EXCHANGE RATE VARIATION AND BALANCE OF PAYMENT POSITION IN THE NIGERIAN ECONOMY

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Abstract
This study was carried out to examine the impact of exchange rate variation and balance of payment position in Nigeria. This study used time series data (secondary data) for regression analysis. The data were sourced from World Development Indicators (2024) and Central Bank of Nigeria Statistical Bulleting (2023). The data cover the period between 1986 and 2022. This period was chosen based on the availability of data in the study period. The study used the following variables: Balance of payment (BOP) measured in N million, Inflation rate measured by consumer prices (annual %), Broad money supply as a proxy for monetary policy, Exchange rate measured by LCU per US$, period average & Government Capital Expenditure measured in N billion. The method of analysis adopted is the autoregressive distributed lag (ARDL) estimation technique. The result showed that exchange rate has a negative and significant ($p<0.05$) impact on balance of payment position in Nigeria. Government capital expenditure has an insignificant ($P>0.05$) positive impact on balance of payments in Nigeria. Broad money supply as a prosy for monetary policy has an insignificant positive impact on balance of payments in Nigeria. The result also showed that inflation has a positive and insignificant impact on balance of payment during the period under review. Based on the findings, the following could be recommended that the Central Bank of Nigeria should focus on maintaining flexible and stable exchange rates, as it has a negative and significant impact on balance of payments. Government capital expenditure should be carefully planned and executed to ensure that it is targeted towards investments that promote exports and reduce imports. The Central Bank of Nigeria should maintain a stable inflation rate to ensure that it improves the balance of payment position of the country. The government should diversify the economy by promoting non-oil exports and reducing dependence on oil exports. The government should review and adjust its monetary policies especially money supply to ensure that the policies improves the balance of payment position of the country.

Introduction
The price of one nation's currency in relation to another is known as the exchange rate. It has a significant impact on global trade flows and money movements by setting the cost of imports and exports. By changing the prices of imports and exports, it significantly affects international trade flows and money movements (Olanipekun and Ogunsola 2017). Due to a variety of reasons, including fluctuations in the price of oil throughout the world, pressure from external debt, and foreign exchange reserves, Nigeria's exchange rate has historically been a very volatile economic variable. Because Nigeria is heavily dependent on oil imports and exports, changes in currency rates can significantly affect the value of its foreign exchange earnings. For instance, imports become more expensive and exports less expensive when the Nigerian naira/dollar depreciates (Olanipekun and Ogunsola 2017). This theoretically improves the trade balance by decreasing the amount of imports and raising the amount of exports. But because Nigeria depends so heavily on imports, especially vital inputs like raw materials and machinery, a weak naira frequently causes inflationary pressures as the price of imports rises. There is a negative correlation between changes in the exchange rate and the balance of payments. A strong naira could improve the balance of payments by reducing inflation and import costs, depending on the direction of the volatility. However, it could also decrease export competitiveness by making Nigerian goods more expensive abroad (CBN, 2018). Conversely, a weakening currency boosts exports but exacerbates the current account deficit by raising the cost of essential imports. Therefore, the ability of exchange rate measures to establish stability in the balance of payments depends on the economy's structure and the elasticity of demand for imports and exports (George-Anokwuru, 2024).

Public investment on tangible assets like roads, schools, hospitals, infrastructure, and energy projects is referred to as government capital expenditure. With the belief that expenditures in essential infrastructure will raise the country's competitiveness, productivity, and job creation, capital spending has been a popular strategy in Nigeria to support economic growth and development. Nonetheless, it is not always clear how government capital expenditures and the balance of payments are related. According to Nwanosike, Uzoechina, Ebenyi, and Ishiwu (2017), public infrastructure spending can boost economic output and reduce the need for imports, but it can also result in significant budget deficits if poorly managed.

Government overspending on capital projects, especially when financed by foreign borrowing, can increase the country's external debt load and negatively affect the balance of payments. Additionally, if exports do not generate enough foreign cash for the economy, government spending that raises demand for imported goods and services may worsen the current account deficit (CBN, 2018). For instance, construction projects that call for imported raw materials or equipment could result in a sharp increase in imports, further straining the balance of payments. The effectiveness of government capital expenditure in improving the balance of payments in this case depends on a number of factors, including the type of projects funded, the ratio of domestic to foreign inputs, and the projects' capacity to increase the economy's long-term capacity to generate foreign exchange.

