

Fiscal Policy and Sustainable Housing Development in Nigeria: An Empirical Analysis

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Article DOI: 10.48028/iiprds/ijsrssms.v6.i1.06

Abstract

The study tested the impact of fiscal policy on sustainable housing development in Nigeria from 1986 to 2020. The study used the ex-post facto research design and Autoregressive distribution Lag (ARDL) and error correction model (ECM) turned into used to decide the relationship and effect of fiscal policy on housing development in Nigeria. Accordingly, the Autoregressive distributed lag (ARDL) become used to check the lengthy-run relationship and the impact of fiscal policy on housing development in Nigeria. The ARDL result shows that government total revenue in Nigeria has a positive impact on sustainable housing development in Nigeria and based on probability the government total revenue in Nigeria has a significant impact on sustainable housing development in Nigeria. Also, government total debt in Nigeria has a positive impact on sustainable housing development in Nigeria, and based on a probability government total debt in Nigeria has an insignificant impact on sustainable housing development in Nigeria. More also, government total expenditure has a negative impact on sustainable housing development in Nigeria, and based on a probability government total expenditure has an insignificant impact on sustainable housing development in Nigeria. Therefore, the study recommended that government should evaluate the revenue and expenditure policies to increase the revenue generation in Nigeria to enhance sustainable housing improvement in Nigeria. Also, the government must reduce the use of debt on unproductive monetary activities to sustainable housing improvement in Nigeria.

Keywords: *Fiscal Policy, Expenditure, Sustainable, Housing Development*

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Background to the Study

Housing is essential in figuring out the elements that affect the welfare of the residents of a nation. This is because it promotes citizens' well-being and the performance of many sectors of the economy as a whole. According to Adekunle (2018), the housing sector seems to be more important in a country's well-being than is commonly recognised, for a variety of reasons. For starters, it is one of mankind's three most basic requirements. Second, housing is a critical long-term customer item that has a significant impact on productivity, as quality housing improves workers' health and well-being, and hence enhances productivity. It's one of the indexes for comparing human living standards among societies, with a value of 0.33 (Adekunle, 2018).

His comments are in line with Oladapo (2008), who stated that housing is a major financial asset that has a significant impact on the country's prosperity and the productiveness of its residents since respectable housing improves employees' health and influences citizens' well-being. This same availability of adequate housing has posed a challenge to most of the poor economies since the early 1970s, despite the efforts of all stakeholders, including government businesses, planners, and developers, to offer important plans for resolving the homeless problem. The cause is not far from overpopulation in urban areas due to the search for employment opportunities, which has resulted in overcrowding. It's miles important to note that the availability of respectable and low-priced houses should be made each in city and rural regions in Nigeria. because of the giant availability of crucial uncooked substances for production procedures in the rural regions. The foremost mission on housing is finance; that is because the provision of homes calls for huge monetary assets which the maximum of the medium and coffee-earnings earners in Nigeria are unable to manage to pay for (Sanusi, 2010). Kabir (2004) also posited that although the federal and some national governments intervened by using offering mass housing, simplest the rich and the privileged can manage to pay for it. He in addition stated that the authorities have advanced liberal housing regulations, created possibilities for employers and traders in addition to number one mortgage establishments to make budget available for intending residence proprietors to construct homes on their own. The established order of the federal housing authority, the Federal mortgage bank of Nigeria, as well as the introduction of the Ministry of Housing, city improvement, and surroundings are all federal authorities' efforts in addressing the housing challenges. Housing has been identified as a basic human need all around the world. Inadequate housing is one of the most important socioeconomic factors issues dealing with Nigeria for several long times. The coverage of the federal authorities' mission, Despite multiple housing programs launched by it and other levels of the government and its efforts, have been nipped in the bud. When examining the attempts made by successive governments to continue providing cheap housing since the country's independence in 1960 until now, it is obvious that such programs have failed to produce the desired results.

As an example, well known during 1972, Yakubu Gowon's administration developed the National Housing Programme, which was the first of its kind in Nigerian history. This turned into observed under the Federal Housing Authority's (FHA) standing as the sole entity charged with carrying out the government's sanctioned housing programs as of 1973. This

authority has established itself in many cities, including Abuja, the Federal Capital Territory. Furthermore, the majority of its homes are designed for high-income earners, who make up a small percentage of the homeless population. The federal government then attempted to build 59,000 housing units across the Federation of Nigeria, but it fell short of its goal (Sanusi, 2003). The governments of Generals Mohammed Murtala and Olusegun Obasanjo (1975-1979) got here through their housing initiatives to improve the general quantity of secure and cheap homes for low-income earners around the country. During that time, the government was supposed to provide and furnish a total of 202,000 housing units, but only 15% of the homes were finished and delivered. The objective institution became nevertheless the low-cost organization. The government was supposed to build 410,000 housing gadgets per year around the country, but only 32,000 housing gadgets were completed, accounting for about 7.8% of the total housing gadgets necessary. This time, too, the administration failed to fulfill its objective (Ojong, Anthony and Arikpo, 2016).

