Government Capital Expenditures and Balance of Payment in Nigeria: 1990-2022

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A b s t r a c t

The government has invested so much in capital projects with the aim of increasing production and encouraging innovation in local production to meet international standards. Despite these policies, the balance of payments in Nigeria still remains unencouraging. In light of this, the study empirically analyses the impact of government capital expenditure on the balance of payments, covering the period 1990–2022. The study made use of ex-post facto research and time series data. The autoregressive distributed lag (ARDL) and error correction model (ECM) methods were used to examine the short-run and long-run impact and relation between government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria, government transfer capital expenditure in Nigeria, and the balance of payment in Nigeria. The result of the study showed that in the short run, government administration capital expenditure in Nigeria (GACE) and government transfer capital expenditure in Nigeria. (GTCE) are positively insignificant on Balance of Payment in Nigeria (BOPN), while government economic services capital Expenditure in Nigeria (GECE) and government social and community services capital expenditure in Nigeria (GSCE) have a negative and insignificant impact on balance of payment in Nigeria (BOPN). On the other hand, the long-run results showed that GACE, GECE, and GTCE have a positive and insignificant impact on the balance of payments in Nigeria (BOPN), but GSCE has a negative and significant impact on the balance of payments in Nigeria (BOPN). The study suggests that while short-term government investments in administration and transfer activities do not significantly affect Nigeria's balance of payments, long-term investments in economic services and administrative areas show a positive yet insignificant impact. However, long-term investment in social and community services negatively impacts the balance of payments. Therefore, the study recommended that government should reassess and prioritize spending, increase efficiency in public spending and encourage private sector participation.

Background to the Study

Government expenditure refers to the spending made by a country's government on collective needs and wants, such as pensions, provisions, and infrastructure. It was limited until the 19th century when laissez-faire philosophies believed that money left in private hands could bring better returns. In the 20th century, John Maynard Keynes argued that public expenditure plays a role in determining income and distribution in the economy, and governments at all levels need to raise revenue from various sources to finance public-sector expenditures. The balance of payments is a global concept representing the adjustments and transfers of money. A nation's balance of payments status has been under constant pressure since the 80s, with various reasons for this undue strain on the balance of payments position. Nigeria's economy is a "consuming economy," dominated by oil, which is used to support and finance the government's consumption expenditure. The relationship between public spending and growth has been a topical issue between Wagnerians and Keynesians, with Wagner showing that public expenditures are endogenous to economic growth and Keynes arguing that the causality runs from public expenditure to national income. Achieving sustained economic growth is a major goal for most economies, including developing countries like Nigeria (Rogers, 2018).

Government capital expenditures in Nigeria since 1990 have fluctuated due to various factors including oil revenues, political changes, and economic reforms. Generally, capital expenditure refers to government spending directed towards the acquisition and maintenance of long-term assets such as infrastructure, buildings, and equipment. In Nigeria, significant portions of capital expenditures have historically been allocated to sectors such as infrastructure, education, health, and defense. From the early 1990s, Nigeria experienced periods of military rule which affected its economic policies and capital expenditures. The return to democracy in 1999 led to a more structured approach to budgeting and capital expenditure. However, corruption, mismanagement, and fluctuating oil prices have often undermined effective capital allocation and utilization (Okonkwo *et al.,* 2023).

In the 2000s, Nigeria benefited from high oil prices and debt relief, which allowed for increased capital expenditures in several sectors. However, the dependence on oil revenue has also meant that drops in oil prices directly affect capital spending. For instance, the global financial crisis of 2008 and the oil price slump in 2014-2016 led to significant cuts in capital expenditures. More recently, the Nigerian government has attempted to diversify its economy and reduce its dependency on oil revenues. This includes increasing capital expenditure allocations towards non-oil sectors to stimulate growth and development. However, challenges such as inflation, currency devaluation, and insecurity have continued to affect the actual implementation of capital projects.

The balance of payments (BOP) in Nigeria since 1990 has also been influenced heavily by the oil sector, reflecting the country's status as a major oil exporter. The BOP is a financial statement that summarizes a country's transactions with the rest of the world over a period, including exports, imports, and financial transfers (Opusunju & Akyuz, 2022).

