EFFECT OF DOMESTIC SAVINGS AND INVESTMENTS ON NIGERIA'S ECONOMY: 1981-2020

ABSTRACT

This study assessed effect of gross domestic savings and investments on Nigeria's economy. The specific objectives of the study were to examine the relationship between gross domestic savings and investments and gross domestic product per capita; and the relationship between gross domestic savings and investments and adjusted net national income per capita in Nigeria: 1981-2020. The data used were extracted from the data base of World Development Indicators. Harrod-Domar growth Model and neoclassical growth theory of savings and investments explained the conceptual framework of this study. Using regression techniques the results showed that there is positive and significant relationship between gross domestic savings and gross domestic product per capita; there is negative but significant relationship between gross domestic investment and gross domestic product growth rate per capita; there is positive and significant relationship between gross domestic savings and adjusted net national income per capita; and there is negative but significant relationship between gross domestic investments and adjusted net national income per capita in Nigeria. Thus, gross domestic savings and investments contributed to economic growth and development in Nigeria. The work recommended that the Nigerian monetary authority should sustain the monetary policy rate between 11% and 12% and encourage savings deposit rate to be between 1.5% and 2.5%; and investment environment should be conducive through policy consistency from the Government; and that capital flight need to be curbed by improving ease of doing business in Nigeria by streamlining business registration process, and ensuring enforcement of national digital policy.

KEY WORDS: Domestic savings, Domestic investment, Gross domestic product per capita, Adjusted net national income per capita.

Introduction

Savings is that part of income not immediately spent or consumed but reserved for future consumption (Akinbobola & Ibrahim as cited in Stephen & Obah, 2017). It is that part of income not spent on current consumption, while investment is addition to capital stock (Olusoji in Odey, Effiong & Nwafor, 2017). Thus, it is the basis for capital accumulation and hence investment (Ominyi & Okoh, 2017). Private savings is the portion of the household's disposable income

which is not spent on consumption, as such the expenditure on goods and services impact greatly on the level of savings (Ominyi & Okoh, 2017).

Gross domestic savings (GDS) is the savings of private and public sectors of the economy. It represents the earnings left after meeting up private and public sectors' expenses or costs in a given economy. According to Lewis as cited in Adelakun (2015), the crucial role of domestic savings mobilization to the sustenance and reinforcement of the saving-investment growth chain in developing countries has preoccupied development economists for decades. Increasing the level of savings is a concern of developing economies. This has potential of funding and stimulating investments thereby achieving the economic goals of the nations.

Nnanna as cited in Ohadoma (2018) posits that savings and investments have been identified as engines for capital formation, economic growth and stability in developing economies like Nigeria. Nigeria's government has also been ambitious in economic recovery. The Nigeria economic recovery and growth strategies: 2017-2020 document observed that Nigeria's development efforts have over the years been characterized by lack of continuity, consistency and commitment (3Cs) to agreed policies, programmes and projects as well as an absence of a long-term perspective. Thus, the economy has not fared well as expected. The economic managers of Nigeria have designed policies, schemes, laws, regulations and reforms with a view of reducing the unpleasant economic outlook of Nigeria. But, as at 2020, the population is growing at 2.58%; the infrastructure gap deficit is estimated at $100 billion annually, that is 189.77% above the 2021 federal budget of about $34.51billion; the unemployment rate is increasing at 9.01%; the gross domestic product per capita is decreasing at -4.26%; the foreign direct investment is falling at 49.6% and the corruption perception index ranks Nigeria among the notorious (score of 25/100 with rank of 149/180). And, the Nigeria's

local and foreign loans is rising despite its accompanying high interest and harsh conditions. It was $29 billion by June, 2010 and has risen to $87.239 billion (about ₦33.107 trillion) as at March 31, 2021. In fact, the repayment is doubtful given the unpatriotic and ethnic bigotry of the present generation of Nigerians. In fact, Pettinger (2018) lamented that though savings ratio is a big determinant of economic growth, Nigeria spends more on consumption than savings. This implies that investments and exports are less financed than consumption. It seems that the economic managers have resorted to short-term consumption over long-term investments.

Nigeria's economic challenge is not unconnected with the fact that there is low level of income that prevents savings that is capable of stimulating investment capital domestically (Adeusi & Ibitoye, 2010). World Bank (2020) also identified poor infrastructural facilities (roads, electricity, water, etc) as one of the limitations to growth of Nigeria's economy. Jeremiah as cited in Ohadoma (2018) states that Nigeria has been rated as a poor country with respect to the Africa Investment Index survey report, 2017.

