization, technological advancements, and trade liberalization (Akinwale, 2018). The primary goal of these reforms is to establish and maintain prudent financial practices and effective corporate governance to accomplish development and economic growth that is sustainable (Onodje, 2009).

Despite numerous reforms throughout the years, Nigeria's economic growth and saving rate are still quite down. Financial inclusion is still not perceived as making significant contributions to the country's economic expansion, leading to the question To what extent do the financial development and savings rate contribute to Nigeria's economic growth? It is noteworthy that the banking industry has emerged as the financial sector's primary priority because, in many emerging countries, the sector is essentially the sole financial tool available for drawing in significant amounts of private resources to support economic growth (Afolabi, 1998).

Economists have long been concerned with the poor growth trend in many African nations compared to other global regions. This concern stems from the observation that the development rate in numerous African nations often is out of proportion to the amount invested. Recently, economic growth has become a prominent socio-political issue in global debates, not due to a sudden recognition of declining savings culture, optimization, and interest rates in Nigeria, but due to shifting social attitudes towards savings, fund mobilization, and investment.

In Nigeria, there is a persistent need to optimize savings for investment across both rural and urban areas by mobilizing money from surplus units to investors to achieve economic development. Recently, Nigeria's deposit money banks have faced failures, causing ripple effects across other sectors of her economy and underscoring the strategic role of the banking sector. The nature of financial services and banking practices in Nigeria often leads to depositor panic at the first sign of distress, undermining the savings culture and customer confidence. As John (1993) noted, "the ability of commercial banks to promote growth and development depends on the extent to which financial transactions are carried out with trust, confidence, and minimal risk." Safe and sound banking practices are essential; when banks engage in unsafe practices, public confidence and trust are jeopardized.

Usman (1999) highlighted that Nigeria's commercial banks' efficient operation is negatively affected by certain regulatory instruments of policy, such as directed credit, unremunerated reserve requirements, rigid interest rate structures, and stabilizing liquidity control measures. The financial

systems in developing countries like Nigeria are often fragmented, inefficient, and overly regulated, leading to limited financial deepening (Mohamed, 2006). In such environments, deposit mobilization and lending behaviors may not align with patterns that support economic growth. Usman (1999) also noted that restrictions on the interest rates that commercial banks can offer on deposits and charge on loans hamper their ability to attract depositors and lend effectively. The connection between aggregate saving and interest rates optimization is complex, involving conceptual and econometric challenges, such as distinguishing between substitution effects of interest rate fluctuations and income, and understanding the significance of setting scopes and expectations in saving decisions (Wright, 1967; Weber, 1970). Interest rates significantly influence the channels through which savings optimization flows, more so in industrialized and emerging nations compared to changing people's inclinations to save (Suits, 1970). Periods of adverse real interest rates can interfere with established savings patterns across income levels and deposit money bank optimization.

Studies on the connection between savings optimization, interest rates, investments, and economic growth in Nigeria are limited and methodologically challenging. Some studies (Oyejide, 1972; Ajayi, 1973, 1974; Teriba, 1974; Lambo, 1986; Ajayi and Ojo, 1986; Ajewole, 1989) conclude that interest rates are insignificant in determining savings optimization, while others (Owosekun, 1978) find them significant. Nigeria deregulated interest rates and loosened directed credit restrictions in spite of these findings because it believed that high real interest rates promoted saving and economic expansion. The relevance of this theory in Nigeria, and the reasons for the high failure rates of Nigerian banks in savings optimization, investment, and economic growth, require further investigation.

There is a claim that investing is influenced by saving, which subsequently impacts output growth. The shift from initial growth to consistent output expansion requires the building up of capital and the financing of it. Output growth initiates a self-reinforcing cycle wherein anticipated growth stimulates investment, thereby supporting further growth and financial development. Meaningful production growth cannot be attained without a large rise in public and private investment levels. Should private investment stay at its current low levels, it will impede possible expansion and diminish the long-term levels of per capita income and consumption, consequently resulting in

lower investment and savings. The main aim of the study is to examine the connection between private savings and economic development in Nigeria.

2. Theoretical Framework and Review of Related Literature
2.1 Theoretical Framework

The life-cycle theory, proposed by Modigliani (1970), has long been a cornerstone for understanding savings behavior. However, a closer examination reveals that this theory primarily mirrors the realities of developed economies, failing to account for the unique conditions of emerging nations like Nigeria. Several factors necessitate a different approach to modeling savings behavior in these regions.