During periods of high oil prices, Nigeria often experiences a positive balance of payments, with high export earnings leading to surpluses. However, during periods of low oil prices, the balance of payments can quickly shift to a deficit due to reduced export revenues. Additionally, high levels of importation, especially of refined petroleum products and machinery, have historically strained Nigeria's balance of payments. The Nigerian government has implemented various policies to improve the balance of payments, such as attempting to diversify exports, improve local production capacities, and manage foreign exchange reserves more effectively. Despite these efforts, challenges such as economic instability, fluctuations in global oil prices, and internal issues continue to affect the country's balance of payments. Despite the continuous rise in Nigerian capital expenditure, Nigeria continues to face significant challenges in terms of pervasive infrastructure, inadequate infrastructure, and basic amenities, especially in rural areas. Thus, the paper examined government capital expenditures and balance of payment in Nigeria between 1990-2022. To achieve this objective, the following hypotheses were stated and tested.

H_{01}: Government administration capital expenditure has no significant impact on the balance of payment in Nigeria.

H_{02}: Government economic services capital expenditure has no significant balance of payment in Nigeria.

H_{03}: Government social and community services capital expenditure has no significant impact on the balance of payment in Nigeria.

H_{04}: Government transfer capital expenditure has no significant impact on the balance of payment in Nigeria.

Literature Review
Conceptual Review
Capital expenditure is the cost of acquiring and upgrading fixed assets, including intangible ones, to create future benefits. Economic theory suggests that public expenditure should align with future economic growth and well-being. Expansion of government expenditure can positively contribute to economic growth (Aigbedion & Ataboh, 2024). Government expenditure can be categorized into recurrent and capital expenditure, which includes administration, defense, internal security, economic services, and social and community services. Addressing these problems is crucial for government to formulate and implement policies that promote sustainable economic growth and development. The ideal size of government is not the issue, but rather examining cost and benefit to determine resource allocation. While the Balance of Payments (BoP) is a crucial record of economic transactions between a country and the rest of the world, reflecting a nation's economic health and position in global trade and finance (Harcourt, 2017). It consists of two main accounts: the current account and the capital and financial account. The current account records transactions related to import and export of goods and services, income from investments, and unilateral transfers. The capital and financial account documents capital transfers and acquisition or disposal of non-produced assets. The BoP maintains a balance due to the accounting principle that

every transaction has two sides with equal credit and debit. A surplus or deficit in the BoP can have significant implications for a country's economy, such as currency value, borrowing, or foreign exchange reserves (Olawale, 2018).

Empirical Review

Okonkwo *et al.,* (2023) examined the effects of government capital expenditure in its disaggregated form (administration, social and community services, economic services, transfers, and government deficit) on Nigeria's economic growth rate from 1981 to 2021. The study used the autoregressive distributed lag model and the error correction model, which showed a strong and positive association between administrative and economic services and the rate of economic growth in Nigeria. The study recommended that capital expenditures on economic services and administrative services should receive more attention. While Okeke and Okoye (2023) examined the nexus between Nigerian trade balance and economic growth, which was anchored on the theory of exchange rate using the Granger causality test and the augmented dickey-fuller test, which revealed that the values of TTB, OTB, and NOTB had no significant effect on gross domestic product (GDP). Hence, the study concluded that trade balance had no significant effect on economic growth in Nigeria within the period, recommending that the government should take international trade more seriously and pursue an export-oriented economy.

Sultani and Faisal (2023) also examined the impact of macroeconomic indicators on the balance of payments. Empirical evidence from Afghanistan. Where quarterly data from the second quarter of 2004 to the fourth quarter of 2020 was obtained. The Vector Error Correction Model (VECM) and the Johansen co-integration test were used to explore the variables. The findings revealed that balance of trade (BOT), foreign direct investment (FDI), and exchange rate are significant determinants of Afghanistan's BOP in the long run. More specifically, BOT and FDI positively impact the BOP, whereas the effect of the exchange rate on the BOP is found to be negative. Yet, inflation has an insignificant impact on the BOP. Though all variables have an insignificant impact on the BOP in the short run, the relevant policy measures ought to consider improvement in BOT, promoting FDI, and exchange rate stability to ensure synchronised improved BOP and economic growth.

In another similar study, Agu *et al.,* (2023) investigated the impact of non-oil exports on the Nigerian balance of payment between 1981 and 2020 using the autoregressive distributed lag (ARDL) and error correction model (ECM). The findings of the study showed that non-oil exports had a strong positive impact on Nigeria's balance of payment within the period under study, both in the short and long run. It showed that a percentage increase in non-oil exports increases the balance of payment (surplus) by 31.47% in the long run., there is a need to shift attention to the non-oil sector, which has always been the main source of her foreign exchange earnings before the discovery of crude oil. While Adelegan and Abraham (2022) examined the long-term factors that influence Nigeria's balance of payments using the autoregressive distributed lag model (ARDL) to investigate. The long-term results from the ARDL regression showed that the exchange rate coefficient was negative, whereas the short-term results showed a positive value.