Harrod-Domar economic growth model proposed that the level of savings is a key factor in determining economic growth rates. Thus, savings play crucial role of mobilizing funds in the economy. Savings most vital function is providing a large pool of capital for investment which provides the pathway to economic growth and development. Ominyi and Okoh, (2017) observed that the propensity to save in sub-Saharan Africa is low as most of the countries in the region are ravaged by wars, struggling economies with a preponderance of poverty. The less developed countries (which Nigeria is among) are not capable of attaining high levels of individual savings due to low per capita income, engaging in frivolous and conspicuous consumption by even the few who could have excess of disposable income. The study by Ominyi and Okoh (2017) also showed that the marginal propensity to save had a value of 0.12 which implies low savings

culture in Nigeria. Indeed, it seems that the links among domestic savings, domestic investments and economic growth in Nigeria are weak.

Thus, if the economy is not growing as expected, there could be a problem with the savings culture and mechanism, and consequently inadequate investment. It is pertinent to examine the effect of domestic savings and investment on the Nigeria's economy. The broad purpose of this study is to ascertain the effect of domestic savings and domestic investments on the Nigeria's economy for the period 1981 to 2020. The specific objectives are to ascertain the effect of gross domestic savings and investments on Nigeria's gross domestic product growth rate per capita; explore the effect of gross domestic savings and investments on Nigeria's adjusted net national income per capita. The study hypothesized that: gross domestic savings and gross domestic investments have no significant effect on gross domestic product per capita in Nigeria; and gross domestic savings and gross domestic investments have no significant effect on adjusted net national income per capita in Nigeria.

The subsequent sections of this work include: conceptual review and framework; theoretical framework and empirical review of related works. Others are methodology, results and discussion, conclusion and recommendations.

Conceptual Review and framework

Domestic Savings:

Savings is that proportion of a person's (personal savings), companies or institution's income (retained profits) not spent on current consumption (Pass, Lows & Davis, 2005; Ohadoma, 2018). Saving means putting aside money for future use (Chauke, 2011). Kotlikoff as cited in Ohadoma (2018) defines savings as any income not used for immediate consumption.

Cronje as cited in Ohadoma (2018) posits that savings is that part of after tax income not used for current consumption.

Savings made can therefore be left idle, placed in a bank account or used to buy/purchase financial or physical assets. The implication of savings is that one forgoes current expenditure. This money not spent today can be invested where it will lead to future income to the saver through dividend, interest, rent receipts or capital appreciation.

At the national level, savings is that part of current national income that is not spent on current consumption. Savings increase the country's capital stock and its capacity to produce higher volume of goods and services. To save therefore, money can be set aside or expenditures can be cut down. Every economy needs to generate sufficient savings to fund her investments requirements or borrow from abroad (Adelakun, 2015). In fact, a high rate of savings will lead to a high rate of investment provided the following three steps are upheld: First, there must be an increase in volume of real savings so that additional resources become available for investment. Second, a means of collecting and channelling the savings to make them available to investors is necessary. Third, there must be some act of investment by which savings are transformed into productive capital (James *et al* as cited in Ojiegbe, Duruechi & Makwe, 2016).

Increasing savings and ensuring that they are directed to productive investment are central to accelerating economic growth. Osundina and Osundina (2014) observe that low level of savings has negatively affected capital accumulation which is germane in the development process. This makes savings a macroeconomic variable to attain and economic growth a subject of critical consideration (Stephen & Obah, 2017). The domestic savings can be from three sources namely, households, private sectors and public sectors.

All things being equal, savings helps to achieve investment which in turn helps to achieve economic growth. Thus, if the domestic savings is on the increase, it means increase in investible funds. If such investible funds are eventually put into relevant sectors of the Nigeria's economy, it will lead to economic growth and development.

Domestic Investment:

Keynes as cited in Nwanne (2014) defines investment as the production of new capital goods, plants and equipment. Investment in that context refers to real investment as defined by Keynes, and not financial assets/securities issued by a financial institution with a view to obtain returns over a specified period of time. It is the accumulation of real capital goods that will help in achieving future stream of earnings, increase productivity and efficiency to improve living standard of a people (Ikechi & Ozurumba, 2019). Investment is accumulation of real capital goods. Investment therefore involves not just the setting aside part of income or profit but its commitment to productive, value adding, interest or profit yielding areas or concerns (Kalu & Mgbemena, 2016).