The benchmark interest rate that a nation's central bank sets to manage liquidity, inflation, and overall economic activity is known as the monetary policy rate, or MPR. The Central Bank of Nigeria (CBN) in Nigeria uses the MPR as a tool to influence lending rates, borrowing costs, and eventually the amount of economic activity in the nation. The CBN can modify the MPR in order to calm inflationary pressures (by raising the rate to discourage expenditure) or promote economic growth (by reducing the rate to encourage borrowing and investment) (CBN, 2018). Additionally, the MPR directly affects exchange rates, which in turn affects the balance of payments. Foreign investors typically seek better returns on their investments in government bonds and other financial instruments, therefore a higher MPR tends to draw in new capital into the portfolio. The capital account is strengthened by these capital inflows, which can enhance the balance of payments. High interest rates, however, may potentially cause weaker internal growth, which would weaken the current account and limit export potential (George-Anokwuru, 2024). On the other hand, a lower MPR could boost export growth and domestic economic activity, but it could also result in capital outflows as investors look for better yields elsewhere, which would put pressure on the currency rate and possibly exacerbate the balance of payments. The intricate relationship among the MPR, currency rate, and balance of payments is frequently impacted by outside variables including sentiment among overseas investors and fluctuations in global interest rates. Nigeria must carefully strike a balance between promoting internal economic growth and guaranteeing external stability in order to maintain an ideal MPR (George-Anokwuru, 2024).

The balance of payments (BOP) is a comprehensive summary of all economic transactions that take place between a country and the rest of the world over a specific period of time, usually a year. This system consists of the capital and financial account, which tracks capital movements including foreign direct investment and portfolio investment, and the current account, which manages investment and transfer income in addition to commodities and service trade. In contrast to a negative balance of payments, which implies the opposite, a positive balance of payments shows that a nation is drawing in more foreign investment and exporting more commodities than it is importing (Gatawa, Elijah, and Umar 2018).

Nigeria's reliance on oil exports, which provide the majority of its foreign exchange earnings, has a substantial effect on its balance of payments. Because of its reliance on a single commodity, the balance of payments is susceptible to global changes in the price of oil. Nigeria frequently has a surplus in its balance of payments during periods of high oil prices because foreign cash inflows from oil exports strengthen the country's current account (Gatawa et al., 2018). However, when oil prices decline, the nation frequently faces a deficit because foreign exchange profits decline while import demand—particularly for capital equipment and consumer goods—remains high. Other factors that impact the balance of payments include government spending, monetary policy decisions, and exchange rate

policies. A naira devaluation, for instance, would strengthen Nigeria's exports and enhance the country's current account, but it could also damage the capital account if it encourages capital flight. Comparably, government capital investment on infrastructure projects has the potential to strengthen the economy's long-term growth and balance of payments—but only if it is carefully targeted and does not result in unnecessarily high levels of external borrowing (CBN, 2018).

Exchange rate fluctuations can affect the current account by altering the competitiveness of imports and exports, as well as the capital account by affecting the attitude of foreign investors. Long-term government capital expenditures can improve the balance of payments and economic growth, but they can also lead to short-term imbalances if they increase imports or external borrowing (Aidi 2018). The monetary policy rate affects the capital and current accounts, as well as domestic economic activity and international capital flows.

The world's economy is interdependent and interconnected through international trade and partnerships. There is a high level of interdependency and a need for international trade in goods and services because no country has all the resources required to support growth. Exchange rates are required because using the currency of the selling nation is the only way to conduct international trade in goods and services (Dalimus et al., 2018). The value and unit of a nation's currency in respect to other currencies is measured by the exchange rate. It connects the local currency to that of other nations. A country's balance of payments documents its position in relation to the rest of the globe. Because they link the monetary units of different countries and make it easier to move goods and services, exchange rates are important in global interactions (Oladipupo and Ogbenovo, 2011). According to Olanipekun and Ogunsola (2017), currency rate management has a variety of effects on both internal and external balances. In an economy heavily dependent on imports, the monetary authority's appreciation of the national currency could have negative effects on the real sector, overall price level, and balance of payments. Therefore, professionals, academics, and policymakers have placed a high emphasis on exchange rate fluctuation and its connection to the balance of payments (Nwanosike et al., 2017).