Also, the coefficients of FDI, GDP growth, interest rates, and crude oil prices were positive and significant. A strong case can be made for governmental intervention to improve economic productivity, as evidenced by this study. The government should also enhance safety and security and build a sense of belonging in the Niger Delta to promote peace and ease of doing business in the petroleum industry.

Opusunju and Akyuz (2022) investigated the causal effect between the balance of payment and foreign direct investment in the oil and gas sector in Nigeria. The study used an ex post facto research design. The study employed various procedures in analysing the data, such as the correlation matrix, unit root test, co-integration, and vector error correction model. The study found that causality ran from the balance of payment to multinational corporations in the oil and gas sector in Nigeria in terms of foreign direct investment. The study recommended that the balance of payment policy in oil and gas should be formulated to encourage the inflow of foreign direct investment in the sector in Nigeria. The government of Nigeria should seek the assistance of the Organisation of Petroleum Exporting Countries (OPEC) to direct investors in oil and gas to refine the oil and gas in Nigeria without exporting the raw materials to their home country. Duruechi and Chigbu (2022) investigated the government capital expenditures and economic development paradigm in Nigeria between the periods 1990 and 2020 using the ordinary least squares (OLS) statistical technique for data analysis. Results from the individual statistical tests revealed that except for government capital expenditure on social and community services, government capital expenditure on economic services, administration, and transfers has insignificant negative and positive effects, respectively, on per capita income in Nigeria.

Ikubor *et al.,* (2022) examined the impact of government capital expenditure in the economic services sector on Nigeria's economic growth between 1981 and 2020 using the ARDL model. revealed that both Capital Expenditure on Agriculture and Capital Expenditure on Manufacturing, Mining, and Quarrying have a positive relationship with GDP and, at the 5% significant level, are statistically significant. The study therefore recommended that since spending in the areas of infrastructural facilities is a good determinant of output growth, the government should ensure that basic infrastructural facilities needed in these sectors (agriculture and manufacturing, mining and quarrying) such as good roads, storage facilities, stable electricity, and so on, are provided. Another researcher, Kingia and Muba (2021), analysed the assessment of the determinants of balance of payment in Tanzania between 1990 and 2020. The study performed descriptive statistics and the ordinary least squares regression technique, and the results found that foreign direct investment and the inflation rate have a negative and significant influence on the balance of payment, whereas the exchange rate has a positive and insignificant influence on the balance of payment, and the interest rate has an insignificant negative influence on the balance of payment. Finally, we recommend that a country introduce relative import prices to improve the inflows of FDI and have a favourable balance of payments in a country like Tanzania. Adegboyo *et al.* (2021) examined the impact of fiscal, monetary, and trade policies on Nigerian economic growth from 1985 to 2020 using

ARDL. The ARDL long-run result showed that fiscal policies stimulate economic growth, while, on the contrary, trade policies deter Nigerian economic growth. The short-run result showed that the fiscal policies have an inconsistent impact on Nigerian economic growth. The government should review its trade policies to reduce imports by encouraging the consumption of local products and motivating exporters of goods (raw materials) to refine the products before exporting them.

Joy *et al.,* (2021) examined the impact of public capital expenditure on the inflation rate in Nigeria. Descriptive statistics and the ARDL (autoregressive distributed lag) approach were used for cointegration and regression analysis. The result found that public capital expenditure is negatively and statistically significant (tcal = -2.903) in influencing the inflation rate in Nigeria. This outcome is highly directional in the sense that prudent and productive spending will always subdue inflation in any economy; therefore, this study recommended that the government should increase its investment in production sectors and encourage skilled and willing citizens to participate since this would reduce the expenses being incurred on business as a result of low currency value and raise the profitability of firms. Looking at the work of Okpabi *et al.* (2021), where examined the impact of government expenditure on economic growth in Nigeria for the period 1984–2015 with a view to re-assessing the Keynesian and Endogenous Growth Models proposition that public expenditure stimulates economic growth. The study employed the Johansen co-integration and error correction models. The empirical results showed that public (recurrent and capital) expenditure has a significant positive impact on the growth of the economy in the long run and an insignificant negative impact on the Nigerian economy in the short run. The study therefore recommended that the Nigerian government readjust spending priorities to accommodate more capital expenditure and channel increased expenditure into some critical sectors of the economy, such as health, power, education, and general infrastructure, which are fundamental to maximizing government expenditure in Nigeria.