The general Muhammadu Buhari regime (1983 – 1985) persisted from where the Shagari management stopped, yet no impact became created or felt. The war for low-priced housing for the loads continued with the overall Ibrahim Babangida regime (1985 – 1993). It got here up with a brand new countrywide Housing coverage for the country in 1991 intending to make sure that everyone Nigerians very own or have to get entry to decent housing at inexpensive cost by using the yr 2000. To satisfy that closing date, the federal government in 1991 deliberate to broaden 850,000 housing units yearly. The government then failed to meet its goal because it did not broaden greater than five% of the anticipated housing devices before the give up of the management in August 1993 (Sanusi, 2003). Other successive governments together with those of preferred Sani Abacha (1993-1998), well-known Abdulsalami Abubakar (1998-1999), President Olusegun Obasanjo (1999-2007), President Umaru Musa YarAdua (2007-2010) also joined the fight to solve the state's significant housing crisis, albeit with limited success. The rapid population growth of Nigeria has inevitably resulted from an overabundance of demand for housing and related basic services and infrastructure. Over the years, Nigeria's housing situation had deteriorated significantly, resulting in issues such as high occupancy rates, difficulty acquiring land, natural growth of slums and blighted areas, spiraling rents in comparison to tenants' pay levels, and huge family length, among others (Ojong, Anthony and Arikpo, 2016).

More so, most empirical research on fiscal coverage (mainly on latest financial efforts) includes Kalle (2012); Lemo (2007); Hassanein and Barkouky (2008) targeting the contribution of economic coverage on the actual increase, with little attention on the housing development. Previous studies have additionally unnoticed the problem of causal links or relationships that might exist among economic coverage and housing development. This link is necessary to determine whether or not monetary coverage impacts housing development or whether it's miles the non-public quarter investments that influence the monetary coverage. If opposite causality holds then any attempt to estimate the connection econometrically could encompass an exam of the hassle of endogeneity inside the courting which is lacking in previous studies. Given this possibility, findings from preceding associated research that didn't account for the hassle of endogeneity are at fine deceptive and could also result in sub-most efficient policy pointers.

Similarly, the consequences previously received might not have provided a strong estimate for effective financial policy prescriptions. Furthermore, the longer-term examination methods used in literature are mostly Johansen (1991) and Engle and Granger (1987) co-integration methods, while the unrestricted asymmetric autoregressive allotted lag approach advanced by Adebayo (2012) is considered extra appropriate mainly in the presence of the disequilibrium nature of the time collection records stemming from the presence of feasible regime exchange as happens with most monetary policy frameworks. This study, therefore, followed the autoregressive allotted lagged version and mistakes correction technique to observe empirically the connection between fiscal policies and housing development in Nigeria. Some of these furnished a robust estimate of the parameters beneath research for effective fiscal policy prescriptions on housing development in Nigeria. This observation closed these recognized gaps by adopting a methodological technique that permits for assessing fiscal coverage's effect on the development of housing schemes in Nigeria. Therefore, the broad objective of this study is to examine the impact of fiscal policy on sustainable housing development in Nigeria. The specific objectives are to:

- i. Assess the impact of government total revenue on sustainable housing development in Nigeria.
- ii. Investigate the impact of government total debts on sustainable housing development in Nigeria.
- iii. Evaluate the government's total expenditure impact on sustainable housing development in Nigeria.

Conceptual Review

Concept of Fiscal Policy

Fiscal policy is concerned with actions that a country's government has planned within the vicinity of Spending money and/or levying taxes are two different things to steer macroeconomic variables consisting of the level of countrywide income or output, the employment stage, aggregate call for a degree, the general level of expenses, and so on. In the favoured path. Bhatia (2008) referred to that monetary coverage comprises of procedures and measures that the government takes on both the revenue and expenditure parts of its budget, and it's miles the combined effects of government spending and taxation on profits, production, and employment. As according to Akpapan (2014), financial coverage as a tool for macro-financial management is a valuable revenue from the state (particularly from taxes) and expenditure to limit the scope of economic activities in a country. If the projected level of demand is low, monetary policy is expected to be expansionary; if the desired level of demand is high, monetary policy is likely to be restrictive. Some interest-sensitive personal area spending may be displaced by an expansionary monetary policy linked to increased government spending. To stimulate growth, output, or unemployment during a recession, an expansionary monetary policy combined with monetary stimulation is required. When an economy becomes hot, however, fiscal and financial constraints must be tightened. This statement is consistent with Keynesian views on economic coverage, which suggest that both expansionary and contractionary policies can be utilised to impact macroeconomic performance. Dwivedi (2009) said that it's far the software used by the government on taxation, expenditure, and different economic operations to achieve positive countrywide

dreams. According to Ijeh (2008), is a government action plan for improving finances and disbursing funds. He also said that it is the use of government revenue and expenditure programs to influence the financial system in such a way that the desired result is achieved, such as full employment, a trendy desirable rate level, combined demand, and economic growth and development.