At the microeconomic level, emerging nations typically have larger, poorer households, have distinct demographic structures, are more likely to engage in agriculture, and face uncertain income prospects. Consequently, income allocation over time differs, leading to various implications for policy and behavior compared to developed economies.

At the macroeconomic level, while both developed and developing countries prioritize private savings and growth, developing countries often lack sophisticated financial systems. These systems facilitate the purposeful manipulation of disposable personal wealth to maintain output and job levels. Moreover, literature over the past fifty years often indicates that low savings rates hinder development and growth in developing countries, sometimes due to ineffective or misguided government policies. Measuring savings in these countries is also more challenging compared to advanced nations, both in terms of macroeconomic aggregate and household level.

Following Deaton (1989), this study modifies the life-cycle theory to create a design for households that do not have the capacity to borrow and thus build up assets as a buffer against low-income periods. These households frequently save and dissave, do not accumulate significant long-term assets, and generally hold little asset stocks. However, their intake remains notably smoother than their income. In line with McKinnon and Shaw (1973), it is argued that in developing countries, an increase in the real interest rate is likely to positively impact savings because in these economies where strong markets for bonds and stocks are lacking, quasi-monetary assets and cash balances constitute a larger volume of household savings in comparison to developed countries. In such environments, where bank loans and self-financing are primary sources of investment funds,

financial savings accumulation is mostly motivated by investment decisions rather than the wish to survive off interest earnings. Considering the distinctive features of saving behavior and the fact that most savings are derived from little savers, the substitution effect of an interest rate change is usually larger than the income effect.

The conventional theory of interest, also known as the demand and supply theory of interest, asserts that the interest rate is influenced by the demand and supply of funds from businesses and various households. However, this theory is indeterminate. The theory of Keynesian liquidity preference (a stock theory), determines the rate of interest based on the demand and supply of money, viewing the interest rate as a purely financial phenomena that is separate from the actual theory of the classical model. The modern model of Hicks-Hansen ISLM suggests that no theory of interest rates is sufficient, a comprehensive theory must consider both real and monetary factors.

The McKinnon-Shaw Hypothesis (1973) argues that discriminatory distortions of financial prices, such as interest rates, and financial repression, reduce the actual rate of growth and development. The model of McKinnon-Shaw suggests that investment reacts adversely to interest rates and effective real loan rates but positively to the growth/development rate. Financial liberalization is expected to positively affect economic development in both the long and short run. Additionally, the study examines the theory of loanable funds to explain the relationship between private savings mobilization the real interest rate. The loanable funds concept, at the heart of the theory of interest rate, explains how the demand and supply of credit determine the interest rate of the financial market. Loanable funds include the increases in the money supply facilitated by depository institutions, governments, and monetary authorities and current savings of private individuals and firms.

The theory of life-cycle suggests that the overall impact of real interest rates on private savings is vague, driven by two main effects. The substitution effect assumes that high interest rates make present consumption relatively more expensive compared to future consumption, encouraging savings. Conversely, the income effect argues that if households are net lenders, higher interest rates increase lifetime income, which could result in increased consumption and reduced savings.

In the standard life-cycle model, savings is affected by inflation primarily through its influence on actual returns (the real interest rate). This model assumes inflation neutrality, meaning there is no delusion of money in saving behavior and it ignores the real balance effect of inflation. However, these assumptions can be challenged. First, inflation creates uncertainty in future income streams,

encouraging higher precautionary savings. This effect is particularly relevant in developing nations where the chances of earning income are more unsure. Second, savings can be influenced by inflation by altering actual wealth dynamics. If individuals want to retain a certain degree of liquid assets or wealth compared to income, savings will tend to rise with inflation. Thus, including the rate of inflation as a further explanatory factor in saving analyses is justified.

2.2 Empirical Review of Related Literature

For instance, Khalil and Haider (2013) investigated savings determinants in Pakistan utilizing the Autoregressive Distributed Lag Model bound testing method for cointegration over the duration 1974 - 2010. They found that per capita income negatively correlates with the savings rate in the short and long run. Exchange rates and inflation rates negatively impacted national savings, with lagged exchange rates showing significant influence due to floating exchange rate regimes and reduced capital controls. Trade openness, which enhances income and societal welfare through market economies, was linked to increased national savings. The money supply had a positive relationship with national savings, while income growth showed a negative correlation, differing from the Keynesian and permanent income hypothesis observed in developed countries.