Efuntade *et al.,* (2020) examined the relationship among capital expenditure, taxation, and economic growth in Nigeria using the ARDL cointegration test, and an error correction model. The results confirmed the existence of a relationship among capital expenditure, PPT, CIT, VAT, and real gross domestic product. The result indicated that in the long run, capital expenditure and PPT had a significant positive effect on economic growth, while CIT and VAT had a negative relationship with economic growth, recommending that the government enhance fiscal synchronization, that is, decisions about capital expenditure and taxation should be made simultaneously to enhance economic growth and Bureau (2020) also examined the effect of government expenditure on the economic growth of Nigeria using the analysis of variance (ANOVA). The findings revealed that while capital expenditure has no significant impact on gross domestic product in Nigeria, recurrent expenditure has a significant impact on gross domestic product in Nigeria, thus buttressing the need for encouragement as well as an increase in private sector investment.

Inimino *et al.,* (2020) investigated the effect of fiscal policy on the balance of payments in Nigeria. The data for the study were obtained from the statistical bulletin of Nigeria's apex bank, spanning 1980 to 2017 using the ARDL technique. The ARDL results showed that in the long run, corporate income tax, government capital expenditure, and external debt have a positive and significant effect on Nigeria's balance of payments. The study concluded that fiscal policy had a meaningful effect on Nigeria's balance of payments during the period of study. This means that fiscal policy is effective in achieving a satisfactory balance of payments in the country. Edeh *et al.,* (2020) also evaluated the impact of government expenditure on agriculture on agricultural sector output in Nigeria from 1981 to 2018 using ARDL model technique analysis revealing that capital expenditure is positively related to agricultural output, and it is also statistically significant at 5% in the current year (P(t) = 0.0080). It was understood that the impact of capital expenditure on agricultural output begins to weaken after one year (P(t) = 0.0815). However, recurrent expenditure has a negative and insignificant impact on agricultural output (P(t) = 0.6657). They recommended that governments at all levels intensify and increase expenditure on capital items in the agriculture sector. The procurement of capital expenditure by the government should be effectively monitored.

Theoretical Framework
The Keynesian fiscal policy model, based on the theories of British economist John Maynard Keynes, suggests that government intervention through public policies is necessary to achieve full employment and price stability in the economy. Keynesian economics operates on the principle that aggregate demand—total spending in the economy—is the most significant driving force. It advocates for a mixed economy, controlled primarily by the private sector but with substantial government involvement to correct market failures and manage economic cycles. According to Keynesian theory, during times of economic downturns or recessions, there tends to be a fall in aggregate demand leading to increased unemployment and underutilized resources. In such situations, Keynes argued for expansionary fiscal policies, such as increased government spending and tax cuts, to stimulate demand and pull the economy back to its potential GDP, effectively reducing the positive GDP gap which represents the economy operating under its potential level. This approach aims to counteract the reduced spending and investment from the private sector during a downturn.

Conversely, when an economy is overheating and operating above its potential GDP, leading to inflationary pressures, Keynesian economics recommends contractionary fiscal policies. These may include reducing government spending or increasing taxes to decrease aggregate demand, thereby cooling down the economy to a sustainable level without causing significant increases in unemployment. This policy aims to address the negative GDP gap, where the economy operates beyond its full employment level. The relationship between government capital expenditures and the balance of payments in Nigeria can be analyzed through the Keynesian lens. Increased government spending (capital expenditures) can stimulate economic activity, leading to higher employment and production. If this spending is directed towards sectors that increase the country's

exports or reduce imports, it can positively affect the balance of payments by increasing the net exports component of aggregate demand. However, if the increased government spending results in higher imports without a corresponding increase in exports, this can worsen the balance of payments situation.

Methodology
The study employed the ex-post facto research design in obtaining and secondary method of data. The annual time series data from 1990 to 2022 was collected from the Central Bank of Nigeria (CBN) Statistical Bulletin indicators December 2022 provided much of the data.

Model Specification
This study's model is based on Keynesian fiscal policy theory and Adelegan *et al*. (2022) using the Autoregressive Distributed Lag (ARDL) Bounds test for cointegration on the Determinants of Balance of Payments in Nigeria from 1981 to 2019 Presenting the implicit function and model:

$$BOP = \alpha_0 + \alpha_1 RGDP + \alpha_2 EXR + \alpha_3 INTR + \alpha_4 COP + \alpha_5 MRM + \alpha_6 FDI + e_t \qquad (1)$$

Where: BOP = Balance of payments, RGDP = Growth rate of GDP, EXHR = Exchange rate, INTR = Interest rate, COP = Crude oil price, FDI = Foreign direct investments. $\alpha_0 - \alpha_6$ = Parameters to be estimated.

