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EFFECT OF DOMESTIC SAVINGS AND INVESTMENT ON CONSUMER PRICE INDEX IN NIGERIA

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ABSTRACT:

This study assessed the effect of domestic savings and investment on consumer price index in Nigeria. The outcry on poor economic wellbeing in Nigeria seems to be traceable to poor savings and consequent poor investment in the economy. This will further imply that adequate goods and services are not being produced in Nigeria leading to rising prices of the few ones available. The rising consumer price index (CPI) has adversely continued to affect the citizens' purchasing power and wellbeing. The data for the variables were extracted from World Development Indicators website for the years 1981 - 2020. The methods of data analysis include descriptive statistics, unit root, co-integration and error correction model. The independent variables were gross domestic savings (GDS) and gross domestic investment (GDI) while the consumer price index (CPI) was the dependent variable. The result obtained showed that there was no unit root among the variables as probability values of CPI, GDI and GDS were 0.0117, 0.0071 and 0.0001 respectively. It was found out that gross domestic savings and gross domestic investment have significant effect on consumer price index (both p-values at - 0.0002). It was recommended that government should make adequate provision for state-of-the-art infrastructures in the area of good economic activities-enabled road networks, stable affordable electricity, clean water; sustainable financial inclusion policy that paves room for access to financial services and adequate financial mobilizations to licensed banks. These will help increase output and lead to a healthy and reasonable decrease in prices of goods and services. Moreso, Nigerians need continuous orientation on the need to patronize and consume locally produced goods and services as well as use local content in production.

1. INTRODUCTION

Savings signifies what is left or kept back after expenses have been deducted from income. Savings is a shield that protects individuals and their nations from economic shock (Ohadoma, 2018). Gross domestic savings (GDS) is the savings of house holds, private as well as public sectors of the Nigerian economy. Domestic savings is that earnings or income left after meeting up our or the firm's expenses or costs in a given economy or environment. Furthermore, savings is said to be that part of income not immediately spent or consumed but reserved for future consumption (Stephen & Obah, 2017). Savings as such forms the basis for capital accumulation and hence investment (Ominyi & Okoh, 2017). According to 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. It is therefore a serious challenge in developing economies how they can bring about increased level of savings so as to fund and stimulate investment.

Ominyi and Okoh (2017) opined 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 developing economies (Nigeria inclusive) 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. In agreement with the forgoing, Pettinger (2018) posits that despite 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. He argued that since savings equals investment (other things being equal) there is the need to finance investment from savings. He submitted that the economy should not therefore choose short-term consumption over long-term investment. The forging submission is in tandem with the Harrod-Domar economic growth model which suggests that the level of savings is a key factor in determining economic growth rates. While savings play crucial role of mobilizing funds in the economy, its most vital function is providing a large pool of capital for investment which provides the pathway to economic growth and development.

Nwanne (2014) defined 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. Investment can be described as fund put into productive use with expected returns. 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). Gross

domestic investment (GDI) also referred to as Gross fixed capital formation, is expenditure on fixed assets. It is worthy to note that what is saved can be invested, and what is invested can be put into productive use leading to the production of goods and services. Osundina and Osundina (2014) observe that low level of savings has negatively affected capital accumulation which is germane in the development process. It should be noted that higher savings can help finance higher levels of investment and boost productivity over the long-term. Savings by individuals, business concerns and the government enable banks to lend more to the productive sectors of the economy (firms) for investment purposes. This in turn will lead to higher volume of goods and services production in the economy which is tantamount to increased GDP. Low savings in an economy indicates that the economic units are choosing short-term consumption over a long-term investment.