Investment can be classified into four components namely; private domestic investment, public domestic investment, foreign direct investment, and portfolio investment. Private domestic investment refer to gross fixed capital formation plus net changes in the level of inventories; whereas public domestic investment is investment by government and public enterprises on social and economic infrastructure, real estate and tangible assets. The combination of private investment and public investment can be called Gross fixed capital formation. The foreign investment, when it is on tangible assets is referred to as Foreign Direct Investment (FDI). Portfolio investment is that on shares, bonds, securities (Bakare, 2011; Ojiegbe, Duruechi & Makwe, 2016).

Gross domestic investment (GDI) also referred to as Gross fixed capital formation is expenditure on fixed assets. Ohadoma (2018) defines domestic investment as business spending on fixed assets such as factories, machinery, equipment, dwellings and inventories of raw materials that provide the basis for future production. In this study, gross domestic investment infers gross fixed capital formation (% of GDP); that is, the total value of a producer's acquisitions, less disposals of fixed assets during the accounting period plus certain additions to the value of non-produced assets realized by the productive activity of institutional units. GDI for this study includes improvements on land, purchases of plant, machinery and equipment, construction of roads, railways, schools, offices, hospitals, private residential dwellings as well as commercial and industrial buildings.

It is what is saved that can be invested, and it is what is invested that can be put into productive use leading to the production of goods and services. Thus, the goods and services produced will lead to the growth of an economy. Igbatayo and Agbada (2012) noted that higher level of national savings leads to higher investment and consequently higher output. This is so because the level of savings determines the magnitude of capital accumulation. Capital formation promotes production and determines the speed of economic growth and development.

Adjusted net national income per capita:

National income is the total value of the final output of all new goods and services produced in a country in one year. Adjusted net national income is the gross national income (GNI) less consumption or depletion of fixed capital. The per capita income is computed by dividing the adjusted net national income of a country by the number of people in that country (Per capita income = Total income ÷ Total population).

Gross Domestic Product per capita:

Economic growth refers to the quantity of goods and services produced in an economy over a given period of time. Mohammed (2014) defines economic growth as a sustained expansion of potential output as measured by the increase in real Gross Domestic Product (GDP) over a certain period of time. It is measured on annual basis hence have annual figures.

Gross domestic product (GDP) refers to the money value of all goods and services produced in a country at a given or particular period of time. The Organisation for Economic Cooperation and Development defines Gross Domestic Product (GDP) as an aggregate measure of production of goods and services in a country during a certain period. It is equal to the sum of the gross values added of all residents, institutional units engaged in production (plus any taxes, and minus any subsidies on products not included in the value of their outputs). The GDP can be computed using production approach, income approach and expenditure approach.

Gross domestic product per capita therefore, is the money value of all goods and services produced in a country at a particular period of time divided by its population (GDP divided by total population). Conceptually, this study argues that increasing capital formation and properly fashioned investments are critical determinants that explain economic prosperity of any nation.

Theoretical framework

Harrod-Domar growth Model and neoclassical growth theory of savings and investments explained the conceptual framework of this study. The Harrod-Domar growth theory posits that economic growth depends on the rate of savings or investments and the incremental capital-output ratio in the economy (Ohadoma, 2018). This model is used in development economics to explain an economy's growth rate in terms of the level of savings and of capital (Nwanne, 2014).

According to Harrod and Domar as cited in Chuba and Ebhotemhen, 2019, savings increase economic growth through increase in investments. They believe that the main purpose of savings is for investment and so when savings increase, investment increases, and an increase in investment will lead to an increase in economic growth. Harrod-Domar economic growth model stresses the importance of savings and investment as key determinants of growth.

The neoclassical growth models (Solow, 1956; Swan, 1956) based on the assumption that labour, capital and technology are factors necessary for growing economy. Thus, capital accumulation will be maximized by policies aimed at increasing household savings rates and capital imports (foreign savings). The neoclassical economists posit that the level of savings determines the level of investment and equilibrium interest rate. This implies that savings is a way to increase investment which result in increased capital accumulation and ultimately increased economic growth.