The study modified equation (1) to fit our goals of the studies as specified as;
$$BOPN = f(GACE, GECE, GSCE, GTCE) \qquad (2)$$

Therefore, explicitly the model becomes:
$$BOPN_t = \alpha_0 + \alpha_1 GACE + \alpha_2 GECE + \alpha_3 GSCE + \alpha_4 GTCE + e_t \qquad (3)$$

Where;
$BOPN_t$ is Balance of Payment in Nigeria at time t, $GACE$ is Government Administration Capital Expenditure in Nigeria at time t, $GECE$ is Government Economic Services Capital Expenditure in Nigeria at time t, $GSCE$ is Government Social and Community Services Capital Expenditure in Nigeria at time t, $GTCE$ is Government Transfer Capital Expenditure in Nigeria. at time t while α_0 is Intercept, α_1, α_2, α_3, and α_4 are Slope and ε_t is the Error Terms. The Autoregressive Distributed Lagged (ARDL) model that was used in this study is specified as follows:

$$\Delta bopn_t = \beta_0 + \sum_{i=1}^{q} \beta_1 bopn_{t-1} + \sum_{i=1}^{q} \beta_2 gace_{t-1} + \sum_{i=1}^{q} \beta_3 gece_{t-1} + \sum_{i=1}^{q} \beta_4 gsce_{t-1}$$
$$+ \sum_{i=1}^{q} \beta_5 gtce_{t-1} + \beta_6 \Delta bopn_{t-i} + \beta_7 \Delta gace_{t-i} + \beta_8 \Delta gece_{t-i} + \beta_9 \Delta gsce_{t-i} + \beta_{10} \Delta gtce_{t-i} + \mu_t \qquad (4)$$

Equation (4) was used to examine the short-run and long-run relationship and the impact of government capital expenditures on the balance of payment in Nigeria. While the Error Correction Model (ECM) used in this study is specified as follows:

$$\Delta bopn_t = \beta_0 + \sum_{i=1}^{q} \beta_1 bopn_{t-1} + \sum_{i=1}^{q} \beta_2 gace_{t-1} + \sum_{i=1}^{q} \beta_3 gece_{t-1} + \sum_{i=1}^{q} \beta_4 gsce_{t-1}$$
$$+ \sum_{i=1}^{q} \beta_5 gtce_{t-1} + \beta_6 \Delta bopn_{t-i} + \beta_7 \Delta gace_{t-i} + \beta_8 \Delta gece_{t-i} + \beta_9 \Delta gsce_{t-i} + \beta_{10} \Delta gtce_{t-i} + ecm_t$$

(5)

Equation 5 above is used to adjust the estimation until the ECM turns 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.

Variable Description, Measurements and Apriori Expectation
Table 1: Description of the Variables Used for the Model

Variable	Description/Measure	Type	Source	Apriori Expectation
BOPN	Balance of Payment in Nigeria	Dependent	Word Bank, 2024	
GACE	Government Administration Capital Expenditure in Nigeria	Independent	CBN, 2024	$\alpha_1 >< 0$
GECE	Government Economic Services Capital Expenditure	Independent	CBN, 2024	$\alpha_2 >< 0$
GSCE	Government Social and Community Services Capital Expenditure in Nigeria	Independent	CBN, 2024	$\alpha_3 >< 0$
GTCE	Government Transfer Capital Expenditure in Nigeria	Independent	CBN, 2024	$\alpha_4 >< 0$

Source: Author Compilation, 2024

The a priori expectation is that α_1, α_2, α_3, and $\alpha_4 >< 0$ indicating a positive or negative relationship between the dependent and independent variables, that is, an increase/decrease in selected government capital expenditure variables like government administration capital expenditure, government economic services capital expenditure, government social and community services capital expenditure and government transfer capital expenditure will lead to decrease/increase in balance of payment in Nigeria.

Method of Analysis
The study employed Autoregressive Distributed Lagged (ARDL) is the best method for estimating variables integrated into 1(1) and 1(0), according to Pesaran and Shin (1999), which was expanded by Pesaran, Shin, and Smith (2001). To estimate and analyze the long- and short-term effects of government capital expenditures and balance of payment in Nigeria, the study used the autoregressive distributed lag (ARDL) and error correction model (ECM). The co-integration of government capital expenditures and balance of payment in Nigeria was examined using the autoregressive distributed lag (ARDL)--bounds test. The analytical program for model estimation is E-Views 9.0.