Maintaining the stability of the balance of payments remains the primary objective of currency rate management since subpar performance in this area can impede a country's reserves and economic growth. Nigerian policy has focused mostly on the issue of managing currency rate volatility. Since 1970, the government has been using a new currency rate system. Nigeria's exchange rate policy appeared to encourage the overvaluation of the Naira in order to boost exports, discourage the export of goods other than oil, and make the country's economy unduly reliant on imports in comparison to exports prior to the implementation of the Structural Adjustment Programme (SAP) (Abdullahi, Abubarkar, Fakunmoju & Giwa, 2016).

Notwithstanding the governments' policy objectives, Nigeria has endured an unpredictable currency rate, which has a negative impact on the country's balance of payments. Because of its undeniable importance in fostering economic growth and prosperity, the exchange rate problem and the establishment of a fair exchange rate for the Naira presented a significant challenge to policy makers (Nnanna, 2004; Ogbonna, 2010). In order to make sure that the acquisition and utilization of foreign cash by different sectors align with strategic economic priorities, the Central Bank of Nigeria rigorously oversees the use of periodic releases of foreign exchange in the face of scarce foreign money (Agundu, et al., 2013). Because of its excessive reliance on imports, Nigeria always had a chronic balance of payments deficit and had numerous obstacles when attempting to address it with money. With a current account balance of N3,455.7 billion in 2008, N2,064.9 billion in 2009, N1,970.6 billion in 2010, N1,641.5 billion in 2011, N2736.4 billion in 2012, N2,99.6 billion in 2013, N142.6 billion in 2014, and a deficit balance of N3,033.5 billion in 2015, the situation worsened over time. Eventually, it improved to N687.9 billion and N3,174.4 billion in 2016 and 2017, respectively, before falling to N1,630.1 billion in 2018 (CBN, 2018).

Statement of problem

Nigeria's balance of payments has been a critical area of concern for policymakers due to its persistent deficits and the associated economic instability. One significant factor influencing Nigeria's balance of

payments is the exchange rate. Exchange rate fluctuations have posed severe challenges to economic stability, with the Nigerian naira often experiencing significant depreciation against major global currencies (Olanipekun and Ogunsola 2017). This depreciation makes imports more expensive and exports less competitive, contributing to trade imbalances. Furthermore, the volatility in exchange rates discourages foreign investment, undermining Nigeria's capacity to attract foreign direct investment (FDI), which is essential for boosting reserves and addressing deficits in the balance of payments. While capital expenditure is meant to stimulate economic growth through investments in infrastructure, education, and healthcare, its impact on the balance of payments can be adverse when financed through external borrowing (Eke, Eke and Obafemi, (2015). Excessive reliance on foreign loans increases the nation's external debt obligations, resulting in higher debt servicing costs that strain the current account. Furthermore, inefficiencies and corruption in the allocation of capital expenditure often lead to suboptimal outcomes, with little improvement in the export sector. This stagnation limits the country's ability to diversify its revenue sources and reduce dependence on crude oil exports, leaving the balance of payments vulnerable to external shocks such as fluctuations in global oil prices.

Inflation, closely tied to exchange rate variations, exacerbates the balance of payments problem. Exchange rate depreciation fuels imported inflation, as the cost of imported goods rises, eroding purchasing power and increasing the cost of living. This creates a vicious cycle where higher inflation pressures the central bank to increase interest rates, further constraining economic growth. Additionally, inflation discourages foreign investors due to the perceived instability, reducing capital inflows necessary for balancing the financial account (Olanipekun and Ogunsola 2017). The prevalence of inflation also affects local industries, as the rising costs of raw materials and inputs make it difficult for domestic producers to compete globally, hindering export performance and deepening the trade imbalance.

These challenges are compounded by structural issues in Nigeria's economy, including its overreliance on oil exports and the underdevelopment of other sectors. The failure to implement effective diversification policies has left the economy exposed to external shocks, such as oil price volatility, which directly impacts the balance of payments. Moreover, policy inconsistencies and lack of coordination between fiscal and monetary authorities exacerbate these problems, creating an environment of uncertainty that discourages both domestic and foreign investment. The combined impact of these variables has been a persistent imbalance in Nigeria's balance of payments, characterized by high external debt, low foreign reserves, and recurring trade deficits.