Empirical Review

Agu and Omolade (2021) examined the impact of savings and investment on economic growth in Nigeria for the period 1980-2019. The independent variables were savings and investment while the dependent variable was gross domestic product growth rate. Statistical tests done were ARDL, ADF, Bound test co-integration, and Bai-perron structural break. They found that savings have a negative and statistically significant effect both in the short-run and long-run on economic growth in Nigeria; and that investment negatively and significantly affected economic growth in Nigeria both in the short-run and long-run.

Chuba and Ebhotemhen (2019) studied the effect of gross domestic savings on economic growth in Nigeria for the period 1986-2019 using ECM. GDP proxied economic growth while

household final consumption expenditure, gross domestic savings, general government final consumption expenditure, and net export were used as independent variables to proxy gross domestic savings. The result showed coefficient of ECM to be negative and statistically significant at 5% level, hence concluded that Harrod-Domar and Keynesian expansionary hypothesis affect savings and economic growth in Nigeria.

Oyedokun and Ajose (2018) investigated the impact of domestic investment on economic growth in Nigeria for the period 1980-2016. They obtained data from CBN statistical bulletin, Nigerian stock exchange and World Bank data base for dependent variable (GDP) and independent variables (domestic investment and government expenditure). Granger causality, unit root and co-integration tests were carried out. The results showed that long-run significant relationship exists between domestic investment and GDP. Domestic investment granger caused economic growth for the period reviewed; and domestic investment positively influenced real GDP.

Siaw, Enning and Pickson (2017) ascertained the relationship between domestic savings and economic growth for 1970-2013. Johansen co-integration test and VECM were used for analysis. In the long-run, consumer price index, trade openness, FDI and domestic savings had positive and significant impact on economic growth. In the short-run, the domestic savings had negative and insignificant effect on economic growth.

Stephen and Obah (2017) analyzed the impact of National Savings on economic growth in Nigeria for the 1990 to 2015 using time series data. The data were obtained from CBN statistical bulletin and analyzed using OLS. Results showed a positive and significant relationship between national savings and gross domestic product in Nigeria for the period reviewed.

Ominyi and Okoh (2017) determined the relationship between GDP and private savings in Nigeria. The variables - dependent (GDP) and independent variables (total savings, private consumption expenditure, gross fixed capital formation, interest rate and core credit to private sector) were analysed using VECM and OLS. Research result showed that a positive relationship exists between GDP and savings; that a percent change in savings would result in an 8.29% change in GDP; and that marginal propensity to save had a value of 0.12 which implies low savings culture in Nigeria.

Ojiegbe, Duruechi and Makwe (2016) studied the effect of savings and investment on the economic growth of Nigeria for the period 1980 to 2014. The dependent variable was GDP while independent variables were Nigerian savings and investments. Data were obtained from CBN statistical bulletin, and analysed using Ordinary Least Square method, Augmented Dickey Fuller test, granger causality test, error correction model and co-integration test. The results showed that savings had a positive but non-significant effect on economic growth, while investment had a positive and significant effect on economic growth.

Odionye, Emerole and Ugwuegbe (2016) examined the causal relationship between domestic private savings and economic growth in Nigeria for the period 1980 to 2013. The result of granger causality test showed a strong unidirectional causality from domestic private savings to economic growth in Nigeria. The Johansen co-integration results indicated that there is a positive long-run relationship between private savings and economic growth. This suggests that Nigeria should employ appropriate mix of policies to enhance domestic savings in the country.

Eze and Nwigboji (2016) investigated the causality between domestic savings and economic growth in Nigeria using the Toda-Yamamoto approach. Data obtained from CBN statistical bulletin from 1981 to 2014 for the study were total private savings, government

expenditure, financial deepening and real gross domestic product. They analyzed the data using ADF, VAR model and Toda-Yamamoto approach to granger causality test. They found that total private savings had positive impact on real gross domestic product; and that causality exist between total private savings (TPS) and real gross domestic product with causality running from RGDP to TPS.

Johnson (2015) examined the relationship between savings, investment and economic growth using time series data for 29 years. The independent variables were domestic savings, domestic investment, inflation rate, labour and interest rate, while GDP was the dependent variable. The data were analysed using error correction model. The result showed a positive relationship between savings, investment and economic growth in Nigeria.

Ilegbinosa, Micheal, and Watson (2015) examined the impact of domestic investment on economic growth in Nigeria for the period 1970-2013. Annual time series data was obtained from CBN statistical bulletin and analyzed using co-integration and multiple regression. They found out that private investment and government productive investment had positive and significant impact on economic growth within the period they reviewed.