Olanrewaju et al. (2020) investigated the connection between private savings, economic development and financial development in Nigeria, utilizing a threshold regression model to explore how optimal levels of financial progress influence private savings mobilization and GDP growth. They came to a conclusion that a well-developed monetary system enhances savings effectiveness, thereby fostering higher GDP growth rates. However, excessive financial deepening without adequate regulation poses risks to economic stability.

Ugwoke et al. (2019) carried out a time-series evaluation spanning 1980 - 2016 to assess the long-term impact of private savings on Nigeria's GDP growth, highlighting the significant function of private savings in economic development.

Abasili et al. (2017) investigated the connection between private savings and GDP development across Sub-Saharan Africa, including Nigeria, using econometric techniques. They discovered a positive correlation between higher savings levels and increased GDP growth rates, emphasizing the function of private savings in fueling investment and capital accumulation essential for economic progress.

Abou Elseoud (2014) investigated the correlation between GDP growth rate and savings in Bahrain from 1990 to 2012 using econometric analysis. His findings suggest a reciprocal causation among these elements, indicating that GDP growth can stimulate private savings, and conversely, increased savings can contribute to accelerated economic growth over time.

Cole, S., Sampson, T., & Zia, B. (2011) examined the effectiveness of financial education programs in Brazil, it offers insights into individual saving behavior and its implications for overall financial well-being and potentially human development. Studies indicates that financial development has a crucial function in shaping private savings behavior. A well-developed financial system with robust institutions and diverse financial products can facilitate savings mobilization, allocate capital efficiently, and promote long-term investment, all of which are essential for economic development. Higher rates of private savings are often related with greater link to financial products and services, including savings accounts, credit, and insurance. Financial inclusion allows individuals and households to better manage financial risks, smooth consumption patterns, and invest in human capital development. Improved access to financial services is positively correlated with higher HDI scores, as it enhances overall financial well-being and resilience. Improvements in Nigeria's financial sector could lead to higher private savings rates. Increased access to financial services and products can facilitate savings mobilization, investment in education and healthcare, and overall human development.

3. Methodology

The research utilized regression techniques for analysis to investigate how savings optimization, interest rates, financial development, and inflation (independent variables) relate to economic development in Nigeria (dependent variable). After data collection, we estimated the parameters of the model using statistical regression analysis techniques. The analysis includes assessing the coefficient of determination, conducting F-tests and t-tests to determine the variables' significance. Additionally, the study utilized the Philips-Perron unit root test, Error Correction Mechanism (ECM) and Johansen Co-integration test for further data evaluation.

The co-integration test and unit root test will be designated as diagnostic tests. Due to the inclusion of multiple lags of the variables, not all estimated coefficients are expected to be statistically significant. Nonetheless, conducting a stationary test is crucial. Time series data, facing the

challenge of stochastic trend fluctuations, necessitates this diagnostic step to ensure the stability of the data structure.

Model Specification

The research seeks to offer econometrics evidence regarding the connection between private savings optimization and economic advancement in Nigeria. It utilized the Phillips-Perron (PP) and Augmented Dickey-Fuller tests to assess the variables stationarity under examination. The research style employed is based on Tafirei, Rabson, and Linda (2014), who conducted research on Zimbabwe banks interest rate deposit and deposit optimization. Their study explored the relationship between bank deposits, savings optimization, and economic development. According to their model, economic activities (proxied by Gross Domestic Product) are affected by inflation rates, savings optimization, interest rates, and financial development.

In this study, the model will be modified as;

GDP = F (INV, CBC, INTR, INF, NSA) --------------------- eqn 1

$RGDP_t = \beta_0 + \beta_1 CBC_t + \beta_2 CBC_t + \beta_3 INTR_t + \beta_4 INF + \beta_5 NSA + \mu$ ---------------eqn 2

By log linearization the equation becomes

$LogRGDP = \beta_0 + \beta_1 logINV_t + \beta_2 logCBC_t + \beta_3 logINTR_t + \beta_4 logINF + \beta_5 logNSA + \mu$ --------eq3

$LogINV = \beta_0 + \beta_1 logFD_t + \beta_2 logCBC_t + \beta_3 logINTR_t + \beta_4 logINF + \beta_5 logNSA + \mu$ --------eqn 4

The following abbreviations were employed to represent the variables in the models

RGDP = Real Gross Domestic Product (Proxy for Development)

INV = National Investment.