Empirical research has focused on the connection between exchange rates and balance of payments performance. Nevertheless, rather than concentrating on the total balance of payments, the majority of the examined research concentrated on its component parts. The impact of exchange rates on capital accounts, for example, was the subject of studies by Oladipupo and Ogbenovo (2011), Eke et al. (2015), and Abdullahi et al. (2016), whereas Ahmad et al. (2014), Odili (2014), and Olanipekun and Ogunsola (2017) examined the impact of exchange rates on current accounts. Few studies have also shown which way the exchange rate and total balance of payments are causally related. Lastly, by extending the study's scope from 1986 to 2022 to account for current developments in Nigeria's currency rate and balance of payments, this research improves upon the examined literature. However, despite her enormous wealth, Nigeria faces numerous obstacles including poverty, unemployment, a low standard of living, and a sharp decline in foreign direct investment, all of which are signs of a weak economy. As such, this is the ideal time to assess the impact of policy and the exchange rate on the balance of payments position, which is the aim of this paper.

Objective of the study

The main objective of the study was to examine the impact of exchange rate variation and balance of payment position in Nigerian Economy. The specific objectives are to:

A. examine the impact of exchange rate on balance of payments in Nigeria
B. examine the impact of government capital expenditure on balance of payments in Nigeria
C. ascertain the impact of monetary policy rate on balance of payments in Nigeria
D. examine the exchange rate variation on inflation in Nigeria

Hypotheses of the study

The hypotheses were presented in null form as follow:

Hypothesis 1: Exchange rate has no significant impact on balance of payments in Nigeria

Hypothesis 2: Government capital expenditure has no significant impact on balance of payments in Nigeria

Hypothesis 3: Monetary policy rate has no significant impact on balance of payments in Nigeria

Hypothesis 4: Exchange rate variation has no significant impact on inflation in Nigeria

2.2 Theoretical Review

Theories of Rate of Exchange

Monetary Model:

According to Nzotta (2004), this model ensures that changes in the money supply affect the exchange rate in some way. The model aims to clarify how exchange rates are impacted by shifts in the supply and demand of money between two currencies. (Olisadebe 1991) Theoretically, when real income increases and the nominal money supply remains constant, prices fall, leading to an increase in the exchange rate. The exchange rate depreciates as a result of rising prices brought on by an increase in money demand. The monetary model is heavily influenced by the traditional quantity theory of money. According to Fisher, the model accurately depicts the relationship between the different pricing points and the money supply. The evolution of the actual velocity of money circulation is thought to be influenced by the rate of inflation, real output growth, and monetary expansion. In line with the previously said, Obaseki (1990) stated that it was thought that the rate of output growth would affect how actual velocity evolved and, ultimately, how quickly inflation rose. As the rate of inflation increases, the exchange rate changes. The model approaches the study of exchange rate dynamics in a very basic way. Exchange rate determination is generally influenced by changes in interest rates and yields.

This model postulates that exchange rates are primarily driven by the relative supply and demand for money between two countries, linking monetary variables such as money supply, interest rates, and inflation to exchange rate movements. In the context of Nigeria, where the naira's exchange rate often fluctuates due to changes in monetary policy and external economic conditions, the monetary model offers insights into how these factors influence the country's balance of payments position. A key strength of the monetary model is its simplicity and ability to establish a direct connection between macroeconomic indicators and exchange rates, making it a valuable tool for policymakers in understanding how changes in money supply or inflation rates affect exchange rate stability and international trade flows.

For instance, an expansionary monetary policy in Nigeria that increases the money supply without a corresponding increase in economic output can lead to inflationary pressures, reducing the purchasing power of the naira and causing depreciation in the exchange rate. This depreciation can improve the balance of payments by making exports cheaper and more competitive globally while discouraging imports due to higher costs. Conversely, contractionary monetary policies aimed at reducing money supply can stabilize inflation and strengthen the currency, potentially improving the trade balance. However, the monetary model also has notable weaknesses, particularly its reliance on assumptions such as perfect capital mobility, purchasing power parity (PPP), and the stability of money demand, which may not always hold in real-world scenarios, especially in developing economies like Nigeria.
In Nigeria's case, structural challenges such as insufficient industrial capacity, reliance on oil exports, and a volatile global economic environment can distort the relationships predicted by the monetary model. Additionally, the model's focus on long-term equilibrium may limit its applicability to short-term exchange rate fluctuations influenced by speculative activities, political instability, or sudden capital flow reversals. Furthermore, the monetary model does not fully account for the impact of non-monetary factors such as trade policies, geopolitical risks, or external shocks like oil price volatility, which significantly affect Nigeria's balance of payments. While the monetary model provides a foundational understanding of the interplay between monetary policy and exchange rates, its limitations

highlight the need for complementary frameworks to capture the complexities of Nigeria's economic landscape comprehensively.