Kalu and Mgbemena (2015) did a study on the relationship between domestic private investment and economic growth in Nigeria for the period 1970 to 2012. Data obtained from CBN statistical bulletin were analyzed using Cob-Douglas model and Error Correction Modeling (ECM) techniques. Their findings showed that equilibrium relationship exists among the variables both in the long-run and short-run; and that investment has significant impact on real gross domestic product.

Nwanne (2014) assessed the implications of savings and investment on economic growth in Nigeria for the period 1981 to 2014. Gross domestic product was used as the dependent

variable while independent variables were gross domestic savings and gross domestic investment. Augmented Dickey Fuller and Phillip-Perron were used to test for stationarity while co-integration test was used for long run relationship. The result revealed that there is long run relationship between savings, investment and economic growth in Nigeria. The ordinary least square regression results showed that change in GDS has negative and significant effect, while change in GDI has positive and significant effect on the change in economic growth in Nigeria.

Uma, Odionye and Aniagolu (2014) examined the influence of investment and saving in Nigeria economy for the period of 1980 to 2012. Analysis of annual time series data obtained was done using co-integration. Their findings indicated that savings and domestic investment have long-run positive and significant impact on the Nigerian economy; and foreign direct investment has negative and insignificant impact on the Nigerian economy for the period reviewed.

Abiodun and Basiru (2013) examined the relationship between domestic savings and economic growth in Nigeria. Annual time series data were obtained for the study. The methods of analysis were correlational and granger causality tests. They found out that causality runs from savings to economic growth.

Udousoro, Eko and Ubong (2013) examined the causal relationship between savings and economic growth for the period 1980 to 2010 in Nigeria. The variables for the study were gross domestic savings, fixed capital formation and labour force as independent variables, while gross domestic product was the dependent variable. The trivariate dynamic granger causality model was used for the analysis. The study found that gross domestic savings, fixed capital formation, and labour force are determinants of economic growth in Nigeria.

Obi, Wafure and Menson (2012) empirically examined the relationship among savings, investment and economic growth in Nigeria. The independent variables were gross domestic savings and gross domestic investment while the dependent variable was economic growth (proxied by growth rate of gross domestic product). Co-integration and error correction models approach were used for the data analysis. Long-run relationship existed among the variables. The ECM analysis showed that investment to gross domestic ratio, real growth rate of gross domestic product, gross domestic savings and cost of capital were significant determinants of investment in Nigeria; real growth rate of gross domestic product, gross domestic investment to gross domestic product and economic liberalization were significant determinants of savings.

Abu (2010) analyzed the relationship between domestic savings and economic growth in Nigeria for the period 1970-2007 using granger causality and co-integration techniques. The Johannsen co-integration test indicated that the variables (GDP and GDS) are co-integrated and a long-run equilibrium existed between them. The granger causality test showed that causality runs from GDP to GDS which means that GDP growth induced and granger caused GDS.

Many of the reviewed related studies focused on savings and economic growth nexus. Some examined the relationship between savings, investment and economic growth, others ascertained the relationship between investment and economic growth. Some reviewed works used two or three variables. This study employed domestic savings, investment, gross domestic product growth rate per capita and adjusted net national income per capita variables. The forgoing implies that four variables were used. The study period scope is 40 years: 1981-2020.

Methodology

Research design adopted was *ex-post facto* design. The data for this study were extracted from World financial indicators website for gross domestic savings, gross domestic investment, gross domestic product per capita and adjusted net national income per capita for Nigeria.

This study adapted the model of Nwanne (2014) to assess the implications of savings and investments on economic growth in Nigeria for the period 1981-2014. He modelled that:

GDPGR = f(GDS, GDI).

This study, therefore proposed that:

GDPGR = f(GDS, GDI)

ADNNI = f (GDS, GDI)

The models were econometrically estimated as follows:

$GDPGR_t = b_0 + b_1GDS_t + b_2GDI_t + e_t$

$ADNNI_t = b_0 + b_1GDS_t + b_2GDI_t + e_t$

Where: bo is constant; b_1 and b_2 = coefficient of the independent variables; $GDPGR_t$ = Gross domestic product growth rate per capita; $ADNNI_t$ = Adjusted net national income per capita; GDS_t = Gross domestic savings; and GDI_t = Gross domestic investment.