Presentation and Discussion of Results
Descriptive Analysis and Summary Statistic of the Variables
Table 2: Descriptive Analysis and Summary Statistic of the Variable

	BOPN	GACE	GECE	GSCE	GTCE
Mean	-391.2043	197.8127	356.5903	95.16697	128.9409
Median	-220.6700	171.5700	278.9500	71.36000	55.44000
Maximum	6074.640	789.8100	1369.660	377.2600	597.0900
Minimum	-4205.710	2.920000	2.340000	1.490000	0.000000
Std. Dev.	2138.036	198.2767	326.0560	94.73160	150.6842
Skewness	0.963915	1.278130	1.398373	1.191975	1.568910
Kurtosis	4.456049	4.219927	4.750894	3.997903	4.797958
Jarque-Bera	8.025337	11.03119	14.97019	9.183661	17.98304
Probability	0.018085	0.004024	0.000561	0.010134	0.000124
Sum	-12909.74	6527.820	11767.48	3140.510	4255.050
Sum Sq. Dev.	1.460000	1258037.	3402000.	287170.4	726583.5
Observations	33	33	33	33	33

Source: Output from E-views 9.0 (2024)

Table 2 shows the summary statistics or the descriptive statistics of the variables used in the study. From the table, the highest value for the Balance of Payment in Nigeria during the period of study is 6074.64, as shown in the maximum values in Table 4.2. while the peak values of government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria are 789.8100, 1369.660, 377.2600 and 597.0900, respectively. However, the balance of payment in Nigeria during the period of study was -4205.710. while the lowest values for government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria are 2.92, 2.34, 1.49 and 0.0, respectively, on average, the balance of payment is -391.2043, while the government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria are 197.8127, 356.5903, 95.16697 and 128.9409, respectively, as indicated by their mean values.

Stationary Tests (Unit Root Tests)
This section shows the unit root of the variables using the Augmented Dickey-Fuller (ADF) Test to check the stationary at a 5 percent level of significance.

Table 3: Unit Root Test Result

Variable	Augmented Dickey-Fuller (ADF) Test		
	ADF	Critical Value	Status
BOPN	-5.648032**	-3.557759	1(0)
GACE	-4.066093**	-3.603202	1(1)
GECE	-6.451536**	-3.562882	1(1)
GSCE	-6.371826**	-3.562882	1(1)
GTCE	-8.158458	-3.562882	1(1)

*Implies significant at 1% level, **implies significant at 5% level and *** implies significant at 10%

Source: Researcher's Computation Using EViews-9 (2023)

Table 3 shows the stationary tests of the balance of payment in Nigeria, government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria. Thus, Table 3 of the ADF test results revealed that the balance of payment in Nigeria, is stationary at level, which means that they are integrated of order zero 1(0) at a 5% level of significance. On the other hand, government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria were not stationary at the level until they were differenced once, and they were said to be integrated of order 1(1). Given the mix result, as shown by ADF tests, as well as the order of integration of the variables, the long-run relationship among the variables will be tested using the ARDL model, which can capture the characteristics of a mixture of 1(0) and 1(1) of the variables as postulated by Pesaran *et al.,* (2001).

Co-integration of ARDL-Bounds Test
This section shows the ARDL co-integration bounds test of the variables used in this paper.

Table 4: ARDL-Bound Testing

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	4.873991	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Researcher's Computation Using EViews-9 (2024)

Table 4 shows the ARDL bounds test for co-integration that was carried out for all four models based on the research objectives. The model I result shows that the F-statistic derived from the ARDL bounds test is 42.84, and when compared with the critical values obtained from the Pesaran Table at a 5% level of significance, its value exceeded both 2.56 and 3.49 for 1(0) and 1(1), respectively. balance of payment in Nigeria, government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria as independent variables are co-integrated at a 5% level of significance.

ARDL Regression Results

This section presents the long-run and short-run results of the ARDL regression analysis, where the balance of payment in Nigeria is the dependent variable and the balance of payment in Nigeria, government administration capital expenditure in Nigeria, government economic services capital expenditure in Nigeria, government social and community services capital expenditure in Nigeria and government transfer capital expenditure in Nigeria are the independent variables.