CBC = Commercial Bank Credits.

INTR = Interest Rate.

INF = Inflation Rate.

NSA = National Savings.

FD = Financial Development.

4. Result and Analysis

Descriptive Statistics

The variable statistics are shown below in table 1. It includes the mean, median, maximum, minimum, standard deviation and Jarque-Bera statistics for normality test. It reveals that the mean value for GDP is 3.689112 which ranges from 2.160862 to 5.106404. The mean values for National Savings, Inflation, and Commercial Bank Credits are 2.481417, 1.163072, and 2.154766, respectively, indicating that these variables have a more pronounced impact on GDP compared to other independent variables. The proximity of the mean and median values suggests a reduction in the variability of these variables.

Table 1
Descriptive
Statistics

	LOG_GDP	LOG_CBD	LOG_CBC	LOG_INF	LOG_INT	LOG_INV	LOG_NSA
Mean	3.689112	2.154766	0.690946	1.163072	1.227264	0.202712	2.481417
Median	3.724879	2.286142	0.634647	1.087071	1.244277	0.201397	2.383105
Maximum	5.106404	4.243079	2.352606	1.862370	1.474216	0.946452	4.170913
Minimum	2.160862	-0.167363	-1.067017	0.730782	0.889302	-0.721246	0.763136
Std. Dev.	1.022953	1.345688	1.185951	0.308527	0.131902	0.467660	1.169630
Observations	38	38	38	38	38	38	38

Source Authors Computation 2024

Table 2 Correlation Matrix

	LOG_GDP	LOG_CBD	LOG_CBC	LOG_INF	LOG_INT	LOG_INV	LOG_NSA
LOG_GDP	1.000000	0.981521	0.995658	-0.273913	0.337568	0.886071	0.993220
LOG_CBD	0.981521	1.000000	0.976168	-0.226701	0.362499	0.847553	0.972104
LOG_CBC	0.995658	0.976168	1.000000	-0.276181	0.302673	0.888293	0.998653
LOG_INF	-0.273913	-0.226701	-0.276181	1.000000	0.289691	-0.150808	-0.296124
LOG_INT	0.337568	0.362499	0.302673	0.289691	1.000000	0.343114	0.293380
LOG_INV	0.886071	0.847553	0.888293	-0.150808	0.343114	1.000000	0.883973
LOG_NSA	0.993220	0.972104	0.998653	-0.296124	0.293380	0.883973	1.000000

Source Authors Computation 2024

The correlation matrix results indicate the absence multicollinearity in the design, as the pairwise correlations exceed 0.95.

Table 3 Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_CBD	0.130033	0.053258	2.441582	0.0207
LOG_CBC	-0.959630	0.271879	3.529627	0.6814
LOG_INF	-0.099286	0.055241	-1.797340	0.0824
LOG_INT	0.269606	0.126314	2.134414	0.0411
LOG_INV	0.043872	0.069084	0.635062	0.5302
LOG_NSA	0.280659	0.253669	-1.106401	0.0273
C	3.218006	0.505468	6.366383	0.0000

Source Author's Computation 2024

Given the above result, the estimated equation below is derived

RGDP=3.218006+0.2696061NT+0.281NSA-0.099INF-0.959630CBC+0.130033CBD

The result shows that the Interest Rate has a significant and positive effect on GDP i.e. economic development in Nigeria since the value of probability is below 5%. The regression coefficient indicates interest rate is increased by 0.26 percent and suggest that a rise in interest rate will lead to positive increase in GDP in Nigeria. The commercial bank deposit shows positive influence on gross domestic product and indicates a strong significant on GDP which means that Nigerian banks optimize savings of their depositors on Nigeria economic activities and development since an increase commercial bank deposit or mobilization will lead to an increase in financial resources lend out by the bank to an investor.

The inflation rate (INF) is negatively and insignificantly related to economic development. The sign conforms with what the economic theory says implying that high inflation rates deter investors from investing and hence cause a decrease in the RGDP of Nigeria. Our result conforms to the result of Ezurumba and Chigbu (2013). National savings (NSA) shows a significant impact and positive effect on RGDP in Nigeria. This is supported by the theory of a priori economics, which holds that a rise in national savings will lead to a rise in financial resources available for economic operations, investment, and development. The co-efficient of 0.28 percent suggests that a 1 unit rise in national savings will lead to a positive rise in the real gross domestic product by 0.28 percent and our regression output national savings is in line with the regression result of Haruna and Yahya (2013). Commercial bank credit (CBC) has a negative impact and also insignificant with the RGDP, which shows that a decrease in commercial bank credit caused by an increased interest rate will trigger a rise in economic growth and development in Nigeria.