The *a priori* expectation of the study is that the independent variables (gross domestic savings, and gross domestic investment) will have positive significant effect on the dependent variables (gross domestic product growth rate per capita and adjusted net national income per capita).

Decision Criteria - Accept the null hypothesis if the p-value is greater than 0.05. Null hypothesis will be rejected if the p-value is less than 0.05.

Results and Discussions

The data processed are depicted in Table 1 showing the Nigeria's gross domestic savings, gross domestic investment, gross domestic product growth per capita, and adjusted net national income per capita**.**

Table 1: Nigeria's gross domestic savings, gross domestic investment, gross domestic product growth per capita and adjusted net national income per capita

Year	GDS (% of GDP)	GDI (% of GDP)	GDP per capita growth (annual %)	Adjusted net national income per capita (annual % growth)
1981	88.38949385	89.38105309	-15.4503572	0
1982	85.5414791	85.93389861	-9.195106768	-15.36607099
1983	76.77526187	75.75313499	-13.1531488	-23.3142389
1984	62.2683987	58.94737865	-3.584936729	-16.49340422
1985	50.19254256	46.39087543	3.233578993	1.601228745
1986	56.31292154	54.95058655	-2.509948582	-8.354283921
1987	56.18768794	49.98770883	0.525848546	-8.352967598
1988	49.04190355	43.64421915	4.546936499	8.808920746
1989	68.80762262	52.48869056	-0.708853154	-7.076441251
1990	64.21149082	53.18668521	8.930687273	7.639605737
1991	59.87784667	48.40571698	-2.16446498	8.865842557
1992	53.50150125	43.77938896	2.025824564	2.477018074
1993	50.90218473	44.48885975	-4.457078143	-18.66809526
1994	46.12287743	42.08362086	-4.232818328	-1.492219356
1995	46.02292049	37.23966698	-2.530052289	6.875263738
1996	42.41722746	36.62555769	1.634594009	7.520913658
1997	44.31595568	38.47745854	0.406825955	0.700669074
1998	37.62452273	40.6149508	0.05719452	-5.427028024
1999	46.55264274	38.34181136	-1.895720223	6.074998686
2000	57.16047316	34.10954141	2.419132598	3.72743741
2001	37.747306	30.92588983	3.29057075	11.81863065
2002	34.02677963	27.58250942	12.45746816	13.55410733
2003	33.55459562	29.38679832	4.657786291	4.627743008
2004	35.72970174	27.11796542	6.489603677	-3.216451526
2005	35.19804017	26.18958967	3.721623939	5.987407517
2006	44.33128349	27.86558554	3.326217878	14.59063087
2007	24.3803505	21.24460887	3.822072301	0.544182708
2008	30.44030519	19.8969961	3.972510493	-8.19075908
2009	23.25150825	22.04953582	5.197954409	6.713279244
2010	23.99316644	17.562103	5.15854535	1.660506393

2011	25.39999264	16.3605621	2.525322229	-6.062916675
2012	33.17661635	14.95882591	1.472851229	11.70487251
2013	19.95485914	14.90390593	3.853722679	-1.406806935
2014	21.78776116	15.80270277	3.51397656	3.532266498
2015	15.49007147	15.49010409	-0.029282305	-5.168346731
2016	13.08043666	15.36673615	-4.168388406	-9.824919346
2017	15.46985285	15.47432765	-1.788817621	-4.55227965
2018	17.79971966	19.8137748	-0.679724708	-0.940113918
2019	20.62452344	25.41589099	-0.379752402	-2.950898725
2020	21.65813068	29.39886055	-4.260113144	..

Source: World Development Indicators website

Table 2 Descriptive statistics

	ADNNI	GDI	GDPGR	GDS
Mean	-0.445818	36.19095	0.401307	41.73305
Median	0.272091	32.51772	0.999350	40.08227
Maximum	14.59063	89.38105	12.45747	88.38949
Minimum	-23.31424	14.90391	-15.45036	13.08044
Std. Dev.	8.847474	18.85074	5.310222	19.31563
Skewness	-0.544343	1.092146	-0.809604	0.553650
Kurtosis	2.964324	3.935148	4.569662	2.701050
Jarque-Bera	1.977520	9.409385	8.476126	2.192476
Probability	0.372038	0.009053	0.014436	0.334126
Sum	-17.83272	1447.638	16.05229	1669.322
Sum Sq. Dev.	3052.834	13858.66	1099.740	14550.65
Observations	40	40	40	40

Source: E-view output data, 2022

The results revealed that ADNNI, GDI, GDPGR and GDS had the means of -0.445818, 36.19095, 0.401307, and 41.73305 respectively. The standard deviations stood at 8.847474, 18.85074, 5.310222, and 19.31563 respectively. The Jarque-Bera Statistic probability of less than 0.05 for GDI and GDPGR indicated normal distributions as against ADNNI (0.372038) and GDS (0.334126) whose kurtosis were 2.964324 and 2.701050 indicating near flat trend. Thus, there are other mediating factors that would have influenced rate of investments and savings.