Concept of Housing Development

The housing may not command a consensus definition among students. This means that housing cannot stand alone; it interfaces with other segments of a rustic's economic system, which consist of the economic group, surroundings, and enterprise (non-public), sectors (Popoola and Alamu, 2016). Popoola and Alamu (2016) believed that housing is a mix of service-oriented businesses. Within those contrasting viewpoints, Bourne (2007) defines "housing" as follows: (1) a marketable commodity (monetary item) with market demand and a determinable economic cost as a financing source; (2) any physical facility, unit of construction, or building designed to provide a haven and technology for wealth generation and a mechanism for selling monetary increase.

These meanings are intertwined, and three key realities are conveyed. First, housing, like a shape or a place to live, protects from the elements or protection from vulnerability, and so satisfies humanity's safety needs. Second, housing is likewise an ostentatious item. House in Nigeria, particularly some of the political elegance, is built to display money or achievement in a showy or vulgar manner, as well as to affect humans. The house someone occupies remains a determinant of his social popularity, achievement, and a signal of self-expression (Agbola, 1995). It, therefore, satisfies a social need. Thirdly, as a tradable asset, housing is synonymous with an investment stock of capital, the object of the product; money is invested in it to make a profit for a man or woman, company, or authorities. Popoola and Alamu (2016) reveal that inside the united kingdom, Canada, United, States, among others, housing contributes among 30 percent and 70 percent to their GDP, while the arena represents merely 0.38 percent of GDP in Nigeria. In that regard, housing meets the financial desires of monetary dealers (person, company, and government).

Empirical Review

Ojong, Anthony, and Arikpo (2016) in their study on the effect of tax revenue on financial boom: proof from Nigeria, considered as unbiased variables, PPT, None Oil revenue (NOR), and CIT at the same time as GDP because of the variable that has been established. The study's outcome suggested a widespread and fantastic courting between the independent variables below observe and financial boom. Furthermore, while PPT and CIT have a positive impact on economic performance, any boost in NOR did not result in a rise or development in economic growth, as previously assumed. However, the study showed that the most significant challenge based on tax leakages is a lack of openness and accurate governance by officials, which significantly discourages citizens from actively complying with their tax obligations.

Okwara and Amori, (2017) tested the effect of revenue from taxation on the growth of the Nigerian economic system from 1994 to 2015. Gross domestic product (GDP) changed into used as a variable representing economic boom whilst price delivered Tax (VAT) and non-oil earnings (tax) have been used to measure tax revenue. The result showed non-oil profits having a huge impact on the gross domestic product but cost-brought tax having damaging affiliation and statistically insignificant for the overview period. consequently, it becomes concluded that sales from taxation have a fine impact on the economic boom of Nigerians and consequently recommended for the country to increase its revenue assets out of crude oil to other sectors of the financial system which include agriculture and extractive industries.

Echekoba and Amakor (2018) examined the effect of presidency expenditure inclusive of expenditure on widespread administration, defense, schooling, and health on the GDP of Nigeria (1983-2016) the work identifies that despite the continuous increase in government expenditure, there is nonetheless persistent monetary backwardness in Nigeria. The findings revealed that spending on fashionable management has a positive and widespread relationship with economic growth; spending on defense has a poor but significant relationship with GDP; spending on education has a nice and surprisingly widespread relationship with monetary growth, and spending on health has a nice but insignificant relationship with GDP.

Uzoka and Chiedu (2018) studied the impact of revenues from taxation at the increase of the economic system in Nigeria, between 1997-2016. The unit root check result found out earnings from organization tax, customs, and excise responsibility and profits from the sale of capital belongings are desk-bound at a level. At the same time real Gross home Product (RGDP), Petroleum Profit Tax (PPT), cost introduced Tax (VAT), and RDT are desk-bound before everything is ordered, that is after the primary distinction. The co-integration exams confirmed that a protracted-run courting existed between the monetary boom and RGDP, PPT, VAT, and RDT CIT, CED. The results acquired from the analysis of the model discovered CGT and EDT have no main impact on the financial increase however there may be a significant impact from PPT, CIT, VAT, and CED on the increase of Nigeria's financial system. The take a look at recommended boosting the growth of Nigeria's financial system, the administration wishes to make sure the tax sales generated is channeled toward building capital inventory that could create more jobs to produce more income to the government thru different forms of taxes. Although there has been a huge connection between sales from the non-oil area and Nigeria's economic increase, there's no similar connection between income from agency taxation and Nigeria's financial boom. The take a look at suggested the management's enterprise to offer welfare services and services throughout the nation. additionally, the authorities have to intensify efforts to complete the overhaul of the tax machine to ameliorate the incidence of tax evasion and avoidance. Also to enlarge the authority's tax base, efforts have to be made in growing conducive surroundings for private companies, creativity, and employment technology as well as inspire made-in-Nigeria items using tax proceeds.