The regression as a whole is rather significant at the 5% level of significance, indicating that the combined consequences of every variable included are statistically relevant. The coefficient of determination (R-squared) and adjusted R-squared are 99.4% and 99.3%, respectively, suggesting that the design fits the data. Particularly, the adjusted R-squared indicates that approximately 99.3% of the difference in RGDP (economic development) is described by the variation in the explanatory elements. The remaining 0.7% is attributed to random variation (stochastic term).

Table 4 Johansen Co-Integration Test

Series LOG_GDP LOG_CBD LOG_CBC LOG_INF LOG_INT
LOG_INV LOG_NSA
Lags interval (in first differences) 1 to 1

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.786375	178.9392	125.6154	0.0000
At most 1 *	0.773644	128.0026	95.75366	0.0001
At most 2 *	0.636168	78.97620	69.81889	0.0078
At most 3	0.472864	45.61111	47.85613	0.0800
At most 4	0.312168	24.48135	29.79707	0.1808
At most 5	0.229844	12.13241	15.49471	0.1507
At most 6	0.101013	3.514063	3.841466	0.0608

Trace test indicates 3 co-integrating equations at the 0.05 level
* denotes rejection of the null hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.786375	50.93660	46.23142	0.0146
At most 1 *	0.773644	49.02640	40.07757	0.0038
At most 2	0.636168	33.36509	33.87687	0.0574
At most 3	0.472864	21.12977	27.58434	0.2684
At most 4	0.312168	12.34894	21.13162	0.5136
At most 5	0.229844	8.618343	14.26460	0.3193
At most 6	0.101013	3.514063	3.841466	0.0608

Max-eigenvalue test indicates 2 co-integrating equations at the 0.05 level
* denotes rejection of the null hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Based on the results of the trace likelihood ratio test, the null hypothesis of no co-integration among the variables is rejected in favor of the alternative hypothesis for up to 4 cointegrating equations at the 5% significance level. This shows the presence of at least four co-integrating equations, suggesting a distinct long-run connection among the elements. The coefficients calculated in the regression can therefore be considered as equilibrium values.

Table 5 Pairwise Granger Causality Tests

Null Hypothesis	Obs	F-Statistic	Prob.
LOG_CBD does not Granger Cause LOG_GDP	33	3.18762	0.0566
LOG_GDP does not Granger Cause LOG_CBD		6.05685	0.0065
LOG_CBC does not Granger Cause LOG_GDP	36	0.51631	0.6018
LOG_GDP does not Granger Cause LOG_CBC		5.96400	0.0064
LOG_INF does not Granger Cause LOG_GDP	36	1.80526	0.1813
LOG_GDP does not Granger Cause LOG_INF		3.65560	0.0375
LOG_INT does not Granger Cause LOG_GDP	36	3.59383	0.0395
LOG_GDP does not Granger Cause LOG_INT		0.51402	0.6031
LOG_INV does not Granger Cause LOG_GDP	36	0.04716	0.9540
LOG_GDP does not Granger Cause LOG_INV		3.39973	0.0462
LOG_NSA does not Granger Cause LOG_GDP	36	0.91833	0.4098
LOG_GDP does not Granger Cause LOG_NSA		4.31715	0.0222
LOG_CBC does not Granger Cause LOG_CBD	33	3.68799	0.0379
LOG_CBD does not Granger Cause LOG_CBC		2.26870	0.1221
LOG_INF does not Granger Cause LOG_CBD	33	0.91144	0.4135
LOG_CBD does not Granger Cause LOG_INF		3.59275	0.0408
LOG_INT does not Granger Cause LOG_CBD	33	1.48349	0.2441
LOG_CBD does not Granger Cause LOG_INT		0.77314	0.4712
LOG_INV does not Granger Cause LOG_CBD	33	1.73972	0.1940
LOG_CBD does not Granger Cause LOG_INV		0.48438	0.6211
LOG_NSA does not Granger Cause LOG_CBD	33	2.84357	0.0751