The variables were tested for stationarity using Augmented Dickey Fuller test. The parameter extracts were shown in Table 3.

Table 3: Unit Root Test Extracts

VARIABLES	ADF STAT	5% CRITICAL	INFERENCE	P-VALUE	DECISION
GDPGR	-3.042227	-2.941145	1(0)	0.0399	Reject
ADNNI	-4.35433	-2.941145	1(0)	0.0014	Reject
GDS	-5.50851	-2.951125	1(1)	0.0001	Reject
GDI	-4.51651	-2.941145	1(1)	0.0009	Reject
INFL	-5.672638	-2.943427	1(1)	0.0000	Reject

Source: Researchers' extraction from the unit root tests results using ADF methods.

From table 3, there is no evidence of unit root among the series in the first order of integration as tested. The probability value statistic is less than 5% significant level. The series are stationary and suitable for estimation using regression techniques.

The series were also checked for serial correlation using Breusch-Godfrey serial correlation method. Table 4 depicted the correlation LM test result.

Table 4: Correlation LM Test Result

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.197925	Prob. F(2,33)	0.3146
Obs*R-squared	2.639806	Prob. Chi-Square(2)	0.2672

Source: Researchers' extraction from the correlation LM test result

From the table 4, it is observed that the value of F-statistic and Observed R–Squared (0.3146 and 0.2672 respectively) are greater than 5% level of significance. Therefore, there is no evidence of serial correlation among the variables. The table 5 depicted the GDPGR model regression output parameters.

Table 5: GDPGR regression model output parameters

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	4.913581	1.490367	3.296894	0.0022
GDI	-0.443802	0.100975	-4.395178	0.0001
GDS	0.276743	0.098544	2.808308	0.0079

R-squared	0.496288	Mean dependent var	0.401307
Adjusted R-squared	0.469060	S.D. dependent var	5.310222
S.E. of regression	3.869327	Akaike info criterion	5.616077
Sum squared resid	553.9527	Schwarz criterion	5.742743
Log likelihood	-109.3215	Hannan-Quinn criter.	5.661875
F-statistic	18.22731	Durbin-Watson stat	1.565881
Prob(F-statistic)	0.000003		

Source: E-view output data, 2022

Table 5, the model utility is significant given that the Prob (F-stat) is 0.00003; and the Durbin–Watson stat of 1.565881 which is nearer to 2.0 benchmark, indicating no autocorrelation in the residuals of the regression analysis. The R-squared was 0.4962, and the adjusted R-squared of 0.469060 showed that the model explained about 47% of the changes GDPGR and fit for testing of the hypotheses.

The Table 6 showed the ADNNI regression model output parameters.

Table 6: ADNNI regression model output parameters

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.385538	3.013729	0.791557	0.4337
GDS	0.499997	0.199270	2.509138	0.0166
GDI	-0.654798	0.204185	-3.206888	0.0028

R-squared	0.258021	Mean dependent var	-0.445818
Adjusted R-squared	0.217914	S.D. dependent var	8.847474
S.E. of regression	7.824318	Akaike info criterion	7.024389
Sum squared resid	2265.138	Schwarz criterion	7.151055
Log likelihood	-137.4878	Hannan-Quinn criter.	7.070187
F-statistic	6.433329	Durbin-Watson stat	1.888138
Prob(F-statistic)	0.004002		

Source: E-view output data, 2022

From Table 6, the model utility is significant given that the Prob (F-stat) is 0.004002; and the Durbin–Watson stat of 1.888138 which is nearer to 2.0 benchmark, indicating no

autocorrelation in the residuals of the regression analysis. The R-squared was 0.258021, and the adjusted R-squared of 0.217914 showed that the model explained about 21% of the changes in ADNNI and fit for testing of the hypotheses but not model parameter estimation.