The Mint Par Parity Theory

The mint parity theory establishes the exchange rate between the two gold standard countries. When a country uses the gold standard, its currency is either made of gold or its value is expressed in gold. According to the mint parity theory, the exchange rate under stable standards is equivalent to the gold content of one currency relative to another. This exchange rate is also known as the mint rate. The currency of the system was either made of gold or convertible into gold at a fixed rate, according to Jinghan (1997).

The value of the currency unit was set in terms of a certain weight of gold, and the country's central bank was always willing to purchase and sell gold at the agreed upon price. The rate at which the industry's standard currency could be converted into gold was known as the mint price of gold. The mint parity, also referred to as the mint par of exchange, was the comparison of these values. The actual exchange rate, however, may vary above and below mint parity due to the expense of transporting gold between the two countries.

If: (a) the standard monetary unit is defined in terms of gold, meaning that its weight may be changed into gold at predetermined rates, or if it is composed of gold of specified pirating, then that country is said to be on the gold standard. (a) The government buys and sells indefinitely at a formally fixed price. (c) There are no restrictions on the import or export of gold. The mint parity theory states that when the gold standard is in effect, the exchange rate typically stays close to the ratio of gold values or the mint parity or par. In other words, the exchange rate between the gold standard countries is determined by the gold equivalents of the applicable currencies.

According to S.E. Thomas, the mint par is the ratio of the statutory bullion equivalents of the monetary units of two countries on the same metallic standard. As a result, after taking into consideration the parity of each currency's gold content, the weight-to-weight ratio of each currency's gold content automatically determines the exchange rate between currencies that are defined in gold. Gold points: Mint rats have existed for a long time. Foreign currency supply and demand tend to balance out over time, and the exchange rate eventually approaches the ratio of mint parity gold values.

Changes in supply and demand dynamics might cause the market exchange rate to diverge from the long-term mint parity equilibrium. This volatility in the exchange rate falls within the well-defined range known as gold points. The "gold point" is the line separating the market exchange rate between two countries on the gold standard from the equilibrium level of the mint standard. The top gold point indicates the higher limit, and the lower gold point indicates the lower limit. The value of the gold is determined by the cost of shipment, which includes packing, transportation, and insurance differences between countries.

The lower gold point is obtained by subtracting the cost of shipping gold from the mint parity of exchange, while the upper gold point is obtained by adding the cost of shipping gold to the mint parity of exchange. The higher gold point, sometimes referred to as the gold export point, is the crucial exchange rate at which gold will be exported. Similarly, because it indicates the crucial exchange rate below which gold will be imported, the lower gold point is sometimes referred to as the gold import point. Under the gold standard, exchange values between two currencies cannot shift from higher to lower gold points.

We can call it a fixed exchange rate because it will remain within these parameters. The method of determining exchange values in terms of gold contents mint parity has become absolute in modern times as no country in the world adheres to a gold standard. Globally, the government prohibits the free buying and selling of gold. The tyranny of the gold standard depends on flexible internal processes, and most countries utilize flat or adequate currency standards. However, in their quest for independent domestic employment and pricing policies, modern governments ignore exchange rates. The worth of various

currencies in terms of their gold content or mint parity cannot be fixed under such conditions, nor can the gold points to which exchange rate movements are restricted.

According to this theory, the exchange rate between two countries' currencies is determined by the fixed ratio of the gold content in each currency. This means that the value of a country's currency is directly linked to the amount of gold it can be exchanged for, ensuring that exchange rates remain stable as long as the parity between gold contents is maintained. When applied to the Nigerian economy, the Mint Par Parity Theory is less directly relevant in the modern context, as Nigeria operates under a floating or managed exchange rate system. However, its principles can provide historical insights into the factors influencing exchange rates and their impact on the balance of payments.