Table 5: ARDL Regression Results
Dependent Variable: BOPN

Co-integrating Estimates (ECM Estimates)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BOPN(-1))	-0.948699	0.131848	-7.195401	0.0000
D(BOPN(-2))	-0.641344	0.136258	-4.706829	0.0003
D(GACE)	10.70310	8.113636	1.319150	0.2069
D(GACE(-1))	11.69693	7.492879	1.561073	0.1394
D(GECE)	-0.536148	4.252719	-0.126072	0.9013
D(GECE(-1))	-9.933818	4.200167	-2.365101	0.0319
D(GTCE)	5.024719	4.097326	1.226341	0.2390
D(GTCE(-1))	-3.497744	4.726223	-0.740072	0.4707
D(GTCE(-2))	-10.18030	3.856326	-2.639895	0.0186
CointEq(-1)*	-0.326447	0.061974	-5.267509	0.0001
R-squared	0.797478			
Adjusted R-squared	0.642608			
F-statistic	5.149343			
Prob. (F-statistic)	0.001084			
Durbin-Watson stat	2.193740			
Long Run				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GACE	23.045387	16.779788	1.373402	0.1875
GECE	7.190603	7.187468	1.000436	0.3311
GSCE	-82.880097	34.197057	-2.423603	0.0268
GTCE	9.612619	7.062912	1.360999	0.1913
C	-829.337783	536.606470	-1.545523	0.1406

Source: Researcher's Computation Using EViews-9 (2023)

Table 5 above represents ARDL regression results that show the coefficient, their corresponding t-statistics and probability values for each of the government capital expenditures variables. The government administration capital expenditure reveals a positive coefficient of 23.045387, with t-statistics of 1.373402 and a probability value of 0.1875 indicating an insignificant impact on the balance of Payment in Nigeria at the 5% level of significance. This shows that an increase in government administration capital expenditure has led to an insignificant increase balance of payment. This might be a result of low patronage of local production by the government. Patronage of local products will make the balance of payment more favourable. Likewise, government economic services capital expenditure in Nigeria had a positive coefficient of 7.190603 with t-statistics of 1.000436 which shows an insignificant positive impact on the balance of payment in Nigeria of 5% level (prob. 0.3311) and this may be due to unfinished project or lack of constant power supply which might prevent the optimum usage of this project. In contrast, government social and community services capital expenditure in Nigeria had a negative coefficient of -82.880097 and t-statistics of -2.423603 while the probability value of 0.0268 shows an insignificant negative impact on the balance of payment which means that an increase in government social and community services capital expenditure will lead to decrease in balance of payment in Nigeria this might be due to government over-reliance on foreign product for social and community services. Finally, government transfer capital expenditure in Nigeria has a positive coefficient of 9.612619 with a t-statistic of 1.360999 and probability of 0.1913 which indicates an insignificant impact on the balance of payment meaning that an increase in government transfer capital expenditure in Nigeria will lead to an increase in balance of payment although not a significant increase. This might be due to transfers that could be used to fund storage facilities for agricultural goods that ultimately benefit the balance of payment in Nigeria. The ECT show the 1-period lag error correction term. Its value of -0.33 indicates that it is negative and statistically significant, with a probability value of 0.0001 at a 5 percent significant level. This means that the average speed of adjustment from the short run to the long run, should there be any disequilibrium, is 33%.

The R-squared value of 0.797478 indicates that the model explains a moderately high proportion of the variation in the balance of payment in Nigeria. The adjusted R-squared value of 0.642608 is also quite high, suggesting that the model fits the data well while accounting for 79% of the number of explanatory variables included. The F-statistic of 5.149343, with a probability of 0.001084, is highly significant. This indicates that the overall regression equation is statistically significant and that there is a collective impact of the government capital expenditure indicators on balance of payment in Nigeria. The very low probability associated with the F-statistic, being well below a common alpha level of 0.0000, essentially rejects the null hypothesis that the model with no independent variables would be as explanatory of the variation in the balance of payment in Nigeria as the current model. The Durbin-Watson statistic is 2.193740, which is similar to the value of 2. This statistic looks for autocorrelation in the residuals of a regression analysis. A number approaching 2 indicates that there is no autocorrelation in the sample; thus, the residuals are independent of one another. This is an important element of regression