Shimelis (2014) posit that savings and investment have been considered as two macro-economic variables for achieving price stability and promoting employment opportunities thereby contributing to sustainable economic growth. Nwanne (2014) in his study maintained that savings and investment are the basic requirements for economic growth. In other words, they both play key role in promoting economic growth of any nation. This implies that there is the utmost need to enhance GDS and GDI so as to push up the growth of the Nigerian economy. Summarily, savings helps to achieve investment which in turn helps to achieve growth in output of goods and services. The forgoing will indeed help to ensure that the CPI is not on the increase having adequate goods for purchase by the citizens. An important ingredient for the growth of any economy is the volume of investment made in it, which is largely dependent on the quantum of savings (Ayadi, 2021). The outcry on poor economic well being in Nigeria seems to be traceable to poor savings and consequent poor investment in the economy. This will further imply that adequate goods and services will not be produced in Nigeria leading to rising prices of the few ones available. The CPI will therefore be adversely affecting the citizens' purchasing power and well being. Domestic savings and investment should lead to increased output in the economy leading to lower prices of goods and services. The percentage increase of the gross domestic savings and domestic investments over the years seem inadequate. Indeed, it seems that the links among domestic savings, domestic investment and economic growth in Nigeria is not giving the level of expected result due to rising prices. Nigerian economy has been bedeviled with low level of income, high cost of fund, inconsistent policies and plans, being largely import dependent among others. It is against this backdrop that there is the need to examine the effect of domestic savings and domestic investment on the consumer price index in Nigeria.

1.1 Objectives of the Study

The broad objective of this study is to ascertain the effect of gross domestic savings and gross domestic investment on consumer price index in Nigeria. The specific objectives of the study are:

i. to ascertain the effect of gross domestic savings on Nigeria's consumer price index.
ii. to explore the effect of gross domestic investment on Nigeria's consumer price index.

1.2 Hypotheses

In order to achieve the above objectives, the following hypotheses were formulated in their null forms

1. H_0: Gross domestic savings has no significant effect on Nigeria's consumer price index.
2. H_0: Gross domestic investment has no significant effect on Nigeria's consumer price index.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Domestic Savings

Savings have played and will continue to play crucial role in every economy. In order to invest more capital in our economy, we must have saved more from income. This implies sacrificing the consumption of goods and services in the current time in order to enjoy higher consumption in the future. The growth in domestic savings will make us less dependent on foreign capital. It will also make our households and firms more secure and strengthen long-term economic growth. Savings is that proportion of a person's (personal savings), companies or institution's income (retained profits) not spent on current consumption (Ohadoma, 2018). Adelakun (2015) posits that every economy needs to generate sufficient savings to fund her investments requirements or borrow from abroad. He however hinted that borrowing from abroad may have adverse effects on the balance of payments due to cost of servicing and exchange risk.

Ojiegbe *et al.* (2016) observed that 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 channeling 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. This savings mobilization can be internal through self-finance (ploughing back profits or borrowing from relatives), government appropriation through additional taxes and by financial intermediation. Ensuring that savings is increasing and directed to productive investment are central to accelerating output of goods and services in an economy. This in turn will ensure controllable or not high prices after factoring in

inflation. It is obvious that private savings in developing countries (Nigeria inclusive) constitutes the main source of capital accumulation for investment purposes.

2.1.2 Domestic Investment

Kalu and Mgbemena (2016) defined investment as 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. 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 on tangible asset is referred to as foreign Direct Investment (FDI). Portfolio investment is that on shares, bonds, securities (Duruechi & Ojiegbe 2015). Ohadoma (2018) defined 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. Igbatayo and Agbada (2012) noted that higher level of national savings leads to higher investment and consequently higher output. The forgoing is in line because the level of savings determines the magnitude of capital accumulation. Capital formation promotes production of goods and services and eventually is part of the determinant of prices of goods and services. In this study, gross domestic investment will be proxied by gross fixed capital formation (% of GDP). 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, assets within the Nigerian economy. It is these improvements that will trigger output volume and help avoid adverse / excessive consumer price index over the years.

2.1.3 Consumer Price Index

The consumer price index measures the average change in prices over time that consumers pay for a basket of goods and services. A basket of goods refers to a fixed set of consumer products and services whose price is evaluated on a regular basis, monthly or annually. CPI therefore quantifies the aggregate price level in an economy and thus measure the purchasing power of a country's unit of currency. It serves as an economic indicator used to measure inflation and deflation. It is a proxy for measuring the effectiveness of economic policies of the government, since it gives an idea of price changes. It goes a long way to guide the government in her decisions about the economy in Nigeria.