A key strength of the Mint Par Parity Theory lies in its simplicity and its ability to establish a fixed and stable exchange rate system, which minimizes uncertainty for international trade and investments. In theory, under such a system, exchange rate variations would be minimal, and the balance of payments would self-correct through gold flows. For example, if Nigeria were operating under a mint parity system and experienced a trade surplus, gold inflows would increase, strengthening the naira and reducing the surplus by making exports more expensive and imports cheaper. Conversely, trade deficits would lead to gold outflows, weakening the currency and encouraging export competitiveness.

However, the theory has significant weaknesses in its applicability to modern economies like Nigeria's. The gold standard, which underpins the theory, has been largely abandoned due to its inflexibility in responding to economic shocks and its reliance on gold reserves, which are finite and unevenly distributed among nations. For a developing economy like Nigeria, the theory fails to address critical factors such as currency speculation, inflation, and government intervention in the foreign exchange market. Additionally, Nigeria's reliance on oil exports and exposure to global commodity price volatility make it difficult to maintain a fixed exchange rate system based on the principles of mint parity.

The Mint Par Parity Theory also does not account for modern monetary and fiscal policies or the influence of non-monetary factors such as political stability, foreign direct investment, and technological advancements, which significantly affect exchange rates and balance of payments today. While the theory offers a simplified historical perspective on exchange rate determination, its rigidity and limited applicability to modern economic systems highlight its shortcomings in explaining the complexities of Nigeria's exchange rate dynamics and balance of payment challenges.

Research Methods

Research Design

Research design according to Olannye (2006) is the approaches, framework or plans for carrying out research studies. It can be described as a detailed blue print used to guide a research study towards its objectives. The study used an ex-post facto research design, which is appropriate when the researcher uses data that already exists and does not seek to manipulate any of the factors being studied.

Sources, Nature and Description of Data

This study used time series data (secondary data) for regression analysis. The data were sourced from World Development Indicators (2024) and Central Bank of Nigeria Statistical Bulleting (2023). The data cover the period between 1986 and 2022. This period was chosen based on the availability of data in the study period. The study used the following variables: Balance of payment (BOP) measured in N million, Inflation rate measured by consumer prices (annual %), Broad money supply as a proxy for monetary policy, Exchange rate measured by LCU per US$, period average & Government Capital Expenditure measured in N billion.

Model Specification

Basically, this study adopted the model used by Duke & Kankpang (2011) with modification. The model seeks to link exchange rate variation and balance of payment position. Thus, the model for this study is specified as:

BOP = f (EXCR, GCEX, BM, INF) …… (1)
This is expressed in its econometric form as:
$BOP = \beta_0 + \beta_1 EXCR + \beta_2 GCEX + \beta_3 BM + \beta_4 INF + + \mu$…….. (2)
Where:
BOP = Balance of payment
EXCR = Exchange Rate
GCEX = Government Capital Expenditure
MP = Broad Money Supply
INF = Inflation
μ = is the error term
$\beta 1, \beta 2\ \beta 3\ \beta 4 > 0$
The consistency of our parameter estimate with the signs and magnitude is the focus of the apriori expectation. Therefore, we anticipate that our study's parameter estimate will be in line with these signs and magnitudes. Theoretically, there should be a negative correlation between changes in exchange rates and the balance of payments position.

Estimation Techniques
In analyzing examining the impact of exchange rate variation on balance of payment in Nigeria, this study used time series data from 1986 to 2022. The estimation technique used for regression analysis is the autoregressive distributed lag (ARDL) estimation techinique which has been in various related studies in the literatue such as Gorge-Anokwuru (2024), Delimus, Obuneke and Muhammad (2018), Dare and Adekunle (2020) as well as Ukangwa, Ikechi, Onyenze, and Uke-ejibe (2022).
Both the short-term and long-term relationships between dependent and explanatory variables have been captured by the autoregressive distributed lag (ARDL) model. Models having variables with distinct orders of integration, such I (0) and I (1), can be estimated using ARDL.

Pre- Estimation Tests
A successful data analysis requires some pre-estimation tests in order to ascertain the suitability of the variables and to have robust results. They include: unit root test, cointegration test and causality test. Heteroskedasticity test, Serial Correlation, normality test, Correlation Test.

- **Unit roots Tests:** These are performed to determine the stationarity of the variables. That is to check if they stationary at levels or not. This study carried out the Augmented Dickey Fuller (ADF) unit roots test.
- **Cointegration Test:** This is performed to ascertain if long run relationships exist among the variables. This study performed the F-Bound cointegration test.
- **Causality Test:** This is used to assess if one time series may be used to predict or determine another. It is employed to ascertain the causal relationship between a model's variables.