models because autocorrelation can invalidate normal statistical tests by inflating significance levels. In our scenario, the Durbin-Watson statistic provides further assurance against autocorrelation, validating the dependability of the regression results. Furthermore, the hypothesis stated H_{01}: government administration capital expenditure has no significant impact on the balance of payment in Nigeria. is accepted given that the value of 0.1875 is greater than a 5 percent level of significance. This implies that the government administration's capital expenditure has a positive but insignificant impact on the balance of payment in Nigeria. Also, the hypothesis that stated H_{02}: government economic services capital expenditure has no significant balance of payment in Nigeria is accepted given that the value of 0.3311 is greater than a 5 percent level of significance. This implies that the government's economic services capital expenditure has a positive but insignificant impact on the balance of payment in Nigeria. Similarly, the hypothesis that stated H_{03}: government social and community services capital expenditure has no significant impact on the balance of payment in Nigeria is rejected at a 5 percent level of significance given that the value of 0.0268 is less than a 5 percent level of significance. This implies that the government's social and community services capital expenditure has a negative and significant impact on the balance of payment in Nigeria. On the other hand, the hypothesis that stated H_{04}: government transfer capital expenditure has no significant impact on the balance of payment in Nigeria is accepted at a 5 percent level of significance given that the p-value of 0. 0.1406 is greater than the 5 percent level of significance. This implies that government transfer capital expenditure has a positive and insignificant impact on the balance of payment in Nigeria.

Post-Diagnostic Checks
Table 6: Results of Post-Diagnostic Checks

Test		Outcomes	
		Coefficient	Probability
Breusch-Godfrey Serial Correlation LM Test	F-stat.	0.369943	0.6969
Heteroskedasticity: Breusch-Pagan-Godfrey	F-stat.	0.774743	0.6754
Normality Test	Jarque-Bera	0.305625	0.8583

Source: Researcher's Computation Using EViews-9 (2024)

Table 6 revealed that the variables are free from the problem of serial correlation since the F-statistics is 0.37 and the P-value of 0.69 is greater than the 5% significance level. This outcome suggests the absence of serial correlation in the model of the impact of government capital expenditures on the balance of payment in Nigeria. Similarly, the Heteroskedasticity results show that variables are free from the problem of Heteroskedasticity since the F-statistics of 0.77 and P-value of 0.67 are greater than the 5% significance level. This outcome suggests the absence of heteroskedasticity in the model of the impact of government capital expenditures on the balance of payment in Nigeria. Also, the Jarque-Bera test of normality shows that the error term in our specified equation is normally distributed. Finally, this is evidenced by the respective insignificant Jarque-Bera statistics of 0.305 and the probability value of 0.85.

Discussion of Findings

The paper focused on assessing the impact of government capital expenditures and the balance of payment in Nigeria and based on the specific objective of the research, Government administration capital expenditure was found to have a positive but insignificant impact on the balance of payment in Nigeria which implies that an increase in Government administration capital expenditure will lead to increase in the balance of payment, although the increase does not impact the balance of payment more so as this finding supports the works of Bureau (2020) capital expenditure has no significant impact on gross domestic product in Nigeria, Also government economic services capital expenditure reveals a positive and insignificant impact on the balance of payment in Nigeria. This suggests that any increase in government economic services capital expenditure will lead to an increase in the balance of payment as this result supports the work of Edeh *et al*. (2020) that capital expenditure is positively related to agricultural output. In contrast, government social and community services capital expenditure was found to have a significant negative impact on the balance of payment in Nigeria which supports the findings of Inimino *et al.* (2020) that fiscal policy had no meaningful effect on Nigeria's balance of payments and also government transfer capital expenditure has no significant impact on the balance of payment in Nigeria. While government transfer capital expenditure in Nigeria had an insignificant positive impact on the balance of payment, these findings go in line with the study of Okpabi *et al*., (2021),

Conclusion and Recommendations

The study's findings underline the intricate relationship between government capital expenditures and the balance of payment in Nigeria, particularly affecting the balance of payments. Given these insights, the following recommendations are proposed:

1. The government should emphasize the need to improve the efficiency and effectiveness of government capital expenditures, ensuring that funds are allocated to areas with the highest impact on economic stability and sectoral improvements.
2. The government or policymaker should improve the responsiveness of fiscal policies to economic indicators and disequilibria to enhance the speed of adjustment towards long-term equilibrium, ensuring economic stability and growth.
3. They should adopt a balanced approach in budget allocations, ensuring that no sector's expenditure detrimentally impacts the balance of payments or undermines other sectors, particularly the health sector.
4. The government should Implement strict monitoring and evaluation frameworks for government projects and expenditures to ensure accountability, optimal use of resources, and the achievement of intended economic and social outcomes.

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