2.2 Theoretical Review

2.2.1 Horrod-Domar Growth Theory

There are theories that explain the relationship between savings and economic growth, as well as savings, investment and growth. The Horrod-Domar growth theory posits that economic growth depends on the rate of saving or investment and the incremental capital-output ratio in the economy. Also, Chuba and Ebhotemhen, (2019) stated that savings increases economic growth through an increase in investment. The duo believed that the main purpose of savings is for investment and so when savings increases, 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. A government will then need to introduce growth strategies so as to replicate the outcome suggested by the model. Also, the neoclassical economic models are based on the assumption that investment is financed from household savings. The theory posits that 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.

2.2 Empirical Review

Agu and Omolade (2021) examined the impact of savings and investment on economic growth in Nigeria. The independent variables were savings and investment while the dependent variable was economic growth proxied by gross domestic product growth rate. Time series data used for the analysis was for the period 1980 to 2019. Statistical tests done were auto-regressive distributed lag, augumented Dickey-Fuller, Bound test co-integration, Bai-perron structural break. They found out that savings have a negative and statistically significant effect both in the short-run and long-run on economic growth in Nigeria. On the other hand, investment negatively and significantly affects economic growth in Nigeria both in the short-run and long-run. Furthermore, infrastructural facilities proxied by electricity had negative and significant effect on economic growth in Nigeria.

Kuhe and Tottuam (2020) did a study on the causal relationship between domestic savings, domestic investment and economic growth in Nigeria for the period 1970-2015. ADF unit root test, Johansen co-integration, fully modified least squares, VECM and granger causality test based on Toda-Yamamoto procedure were employed in the study. GDP was used to proxy economic growth which

is the dependent variable, while domestic savings and domestic investment were independent variables. Results of the study showed that the variables were co-integrated. Domestic investment has positive and significant impact on economic growth in Nigeria in the long-run. The result of granger causality was 68.78% for correcting disequilibrium annually for achieving long-term equilibrium steady state position. It also showed statistical evidence of bidirectional causality between domestic savings and domestic investment in the short-run. There was no short-run granger causality between domestic savings and economic growth.

Ewubare and Worlu (2020) examined the effect of domestic investment on economic growth in Nigeria. The researchers used annual time series data obtained from the World Development Indicator and Central Bank of Nigeria statistical bulletin for the period 1990 to 2017. The dependent variable was GDP growth rate while independent variables were domestic investment in the manufacturing sector, domestic investment in the service sector and domestic investment in the agricultural sector. They used Ordinary Least Squares method and the Error Correction Model technique to analyze the data obtained. The Johansen co-integration test result showed that gross domestic product growth rate, domestic investment in the manufacturing sector, domestic investment in the service sector and domestic investment in the agricultural sector move together in the long-run. The long-run estimation showed that none of the independent variables impacted significantly on economic growth. On the other hand, the short-run estimation results showed lack of significant impact of the independent variables on economic growth in Nigeria.

Dahunsi (2020) did a study on the effects of interest rate on domestic savings in Nigeria. Data for the study was obtained for the period 1986 to 2018. The variables were gross domestic savings, interest rate, gross capital formation, and rate of inflation. The data obtained were analyzed using the autoregressive distributed lag (ARDL) technique. They found out that interest rate and gross domestic savings are co-integrated in the long-run. Also that while capital formation positively affects domestic savings, the interest rate affects domestic savings negatively for the period under review.

Chuba and Ebhotemhen (2019) did a study to determine the effect of gross domestic savings on economic growth in Nigeria for the period 1986-2019 using error correction model. GDP was used to proxy 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 of the regression analysis showed coefficient of ECM to

be negative and statistically significant at 5% level. They therefore rejected the classical neutrality of savings and the Keynesian paradox of thrift hypotheses.

Oyedokun and Ajose (2018) investigated the impact of domestic investment on economic growth in Nigeria for the period 1980-2016. The time series data was obtained from CBN statistical bulletin, Nigeria stock exchange and World Bank data base. Dependent variable was GDP while independent variables were 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 causes economic growth for the period reviewed. Also, domestic investment positively influences real GDP.