LOG_CBD does not Granger Cause LOG_NSA		2.71886	0.0833
LOG_INF does not Granger Cause LOG_CBC	36	0.44910	0.6423
LOG_CBC does not Granger Cause LOG_INF		2.74638	0.0798
LOG_INT does not Granger Cause LOG_CBC	36	2.05138	0.1457
LOG_CBC does not Granger Cause LOG_INT		0.37545	0.6901
LOG_INV does not Granger Cause LOG_CBC	36	0.52695	0.5956
LOG_CBC does not Granger Cause LOG_INV		5.84595	0.0070
LOG_NSA does not Granger Cause LOG_CBC	36	4.09784	0.0264
LOG_CBC does not Granger Cause LOG_NSA		0.31746	0.7303
LOG_INT does not Granger Cause LOG_INF	36	0.35922	0.7011
LOG_INF does not Granger Cause LOG_INT		4.51411	0.0190
LOG_INV does not Granger Cause LOG_INF	36	1.24954	0.3007
LOG_INF does not Granger Cause LOG_INV		2.65915	0.0859
LOG_NSA does not Granger Cause LOG_INF	36	2.15308	0.1332
LOG_INF does not Granger Cause LOG_NSA		0.54163	0.5872
LOG_INV does not Granger Cause LOG_INT	36	0.35375	0.7048
LOG_INT does not Granger Cause LOG_INV		1.73529	0.1930
LOG_NSA does not Granger Cause LOG_INT	36	0.38691	0.6824
LOG_INT does not Granger Cause LOG_NSA		0.98180	0.3860
LOG_NSA does not Granger Cause LOG_INV	36	1.70688	0.1980
LOG_INV does not Granger Cause LOG_NSA		0.55593	0.5792

Source Author's Computation 2023

Based on the Granger causality results above, it is evident that GDP Granger causes NSA (National Savings), indicating that changes in gross domestic product can predict fluctuations in Nigeria's national savings. Conversely, NSA does not Granger cause gross domestic product, suggesting that

national savings does not predict GDP. This relationship is supported by the P-value result (P < 0.05). Similarly, there exists Granger causality between commercial bank deposit (CBD) and GDP, indicating that either variable can foresee the other in the long run given that their probability value is less than 5%. This means that future changes in commercial bank deposits can forecast variations in GDP, and vice versa.

Gross Domestic Product cause commercial bank credit which implies that the gross domestic product can foresee the future path of CBC which means that in an economy where the economic activities are booming the financial intermediaries like banks and others make funds or financial resources available for the investors to invest which will increase the economic development of that nation, this can be verified from the P-value as the P < 0.05 but commercial bank credit does not granger cause the GDP. Commercial bank deposit determines the future of national savings that is CBD granger causes NSA and an increase in commercial deposit mobilization will increase the national savings of Nigeria's economy.

National savings granger causes commercial bank credit but commercial bank credit does not cause national savings which means that national savings predict/determined the commercial bank credit to investors in the Nigerian context.

There is evidence of Granger causality between the variables commercial bank deposit (CBD) and commercial bank credit (CBC). This implies that either variable can predict changes in the other in the long run, as their probability values are below 5 percent. Moreover, the two variables are co-integrated, indicating a long-term relationship where they move together over time.

5. Conclusion and Recommendation

1.The finding on research hypothesis one reveals that there is a significant relationship between private savings and GDP in Nigeria's economic development, hence the null hypothesis should be rejected.

2. The finding on research hypothesis two reveals that private savings have significantly improved human development index in Nigeria, hence the null hypothesis should be rejected.

Private savings form the bedrock of economic development and prosperity. Investing in education and professional training allows individuals to enhance their skills and knowledge. A highly skilled workforce elevates a nation's productivity, making it more competitive on the global stage and

fostering long-term economic development. While private savings are crucial for economic development, government policies and financial literacy initiatives can significantly influence the savings behaviour of citizens. Encouraging a savings-friendly environment through tax incentives, promoting formal banking services and offering retirement savings plans can incentivize individuals to save more. Additionally, improving financial literacy empowers individuals to make informed decisions about saving and investing thus maximizing the impact of their savings on personal well-being and the broader economy.

The resilience of any economy hinges largely on its financial sector, which drives growth across other sectors. Both the public and private sectors play crucial roles in savings mobilization and deploying these resources into lucrative ventures. The public sector must put in place policies that foster mobilization of savings, while the private sector should efficiently utilize surplus funds raised through the financial system to invest in ventures that spur economic development.

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