According to Odhiambo and Olushola (2018), throughout Nigeria, the relationship between monetary expansion and taxation was investigated. The taxation special model was evaluated using ordinary least squares (OLS). It was determined that taxation had a negative impact on economic growth. The report suggested that government create an adequate tax system to broaden the tax base, as well as an upward revision of tax rates to boost the tax effort and ensure that taxing makes the most appropriate contribution to economic development and growth. However, in contrast to contemporary research, this examination became particularly economic growth and taxation are the only things that may be regulated.

Oyebanji, Adeigbe, Akintoye, and Ogundajo (2019) investigated the impact of actual region output and taxable revenues in Nigeria. Trend evaluation, descriptive information, and stationary assessments of Augmented Dickey-Fuller (ADF) for information evaluation were all used in secondary statistics. After confirming the positive influence of estate on tax revenues, the study recommended that governments encourage efforts to stimulate real estate growth to obtain a more long-term increase in tax revenue. However, the influence of actual sector output on tax profits was investigated, with the result being irrelevant to tax coverage implementation.

Uket, Wasiu, and Etim (2020) explored the effect of 3 tax income streams – profits tax from groups' earnings, income tax from petroleum businesses' income, and value delivered Tax on economic improvement represented by using Gross home Product (at present-day basic costs) growth for the period 1994 to 2018. The study applied the OLS statistical device with the help of SPSS 2020. The study discovered a fine dating with a coefficient of determination of ninety-nine. 2% of the variation in economic development is due to the tax profits streams studied. additionally, even though the observe found out the lifestyles of the substantial effect of taxes from groups' income and fee delivered Tax on Gross home Product increase, there may be little or no good-sized effect of taxes on income of Petroleum corporations on Gross home Product boom in Nigeria due to restricting using business enterprise of Petroleum Exporting International locations production ceiling on Nigeria's manufacturing/sales and the worldwide charge shocks of crude oil over the last decade. Additionally, they take a look at discovered taxpayers' apathy to tax fees and the presence of tax leakages due to corruption and administrative inefficiencies with the aid of the tax government.

Abdulkarim and Saidatulakmal (2020) On a disaggregated level, researchers looked into the impact of financial coverage factors on private investment in Nigeria. The Autoregressive disbursed Lag technique was utilized in the empirical study, which allows for simultaneous estimation of short- and long-run relationships between variables while minimizing worries about excluded variables and autocorrelation lifetimes. The technique was used to time collecting records collected using a quantitative and ex-post facto research design from 1980 to 2017. The findings of the boundary checks revealed that private investment and its chosen determinants had a co-integrating relationship. According to the evidence, various additions to direct taxes hindered the growth of private investment, whereas indirect taxes supported it. Government capital spending had a positive and statistically significant impact on private investment, but public external debt had a negative long-term and short-term impact on non-

public funding. The research recommended that tax laws be combined to minimize multiple taxes and the high cost of doing business, as well as prioritizing infrastructure investment to stimulate personal investment and ensure long-term growth.

Adejare and Olatunji (2021) looked at Non-oil taxes' impact on Nigeria's foreign direct investment and financial offerings. VECM, Johansen co-integration, and Granger causality tests were used to examine the causal linkages between foreign direct investment, economic offerings, value-added tax, company earnings tax, capital gain tax, custom and excise taxes, and education tax. Consequences revealed that price-delivered tax had a positive broad impact on financial services but a negative impact on foreign direct investment. Moreover, fee-delivered tax granger causes overseas direct investment and economic offerings. It's also exposed that organisation income tax and capital benefits tax possessed brief-run and long-run terrible sizable effect on overseas direct funding however fine to have an impact on financial offerings.

Kenechukwu, Chidi-Okeke, Chris-Ejiogu, and Awe (2021) investigated the causal dating between monetary coverage and personal funding in Nigeria (1986-2019) the use of secondary information from the Statistical bulletin of the relevant financial institution of Nigeria. The studies work used the Granger Causality techniques to check the causal courting between the impartial variables (Tax revenue, Oil revenue, overall expenditure, and Public debt) on the established variable (personal investment) while VAR became used to check the quick-run relationship. The study discovered that monetary coverage devices granger causes non-public funding in Nigeria within the length of the study. The observe, consequently, advocates that the government must as of necessity liberalize or privatize NNPC and the power area as those important sectors will help the growth of the non-public sectors and reduce unemployment in the united states. Nigerian government ought to grow its spending on infrastructure, particularly capital tasks within the financial system to bridge the infrastructure gap within the country. The availability of tax incentives to private sectors through the government has to be endorsed, as this will assist the increase of personal funding in the United States of America. Additionally, restructuring of the economic system through the production of what we want has to be advocated via the government because exporting commodities (raw cloth) means exporting jobs.