Siaw *et al.* (2017) ascertained the relationship between domestic savings and economic growth in the midst of antecedent variables with yearly data during the period 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 have positive and significant impacts on economic growth. In the short-run, the domestic savings have 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 variables were national savings and gross domestic product. The data were obtained from CBN statistical bulletin and analyzed using ordinary least square method using E-views 9. They found out that that there exists a positive and significant relationship between national savings and gross domestic product in Nigeria for the period reviewed.

Bakari (2017) investigated the relationship between domestic investment and economic growth in Algeria for the period 1969-2015. The time series data for the study was obtained from World Development Indicators 2016. The dependent variable was economic growth while independent variables were exports, imports, domestic investment. Co-integration, granger causality and VECM tests were carried out. The result of analysis showed that all variables were stationary at 1st difference. Long-run relationship showed that: (i) domestic investment has negative effect on economic growth. (ii) exports have a positive effect on economic growth. (iii) Imports have a positive effect on economic growth. In the short-run, granger causality test showed that only domestic investment and imports cause economic growth in Algeria.

Ojiegbe *et al.* (2016) did a study on 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 investment. Data was obtained from CBN statistical bulletin and analysed using ordinary least square, augmented dickey fuller test, granger causality test, error correction model and co-integration test. The results showed that savings does not significantly determine economic growth, but it shows a positive relationship. Investment positively and significantly affects economic growth through its control variables (export and foreign direct investment).

Odionye *et al.* (2016) examined the causal relationship between domestic private savings and economic growth in Nigeria for the period 1980 to 2013. Private savings was used to proxy domestic savings, while gross domestic product was used to proxy economic growth. Also, inflation and real interest rates were used as control variable. The study employed the augmented granger causality test analysis. The result showed a strong unidirectional causality from domestic private savings to economic growth in Nigeria. Their Johansen co-integration result 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 was obtained from CBN statistical bulletin for the period 1981 to 2014 for the analysis. The variables used for the study were total private savings, government expenditure, financial deepening and real gross domestic product. The analytical tools were augmented Dickey-Fuller (ADF) stationarity test, vector auto regressive (VAR) model and Toda-Yamamoto approach to granger causality test. The findings of the study showed that the variables were non-stationary at level but was stationary after first and second differencing. Total private savings has positive impact on real gross domestic product. Also, the results of the Toda-Yamamoto to Granger causality test revealed that significant causality exist between total private savings and real gross domestic product with causality running from RGDP to TPS.

Zinyurugwi and Mapfumo (2016) examined the relationship between domestic savings and economic growth in Zimbabwe. The variables used were gross domestic savings and gross domestic product. Data for the period 1980 to 2015 was used for the study using Engle-granger residual-based co-integration test. Their findings indicated that gross domestic savings does not have significant impact on economic growth in Zimbabwe for the period reviewed.

Johnson (2015) examined the relationship between savings, investment and economic growth using time series data for 29years. 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. The inflation rate contributes negatively to saving, while interest rate positively affects savings. Labour it was found impacts so much on economic growth.

Ilegbinosa *et al.* (2015) examined the impact of domestic investment on economic growth in Nigeria for the period 1970-2013. The variables used were real gross domestic product, private domestic investment, government productive capital expenditure, government protective capital expenditure, administrative component of government capital expenditure, economic component of government capital expenditure, social and community services component of government capital expenditure, transfer component of government capital expenditure. Annual time series data was obtained from CBN statistical bulletin, annual reports and statement of accounts (various issues) and National Bureau of Statistics. They used co-integration and multiple regressions to analyze the data. They found out that private investment and government productive investment had positive and significant impact on economic growth within the period they reviewed. Also, only investment on economic services was statistically significant. This implies that economic growth is achieved by increasing private investment and government spending on productive sectors of the Nigerian Economy.

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-peron 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 implication of savings and investment on economic growth was analysed using ordinary least square regression. The results showed that change in GDS movements has negative and significant effect on change in economic growth in Nigeria. Also change in GDI has positive and significant effect on the change in economic growth in Nigeria.