Hypotheses testing:

1. **Hypothesis One:** Gross domestic savings do not have significant effect on Nigeria's gross domestic product per capita.
2. **Hypothesis Two:** Gross domestic investments do not have significant effect on Nigeria's gross domestic product per capita.

Table 7 showed the extracts for testing hypotheses one and two.

Table 7 GDPGR Model: Extracts for testing Hypotheses one and two

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	4.913581	1.490367	3.296894	0.0022	
GDI	-0.443802	0.100975	-4.395178	0.0001	Reject
GDS	0.276743	0.098544	2.808308	0.0079	Reject

Source: Extracts from Table 5

The coefficient of GDS is 0.276743; and its t-stat is 2.808308; and the corresponding probability value is 0.0079 less than 0.05 level of significance. We therefore, reject the null hypothesis and conclude that Gross domestic savings have positive and significant effect on Nigeria's gross domestic product per capita.

The coefficient of GDI is -0.443802; the t-stat is -4.395178; and the probability value is 0.0001 < 0.05. Thus, we conclude that Gross domestic investments have negative and significant effect on Nigeria's gross domestic product per capita.

3. **Hypothesis Three:** Gross domestic savings do not have significant effect on Nigeria's adjusted net national income per capita.

4. **Hypothesis four:** Gross domestic investments do not have significant impact on Nigeria's adjusted net national income per capita.

Table 8 showed the extracts for testing hypotheses three and four.

Table 8 ADNNI Model: Extracts for testing Hypotheses three and four

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	2.385538	3.013729	0.791557	0.4337	
GDS	0.499997	0.199270	2.509138	0.0166	Reject
GDI	-0.654798	0.204185	-3.206888	0.0028	Reject

Source: Extracts from Table 6

The coefficient of GDS is 0.499997; the t-stat is 2.509138; and the corresponding probability value is 0.0166 < 0.05 level of significance. We therefore, reject the null hypothesis and conclude that Gross domestic savings have positive and significant effect on Nigeria's adjusted net national income per capita.

The coefficient of GDI is -0.654798; the t-stat is -3.206888; and the probability value is 0.0028 < 0.05. Thus, we conclude that Gross domestic investments have negative and significant effect on Nigeria's adjusted net national income per capita.

Discussions: Gross domestic savings have positive and significant effect on Nigeria's gross domestic product per capita. This finding agrees with the findings of Udousoro, Eko and Ubong (2013), Abu (2010), and Obi, Wafure and Menson (2012). The Nigerian financial inclusions strategies must have contributed to increasing level of savings despite the low savings deposit rate of about 1.25%. The rising inflation rate in Nigeria must have retarded the expected volume of savings. Many would be savers would prefer making investments, and in many instances the investments failed due to inadequate feasibility study and harsh investment environment occasioned by climatic changes, increasing distrust among people of Nigeria, and corruption.

Gross domestic investments have negative and significant effect on Nigeria's gross domestic product per capita. This finding is not expected. The negative relationship between GDI and the GDPPC may not be unconnected to increasing rate of population. It seemed that over the years Nigeria has not invested sufficiently even in infrastructure with the rising population.

Gross domestic savings have positive and significant effect on Nigeria's adjusted net national income per capita. This finding agrees with the findings of Uma, Odionye and Aniagolu (2014) and Nwanne (2014). Unfortunately, the Gross domestic investments have negative and significant effect on Nigeria's adjusted net national income per capita. This may be due to inadequate investment which invariably stunted the growth of the national income. The national income growth could be attributed to commerce rather than real investments; and promotion of micro, small and medium scale enterprises in Nigeria.

Conclusion and Recommendations

The gross domestic savings and investments have contributed to economic growth and development in Nigeria. Thus, we recommend that the Nigerian monetary authority should sustain the monetary policy rate between 11% and 12% and encourage savings deposit rate to be between 1.5% and 2.5%; and investment environment should be conducive through policy consistency from the Government; and that capital flight need to be curbed by improving ease of doing business in Nigeria by streamlining business registration process, and ensuring enforcement of national digital policy. To reposition investment capability of Nigerians, there is need for actions and policies that should make for improved patriotism and security of lives and properties; there should be further tax incentives for start-up businesses especially those involved

in technology induced businesses; organizations and governments should give awards and grants for quality products producers; and government policies that will promote local contents and patronage should continually be upgraded.

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