Post- Estimation Tests

- **Serial Correlation Test**: This test looks for a correlation between a variable and a lagged version of the variable over multiple time periods. The Breusch-Godfrey Serial Correlation LM test was used in this investigation.
- **Heteroskedasticity Test**: This determines if the variance of regression errors depends on the independent variable values. The Breusch-Pagan-Godfrey Heteroskedasticity test was used in this investigation.
- **Normality Test**: These tests are used to calculate the likelihood that a random variable underlying a data collection will be normally distributed and to assess if a data set is well-modeled by a distribution. To determine if the residuals in this study are normally distributed, the Jaque-Bera Normality test was employed.
- **Stability Test:** Stability test is used to check if the residuals in a regression model are stable. In this study, the CUSUM stability test was carried out to check the stability of the residuals.

Results and Discussion

Data Presentation

4.1 Data Analysis

Table 4. 1: Summary of ADF Unit Root Test

Unit Root (ADF) Test					
Study Variables	ADF Test Statistic	Mackinnon Test Critical 5%	P – Value	Order of Integration	Conclusion
BOP	-9.204857	-2.951125	0.0000	I(1)	Stationary
EXCR	-4.046518	-2.948404	0.0034	I(1)	Stationary
BM	-4.890943	-2.948404	0.0003	I(1)	Stationary
INFL	-2.945842	-2.892364	0.0321	I(0)	Stationary
GCEX	-4.150299	-3.587527	0.0152	I(1)	Stationary

Source: Author's Computation.

Table 4.1 shows the result for the Augmented Dickey Fuller (ADF) statistics and the critical values at 5%. There appears to be a mixture of levels and first difference stationarity at 5% level of significance. Therefore, co-integration test can be conducted to see if the variables have a long-run relationship using the ARDL F-Bounds test approach.

Table 4.2: Summary of the Bounds Cointegration Test

Bounds Test Null Hypothesis: No levels relationship

Test Statistics	**Value**	**Significance**	**I (0)**	**I (1)**
F- Statistic	4.974581	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Author Compilation

This result shows that the variables are cointegrated since the F – statistic (4.974581) exceeds the upper bounds (3.09, 3.49, 3.87 & 4.37) at 10%, 5%, 2.5% & 1% significance levels respectively. Hence there is a long run equilibrium relationship amongst the variables. This means that we can have long run and short run results.

Table 4.3: Summary of ARDL Long-run result.

Dependent Variable: BOP

Variable	Coefficient	Std. Error	t - Statistics	Prob.
EXCR	-5.332834	1.1033.24	-0.483343	0.0347
INF	8.447034	1.2901.88	0.654713	0.5209
BM	2.153380	8.5568.30	0.251656	0.8042
GCEX	4.121025	8.63.3837	0.477311	0.6389
C	2.893197	8.677124	3.334281	0.0037

R^2 = 0.627498, R^2 = 0.571108, F – statistics = 16.44787, Prob. (F - stat) = 0.000000,
Durbin-Watson stat = 2.358974

Source: Author Compilation.

About 63% of the long-term fluctuations in the dependent variable (balance of payment) can be accounted for by the explanatory factors, according to the R2 value of 0.63. This is sufficient since the independent variables have accounted for roughly 63% of the changes in the balance of payments. After controlling for degrees of freedom, the modified R2 value of 0.571108 indicates that the independent factors accounted for around 57% of the overall variation in the dependent variable. The long-term outcome demonstrates that Nigeria's balance of payments is significantly and negatively impacted by the currency rate.

Therefore, Nigeria's balance of payments would drop by 0.76 units for every unit increase in the exchange rate. This is consistent with the a priori assumption. As a result, one important factor influencing Nigeria's economic growth rate is the exchange rate. This demonstrates how fluctuations in currency rates eventually deteriorate Nigeria's balance of payments.

The long-term outcome also shows that government capital expenditures, inflation, and a wide money supply all have minor but favorable effects on Nigeria's balance of payments. As a result, they have little bearing on Nigeria's long-term balance of payments. There is no serial association, as indicated by the Durbin-Watsons statistic of 2.358974. The significance of the model is demonstrated by the F-statistic of 3.94 with a probability of 0.000000. The model is therefore an excellent predictor.