Obi *et al.* (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 which was proxied by growth rate of gross domestic product. Co-integration and error correction model approach were used for the data analysis. Long-run relationship among variables was established using Johansen maximum likelihood method. The ECM analysis showed that investment to gross domestic ratio, real growth rate of gross

domestic product, gross domestic savings and cost of capital are significant determinants of investment in Nigeria. Also, real growth rate of gross domestic product, gross domestic investment to gross domestic product and economic liberalization are significant determinants of savings. The study summarily established that there exists a robust relationship among savings, investment and growth for the period under review.

Abiola and Egbuwalo (2010) examined the relationship between savings and investment and between investment and economic growth in Nigeria. Time series data was used for the period 1975-2007 (33years). Ordinary least square method was used for the analysis. The researchers found out that there exists a positive relationship between savings and investment. Also, there exists a positive relationship between investment and economic growth. Further findings showed that inflation rate contributes negatively to saving, while interest rate on the other hand positively affect savings.

3. MATERIAL AND METHOD

The study adopted the *ex-post-facto* research design. This study was carried out in Nigeria and covered the period of 1981-2020. The data used for this study was sourced from World Development Indicators website. Data analysis were performed with descriptive statistics, unit root test and error correction model. The Augmented Dickey-Fuller (ADF) unit root test was used to confirm stationarity of the variables, while Engle-Granger was used to determine if long-run relationship exist between the dependent and independent variables based on the outcome of the stationarity test. The error correction model output result was used for test of hypothesis. The processing software used to process the data was E-views9. The *a priori* expectations of the study are that the independent variables (gross domestic savings and gross domestic investment) will have significant effect on the dependent variable - consumer price index.

The simple regression model was adopted in this study. It measures the association between a given dependent variable and an independent variable in a given regression function. The relationship is expressed as:

$Y_t = b_0 + bXt + et$

Where: Yt = dependent variable at time t

b_0 = intercept term

b_1 = parameter or coefficient of the independent variable

X_t = independent or explanatory variable at time t

e = error term

CPI = f(GDS)

CPI = f(GDI)

The models were explicitly defined as follows:

$CPI_t = b_0 + bGDS_t + e_t$

$CPI_t = b_0 + bGDI_t + e_t$

CPIt = Consumer price index

Consumer price index is dependent variable while the independent variables were gross domestic savings and gross domestic investment.

Gross Domestic Savings (GDS): This was measured as a percentage of GDP. It measures the volume of savings that flows to the private sector of the economy for investment purposes. It is expected to have a positive and significant impact on GDP.

Goss Domestic Investment (GDI): This was measured as a percentage of GDP. It was proxied by gross capital formation as a percentage of GDP. This variable captured the level of investment. This proxy (gross capital formation) was used because it offers an avenue through which accumulated savings are channeled to productive investment purposes through lending for economic growth.

Consumer Price Index: The consumer price index measures the average change in prices over time that consumers pay for a basket of goods and services. It quantifies the aggregate price level in an economy and thus measure the purchasing power of a country's unit of currency.

3.1 Decision Rule

The Beta coefficients of the respective independent variables were interpreted; t-tests and the p-values were estimated at 5% significant level. The decision rule was to accept the null hypothesis if the t-statistic is less than 2.0 or p-value greater than 0.05. Null hypothesis was rejected if the t-statistic is greater than 2.0 or p-value is less than 0.05.

4. RESULT AND DISCUSSIONS

4.1 Data Presentation

Table 1: Input Data for the Study: 1981-2020

Year	Consumer Price Index (2010 = 100)	GDS (% of GDP)	GDI (% of GDP)
1981	0.4893	88.3894	89.3810
1982	0.5270	85.5414	85.9338
1983	0.6493	76.7752	75.7531
1984	0.7650	62.2683	58.9473
1985	0.8219	50.1925	46.3908