Methodology

Research Design, Method of Data Collection and Analysis

The study followed a time collection ex-submit facto research layout. Time series ex-put up facto research design is a technique of studies that surely tested hypotheses regarding cause-and-impact relationships, in addition to combining the theoretical attention with empirical remark (Kothari, 2004). The facts for this study are secondary and as such, was effectively sourced the use of the secondary methods of records collection. The facts turned into obtained from principal financial institution guides, statistical bulletins, and other applicable publications. in this study, the monetary policy changed into captured through authorities overall expenses (recurrent and capital expenditures), authorities taxes, authorities total money owed (home and overseas borrowings); whilst non-public quarter funding is the overall

financial values of private area investment in Nigeria, and the information had been sourced from CBN annual reports and CBN statistical bulletin. This study used econometrics gear of evaluation within the investigation of the relationship amongst monetary variables, the impact of the fiscal policy on private region investments in Nigeria, as well as the correlation between financial indicators. Autoregressive disbursed Lag (ARDL) and errors Correction model (ECM) was used to examine the relationship and influence of monetary policy on personal quarter investments in Nigeria, based on the study's inquiry and objectives. Therefore, the Autoregressive distributed lag (ARDL) became used to test the lengthy-run courting between variables' impact of economic policy on private area investments in Nigeria. On the side of theories, present-day theories on economic policy and personal quarter investments had been reviewed those will deliver the look at a good framework for evaluation.

Model Specification

This study adopted the model of the paintings of Nwosa, Adebisi, and Adedeji (2013) which tested the connection among components of public spending and private investments in Nigeria, and the version became modified for the have a look at. Assuming a linear relationship between fiscal policy and sustainable housing improvement in Nigeria, government taxation, government external debt, government budget deficit, government debt servicing, government capital and recurrent expenditure in Nigeria as unbiased variables, and sustainable housing improvement in Nigeria as the dependent variable. The practical form of the model is precise as:

$$SHDN_t = f(GTRN_t, GTDN_t, GTEXP_t) \quad (1)$$

Therefore, explicitly the model becomes:

$$SHDN_t = \beta_0 + \beta_1 GTRN_t + \beta_2 GTDN_t + \beta_6 GTEXP_t + \mu_t \quad (2)$$

Where;

$SHDN_t$ is a sustainable housing development in Nigeria at time t, $GTRN_t$ is government total revenue in Nigeria, $GTDN_t$ is government total debt in Nigeria, $GTEXP_t$ is government total expenditure at the time t and $\beta_0, \beta_1, \beta_2,$ and β_3 are parameters that need to be calculated, μ_t is the white noise error term. The following is the specification of the Autoregressive Distributed Lagged (ARDL) model that was used to investigate the influence of fiscal policy on private sector investments in Nigeria:

$$\begin{aligned} \Delta SHDN_t = & \beta_0 + \sum_{g=1}^k \beta_{1g} \Delta SHDN_{t-g} + \sum_{h=1}^l \beta_{2h} \Delta GTRN_{t-h} + \sum_{l=0}^m \beta_{3l} \Delta GTDN_{t-l} + \sum_{j=0}^n \beta_{4j} \Delta GTEXP_{t-j} \\ & + \alpha_5 SHDN_{t-1} + \alpha_6 GTRN_{t-1} + \alpha_7 GTDN_{t-1} + \alpha_8 GTEXP_{t-1} + \varepsilon_t \end{aligned} \quad (3)$$

As a result, the long-run impact of fiscal policy on sustainable housing development in Nigeria was estimated and analyzed using equation (3). While the Error Correction Model (ECM) used in this study is specified as follows:

$$\Delta SHDN_t = \beta_0 + \sum_{g=1}^k \beta_{1i} \Delta SHDN_{t-i} + \sum_{h=1}^l \beta_{2i} \Delta GTRN_{t-i} + \sum_{i=1}^m \beta_{3i} \Delta GTDN_{t-i} + \sum_{j=0}^n \beta_{4i} \Delta GTEXP_{t-1} + \beta ECM_{t-1} + \varepsilon_t(4)$$

The model above was used to adjust the estimation until the ECM turned negative. The negative sign of the coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

Presentation and Analysis of Data

Descriptive Statistics

Table 1: Descriptive Statistics

	SHDN	GTRN	GTDN	GTEXP
Mean	72.46514	4119.834	876.3974	2562.973
Median	48.34000	2575.100	161.4100	1225.990
Maximum	218.9500	11116.85	6171.800	10164.60
Minimum	0.660000	12.60000	-32.05000	16.22000
Std. Dev.	69.75890	3952.264	1511.758	2879.284
Skewness	0.597826	0.417117	2.160321	1.132211
Kurtosis	2.070392	1.640826	6.870685	3.384341
Jarque-Bera	3.345057	3.708980	49.07314	7.693177
Probability	0.187772	0.156533	0.000000	0.021352
Sum	2536.280	144194.2	30673.91	89704.07
Sum Sq. Dev.	165454.4	5.310008	77704031	2.820008
Observations	35	35	35	35

Source: Author's computation, (2022).

Table 1 provides summary information of the variables underneath the study, and every variable is provided to have 35 observations. The variables are; Sustainable Housing Development in Nigeria (SHDN), Government Total Revenue in Nigeria (GTRN), Government Total Debt in Nigeria, and Government Total Expenditure (GTEXP). The individual Normality test of the Jarque Bera approach suggests that Sustainable Housing Development in Nigeria (SHDN) and Government Total Revenue in Nigeria (GTRN) are commonly disbursed over the length below exam, while the records received on Government Total Debt in Nigeria and Government Total Expenditure (GTEXP) do now not skip the normality test for the reason that their J-B probability values are much less than 5 percent level of significance. Comparably, the Kurtosis values of those variables show that the Sustainable Housing Development in Nigeria (SHDN) and Government Total Revenue in Nigeria (GTRN) are platykurtic, given that their cost is less than 3 (3), that is $ok < 3$. While on the other hand, Government Total Debt in Nigeria and Government Total Expenditure (GTEXP) are “Mesokurtic” as their Kurtosis value is greater than 3 i.e > 3 .

Trend and Graphical Analyses

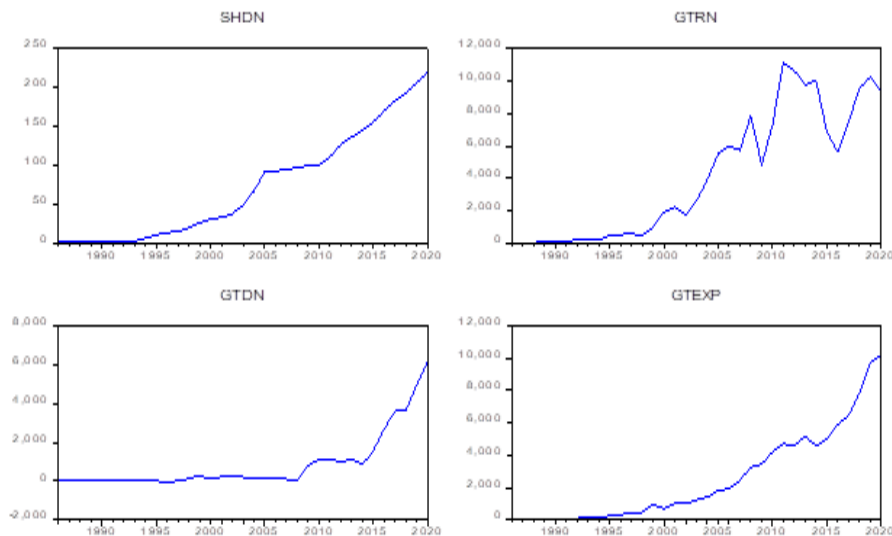


Figure 1: Trends or the pattern of movements of the variables

Figure 1 provides the traits or the pattern of movements of the variables of interest: Sustainable Housing Development in Nigeria (SHDN), Government Total Revenue in Nigeria (GTRN), Government Total Debt in Nigeria (GTDN), and Government Total Expenditure (GTEXP). Every one of the variables indicates fluctuating patterns at special durations in reaction to the different factors each endogenous and exogenous which may also have had attendant effects on them over the years. But, government domestic debts and sustainable housing improvement appear pretty stable in their upward movements over the period under review. at the same time as others reflect shocks at one point or any other.

Unit Root Test

Table 2: Summary of Unit Root Test

Variables	5% level	Critical ADF	Order of Integration
SHDN	-3.720601	-3.552973	1(1)
GTRN	-5.411820	-3.552973	1(1)
GTDN	-3.775103	-3.552973	1(1)
GTEXP	-6.794682	-3.574244	1(0)

Source: Author's computation, (2022)

Table 2 above shows the stationarity properties of each variable under have a look at the usage of the Augmented Dickey-Fuller approach. The authority's capital expenditure changed into stationary at a level with a 5 percent stage of significance. whilst, authorities recurrent expenditure, government domestic debts, government money owed servicing, authorities external money owed, authorities Tax, and Sustainable Housing development have been stationary at the beginning difference with a five percent stage of importance. The output shows the suitability of the Autoregressive dispensed Lag model (ARDL) as the correct

lengthy-run and short-run regression technique of analysis for this take a look at in view that their stationarity properties reveal an aggregate of $I(0)$ and $I(1)$ i.e. they are either incorporated of order zero(0) or incorporated of order one(1). Contrary to the orthodox methods of Johansen's check (Johansen 1991), and Vector Autoregression, in this example, the ARDL approach of regression evaluation may be employed to discover the long-run and quick-run relationship within the dynamic version, having explored and happy the stationarity requirement of the explanatory and explained variables. we will therefore continue to explore if the long-run dating is established the various variables with the aid of carrying out the F-Bounds check for cointegration. The end result of the ARDL long term Bounds check is likewise offered in Table 2.