1986	0.8689	56.3129	54.9505
1987	0.9670	56.1876	49.9877
1988	1.4942	49.0419	43.6442
1989	2.2483	68.8076	52.4886
1990	2.4139	64.2114	53.1866
1991	2.7278	59.8778	48.4057
1992	3.9442	53.5015	43.7793
1993	6.1989	50.9021	44.4888
1994	9.7343	46.1228	42.0836
1995	16.8243	46.0229	37.2396
1996	21.7485	42.4172	36.6255
1997	23.6036	44.3159	38.4774
1998	25.9631	37.6245	40.6149
1999	27.6814	46.5526	38.3418
2000	29.6007	57.1604	34.1095
2001	35.1874	37.7473	30.9258
2002	39.7184	34.0267	27.5825
2003	45.2916	33.5545	29.3867
2004	52.0844	35.7297	27.1179
2005	61.3885	35.1980	26.1895
2006	66.4379	44.3312	27.8655
2007	70.0175	24.3803	21.2446
2008	78.1263	30.4403	19.8969
2009	87.9351	23.2515	22.0495
2010	100	23.9931	17.5621
2011	110.8400	25.3999	16.3605
2012	124.3822	33.1766	14.9588
2013	134.9246	19.9548	14.9039
2014	145.8029	21.7877	15.8027
2015	158.9388	15.4900	15.4901
2016	183.8530	13.0804	15.3667
2017	214.2321	15.4698	15.4743
2018	240.1429	17.7997	19.8137
2019	267.5115	20.6245	25.4158
2020	..	21.6581	29.3988

Sources: Central Bank of Nigeria Statistical Bulletin and World Financial Indicators website.

Table 2: Descriptive Statistics

	CPI	GDI	GDS
Mean	61.43812	36.36506	42.24774
Median	29.60070	34.10950	42.41720
Maximum	267.5115	89.38100	88.38940
Minimum	0.489300	14.90390	13.08040
Std. Dev.	73.00007	19.06452	19.28819
Skewness	1.301195	1.057396	0.519764
Kurtosis	3.777909	3.823012	2.697480
Jarque-Bera	11.98857	8.368257	1.904724
Probability	0.002493	0.015235	0.385829
Sum	2396.087	1418.237	1647.662
Sum Sq. Dev.	202502.4	13811.33	14137.30
Observations	39	39	39

Source: E-views 9 output data

The above table displayed the descriptive statistical behaviour of all the parameters that were subjected to estimation in this study, by showing the average values. It is worthy to note that the standard deviation measures the dispersion from the sample average and in this study showed that the consumer price index had the highest value (73.0007). This implied that the consumer price index across the states in Nigeria was not stable rather highly volatile in nature.

4.1.1 Unit Root Test

Statement of Hypothesis in Null and Alternate Form

H_0= Series has a Unit root

H1= Series has no unit root

Table 3: Unit Root Test Results Summary

Variables	ADF-Stat	5% Critical value	Inference	P-Values	Decision
LNCPI	-3.565772	-2.945842	1(1)	0.0117	Reject Null
GDI	-3.740160	-2.938987	1(1)	0.0071	Reject Null
GDS	-5.508504	-2.951125	1(1)	0.0001	Reject Null

Source: E-views 9 output data

The study observed that there is no evidence of unit root among the series as tested since the probability value of t-statistics was less than 5% significant level. The variables attained stationarity at difference order one (1). The ADF results are more negative than the critical values at 5% level or in absolute terms greater than the critical values at 5% level of significance. The series were said to be stationary at this point since there is no evidence of unit root therefore the null hypothesis (presence of unit root) was not accepted

Table 4: Engle Granger Co-integration Test Table

Single Equation	**ADF Stat**	**At5%**	**Condition**	**Difference Order**	**P- Value**	**Co-integration**
CPI=F(GDS)	-0.982352	-1.949858	Short run	1(0)	0.2861	No
CPI =F(GDI)	0.435577	-3.53308	Short run	1(0)	0.9987	No

Source: E-views 9 output data

The co-integration test showed the summary of single equation Engle-Granger co-integration test outcomes indicating areas where co-integration were observed for long-run effect, otherwise short-run causality is carried out.

4.1.2 The Short-run Causality Test

Table 5: The Short-run Causal Effect (Wald Test)

MODEL	**Test Statistics**	**Value**	**Probability**	**Out come**
CPI=F(GDS)	Chi-Square	7138.78	0.0000	Causal Effect
CPI =F(GDI)	Chi-Square	44895.40	0.0000	Causal Effect

Source: Extracts for the E view 9 output data

This table Indicated that there is short-run causal relationship and stands as evidence of short-run causality test where the probability of chi-square (0.0000) are not greater than 5% level of significance. This indicated that C(2) = C(3) = C(4) is not equal to zero and do cause CPI in the short-run, therefore, the null hypothesis is not accepted and we then state that C(2)=C(3) =C(4) ≠ 0. This implies that the gross domestic investment (GDI) had a short-run causal effect on consumer price index (CPI).