F-Bounds Test for Cointegration in ARDL

Table 3: ARDL Bounds Test of Co-integration

Null Hypothesis: No long-run relationships exist		
	Model II	
Test Statistic	Value	K
F-statistic	48.36300	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.10	3.87
2.5%	3.55	4.38
1%	4.13	5.00

Source: Output from E-views 9.0 (2022)

From table 3, consistent with the submission of Pesaran et al. (2001), it is discovered that the F-statistic cost (23.03587) is better than the asymptotic values in any respect degrees of confidence including the top certain at 1% degree of importance or 99% degree of self belief. The result indicates proof that the variables of interest have a protracted-run dating or are cointegrated. It implies the lifestyles of long-run joint reversion of the variables to the location of equilibrium. Additionally, this result justifies the suitability of the ARDL model unique for this observe.

The Regression Results

Table 4: ARDL Estimates of Financial Sector Development in Nigeria

<i>Short-run estimates</i>	
Dependent variable	Δ
ECM_{t-1}	-0.724**(0.0000)
$\Delta SHDN (-1)$	0.947**(0.0060)
$\Delta GTRN$	0.00476** (0.0011)
$\Delta GTDN$	-0.0085(0.1263)
$\Delta GTEXP$	0.00399(0.3786)
<i>Long-run estimates</i>	
Dependent variable	
$GTRN$	0.0176(0.0078) *
$GTDN$	0.0183(0.4390) *
$GTEXP$	-0.0278(0.3089) *
C	4.459(0.1718) *
Adjusted R^2	0.99
F-stat	490.7242 [0.0001]
<i>Note: ***, **, * indicate the statistical significance of coefficients at 1%, 5%, and 10% respectively, and the values in parentheses and block brackets are the probabilities</i>	

Source: Author's Computation, 2022

Discussion of Regression Results

Table 4. shows the results of the Error Correction Model (ECM) of the study and after examining the long-run impact of the independent variables in the model of the fiscal policy on sustainable housing development in Nigeria, using the ARDL model, it is necessary to test for short-run impact and speed of adjustment of the economic variables. The result shows that the ECM parameters were negative (-) and significant which are given -0.724. This means that 72percent disequilibrium in the previous period is being corrected to restore equilibrium in the current period in the respective models. It has been established that the variables are cointegrated and also have a short-run relationship and impact established from the ECM.

The result shows that the lagged value sustainable housing development in Nigeria that is SHDN (-1) has a positive impact on the current value of the sustainable housing development in Nigeria and the impact was statistically significant in explaining any variation in sustainable housing development in Nigeria. Also, the short-run result shows that the Government Total Revenue in Nigeria (GTRN) has a positive impact on sustainable housing development in Nigeria given the coefficient value of 0.00476 and based on probability value of 0.0011 the Government Total Revenue in Nigeria (GTRN) has a positive and significant impact on sustainable housing development in Nigeria at a 5% level of significance. On the other hand, Government Total Debt in Nigeria (GTDN) has a negative impact on sustainable housing development in Nigeria given the coefficient value of 0.0085 and based on a probability value of 0.1263, Government Total Debt in Nigeria (GTDN) has insignificant impact on sustainable housing development in Nigeria at a 5% level of significance. However, Government Total Expenditure (GTEXP) has a positive impact on sustainable housing development in Nigeria given the coefficient value of 0.00399 and based on a probability value

of 0.3786, Government Total Expenditure (GTEXP) has insignificant impact on sustainable housing development in Nigeria at a 5% level of significance.

The ARDL long-run result shows that Government Total Revenue in Nigeria (GTRN) has a positive impact on sustainable housing development in Nigeria given the coefficient value of 0.0176 and based on probability value of 0.0078 the Government Total Revenue in Nigeria (GTRN) has a positive and significant impact on sustainable housing development in Nigeria at a 5% level of significance. However, Government Total Debt in Nigeria (GTDN) has a positive impact on sustainable housing development in Nigeria given the coefficient value of 0.0184 and based on a probability value of 0.439, Government Total Debt in Nigeria (GTDN) has insignificant impact on sustainable housing development in Nigeria at a 5% level of significance. On the other hand, Government Total Expenditure (GTEXP) has a negative impact on sustainable housing development in Nigeria given the coefficient value of 0.0278 and based on a probability value of 0.3089, Government Total Expenditure (GTEXP) has insignificant impact on sustainable housing development in Nigeria at a 5% level of significance.

Normality Tests

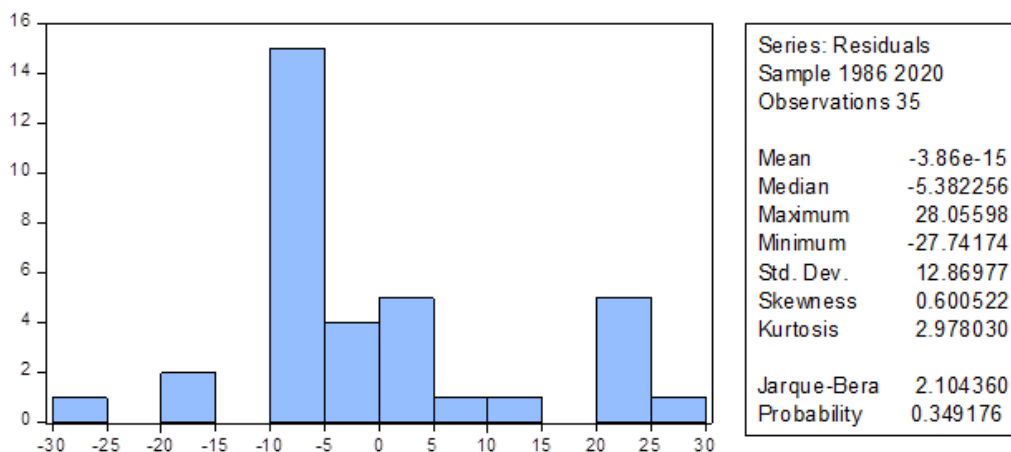


Figure 2: Normality Tests

The normality test is conducted to ensure that the data employed in this study are normally distributed. Observing from the normality diagram in Figure 2 as well as the Jarque-Bera value of 2.10 and its corresponding p-value of 35 % which is greater than 5% significant level, it confirms that the data are normally distributed.

Test for Heteroskedasticity

Table 5: Test for Heteroskedasticity

F-statistic	0.923314	Prob. F(23,3)	0.6240
Obs*R-squared	23.65789	Prob. Chi-Square(23)	0.4229
Scaled explained SS	0.378337	Prob. Chi-Square(23)	1.0000

Source: Author's Computation, 2022

Table 5 shows the test for Heteroskedasticity. It indicates that the variables are free from the problem of Heteroskedasticity since the p-values of F-statistics and Obs*R-squared of 0.6240 and 0.4229 respectively are greater than the 5% significance level. This outcome is further strengthened by the p-value of 1.0000 for the Scaled explained SS which also suggests the absence of Heteroskedasticity.

Conclusion and Recommendations

Based on the specific objectives of the study which is to assess the impact of government total revenue on sustainable housing development in Nigeria, investigate the impact of government total debts on sustainable housing development in Nigeria and evaluate the government's total expenditure impact on sustainable housing development in Nigeria, the results of the long-run and brief-run evaluation at the dynamic effect of the selected macroeconomic variables on sustainable housing improvement in Nigeria as supplied in Table 4 shows that government total revenue and government total debts have positive impact on sustainable housing development in Nigeria. The Adjusted R-Squared of 99 percent revealed that fiscal policy indicators have positive impact on sustainable housing development in Nigeria. Also, the F-statistics of 490.7242 shows the model has a good fit in explaining the variation sustainable housing development in Nigeria.

Recommendations

The following recommendations were made from the findings.

- i. Government should evaluation the revenue policy to increase the revenue generation in Nigeria to enhance sustainable housing improvement in Nigeria.
- ii. Government must reduce the use of debt on unproductive monetary activities to sustainable housing improvement in Nigeria.
- iii. The government expenditure becomes undoubtedly related to sustainable housing improvement in Nigeria. Therefore, the government should boom and monitor authorities capital costs mainly to improve the infrastructure development for improved sustainable housing development in Nigeria.

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APPENDIX I

Table 1: Data for Regression

Year	SHDN	GTRN	GTDN	GTEXP
1986	0.66	12.60	8.25	16.22
1987	0.67	25.38	5.89	22.02
1988	0.70	27.60	12.16	27.75
1989	0.97	53.87	15.13	41.03
1990	1.06	98.10	22.12	60.27
1991	1.25	100.99	35.76	66.58
1992	1.51	190.45	39.53	92.80
1993	2.26	192.77	65.16	191.23
1994	6.45	201.91	70.27	160.89
1995	10.54	459.99	-1.00	248.77
1996	13.67	523.60	-32.05	337.22
1997	14.30	582.81	5.00	428.22
1998	19.68	463.61	133.39	487.11
1999	25.65	949.19	285.10	947.69
2000	30.60	1906.16	103.78	701.05
2001	32.80	2231.60	221.05	1018.00
2002	37.53	1731.84	301.40	1018.18
2003	48.34	2575.10	202.72	1225.99
2004	66.76	3920.20	172.60	1426.20
2005	92.00	5547.50	161.41	1822.10
2006	92.59	5965.10	101.40	1938.00
2007	94.40	5727.51	104.86	2450.90
2008	97.11	7866.60	47.38	3240.82
2009	99.76	4844.59	809.99	3452.99
2010	100.00	7303.67	1105.38	4194.58
2011	110.59	11116.85	1158.52	4712.06
2012	126.60	10654.75	975.75	4605.39
2013	136.14	9759.79	1152.49	5185.32
2014	144.99	10068.85	835.71	4587.39
2015	155.52	6912.50	1557.83	4988.86
2016	170.09	5616.40	2673.84	5858.56
2017	183.02	7445.00	3609.37	6456.70
2018	193.05	9551.80	3628.10	7813.74
2019	206.07	10262.30	4913.82	9714.84
2020	218.95	9303.20	6171.80	10164.6

Source: CBN Statistical Bulletin, December 2020