4.2 Test of Hypotheses

The two hypotheses formulated in this study were tested using parameters estimated using Error Correction Model.

4.2.1 Hypothesis One

H_0: Gross domestic savings has no significant effect on Nigeria' s consumer price index (CPI).

Table 6: Error correction model output (model one)

CPI=F(GDS)

Dependent Variable: D(CPI)

Method: Least Squares

Date: 03/22/23 Time: 18:26

Sample (adjusted): 1983 2019

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.808710	0.550027	1.470310	0.1509
D(CPI(-1))	0.988142	0.054893	18.00131	0.0000
D(GDS)	-0.008403	0.049752	-0.168892	0.8669
ECT5	0.626601	0.149363	4.195153	0.0002

Source: E-views9 output

GDS= Gross domestic savings, CPI=consumer price index, ECT5(-1) = Error correction term at lag one.

4.2.1.1 Result Discussions

The table above showed the output of the error correction model where the coefficient of GDS is positively signed (0.626601) and its corresponding probability of t-statistic is not greater than 5% level of significance (0.0002).

Decision: Accept the null hypothesis if the probability value of t-statistic is greater than 5% level of significance, otherwise reject the null hypothesis.Since the probability value of t-statistic (0.0002) is not greater than 5% level of significance, the study failed to accept the null hypothesis and concluded that GDS has a significant and positive effect on consumer price index (CPI) in Nigeria.

This agrees with the finding of Obi *et al.* (2012). Consumer price index in Nigeria has been on the increase which is not good for an import dependent economy as Nigeria. However, with the finding of this study, savings mobilization needs to be encouraged, which will in turn be invested and

eventually lead to more production of goods and provision of services so as to contain the increasing prices of goods and services in Nigeria.

4.2.2 Hypothesis Two

H_0: Gross domestic investment has no significant effect on Nigeria' s consumer price index (CPI).

Table 7: Error correction model output (model two)

CPI = F(GDI)

Dependent Variable: D(CPI)

Method: Least Squares

Date: 03/22/23 Time: 18:30

Sample (adjusted): 1983 2019

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.746813	0.599354	1.246029	0.2215
D(CPI(-1))	0.993114	0.058307	17.03243	0.0000
D(GDI)	-0.016501	0.085759	-0.192412	0.8486
ECT6	0.629082	0.146985	4.279911	0.0002

Source: E-views9 output

GDS= Gross domestic investment, CPI=consumer price index, ECT6(-1) = Error correction term at lag one.

4.2.2.1 Result Discussions

The above table showed the output of the error correction model where the coefficient of GDS is positively signed (0.629082) and its corresponding probability of t-statistic was not greater than 5% level of significance (0.0002).

Decision: Accept the null hypothesis if the probability value of t-statistic is greater than 5% level of significance, otherwise reject the null hypothesis.

Since the probability value of t-statistic (0.0002). is not greater than 5% level of significance, the study failed to accept the null hypothesis and concluded that GDI had a significant effect on consumer price index (CPI) in Nigeria. The fact that Nigeria is battling with uncontrollable increase in prices of goods demands that there is the urgent need for a push up of the investments made in the economy.

Investments need to be made more and in the productive sectors so as to help increase output and hence curtail the increasing prices of goods in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study concluded that boosting gross domestic savings and investment in Nigeria will help boost output hence, curtailing the sharp rising prices of goods and services.

Based on the findings of this study we carefully recommend the following;

1. Government should make adequate provision for state-of-the-art infrastructures in the area of good economic activities-enabled road networks, stable affordable electricity, clean water; sustainable financial inclusion policy that paves room for access to financial services and adequate financial mobilizations to licensed banks. These will help increase output and lead to a healthy and reasonable decrease in prices of goods and services.
2. Nigerians need continuous orientation on the need to patronize and consume locally produced goods and services as well as use local content in production.

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