Table 4.4: Summary of ARDL Short-run result

Dependent Variable: BOP

Variable	Coefficient	Std. Error	t-Statistic	Prob
EXCH	-5.332834	7.765566	-0.686728	0.0010
BM	2.153380	6.543858	0.329069	0.7459
GCEX	4.121025	6.193334	0.665397	0.5142
ECM (-1)	-0.596655	0.096614	-6.175634	0.0000

R^2 = 0.677352, Adjusted R^2 = 0.571098, Durbin-Watson stat = 2.358974
Source: Author Computation.

About 68% of the short-term fluctuations in the dependent variable (balance of payments) can be accounted for by the explanatory factors, according to the R2 value of 0.68. This is sufficient since the independent variables have accounted for roughly 68% of the changes in the balance of payments. The short-term outcome demonstrates that the exchange rate significantly and negatively affects Nigeria's balance of payments. Therefore, Nigeria's balance of payments would drop by 0.68 units for every unit increase in the exchange rate. This is consistent with the a priori assumption.

As a result, one important factor influencing Nigeria's balance of payments is the exchange rate. This demonstrates how short-term fluctuations in exchange rates deteriorate Nigeria's balance of payments. The short-term outcome also shows that government capital expenditures and a large money supply have a favorable but negligible effect on Nigeria's balance of payments. As a result, they have little bearing on Nigeria's long-term balance of payments. There is no serial association, as indicated by the Durbin-Watsons statistic of 2.358974.
With a substantial p-value of 0.000 and a negative value of -0.596655, the error correction term (ECM) indicates a reasonable rate of adjustment. This indicates that the economy will reach long-term equilibrium at a rate of about 60% if there is short-term disequilibrium.

Discussion of Findings
The outcome demonstrated that the exchange rate significantly and negatively affects Nigeria's balance of payments over the long and short terms. Despite being a major influence in determining Nigeria's balance of payments, the findings indicate that exchange rate fluctuations harm the country's balance of payments. This finding implies that Nigeria's balance of payments situation is significantly influenced by the exchange rate. This finding is consistent with prior research that has shown a substantial detrimental effect of exchange rates on balances of payments, indicating that a decline in the value of the currency causes Nigeria's trade balance to worsen (Adeniyi et al. 2018).

It contradicts research, however, which has shown that the relationship between the exchange rate and the balance of payments is intricate and impacted by a number of variables, including the degree of economic development, trade openness, and the composition of the economy (Osakwe et al. 2019). Furthermore, some research has shown that the relationship between the exchange rate and the balance

of payments may not be linear, with a currency depreciation initially improving the trade balance before the effects of the depreciation are fully absorbed, causing a decline (Nwaobi et al., 2020).

Given Nigeria's unique economic and structural features, the outcome suggests that a more sophisticated understanding of the relationship between the exchange rate and balance of payments is required. Oladipupo (2011) asserts that the balance of payments position is significantly impacted by the currency rate. If budgetary restraint is enforced, the depreciation of the exchange rate may actually result in a better balance of payments position. By examining the effect of devaluation on the balance of payments using the ratio of non-gold reserves to imports, Kiguel and Ghei (1993) further demonstrate how the exchange rate influences the balance of payments.

According to Abdullahi, Abubarkar, Fakunmoju, and Giwa (2016), the money supply and exchange rate have a favorable impact on Nigeria's balance of payments. Through the balance of trade method, Nwanosike, Uzoechina, Ebenyi, and Ishiwu (2017) demonstrated that exchange rate devaluation has a detrimental impact on the balance of payments. The outcome demonstrated that government capital expenditures have a short-term and long-term positive and negligible effect on Nigeria's balance of payments. Even if it can enhance the nation's balance of payments, the findings indicate that higher government spending on capital projects like infrastructure development has little impact on the balance of payments.

This outcome supports the conventional Keynesian theory that government spending can boost economic expansion and balance the books. Additionally, it supports research showing that government capital expenditures have a favorable and substantial effect on balances of payments in other nations (Abille and Meçik, 2024). However, it contradicts research showing that the type of government spending determines its effect on the balance of payments, with capital spending possibly causing imports to rise and the trade balance to deteriorate (Amire & Amire, 2020).

Furthermore, according to some researches, government spending's ability to improve the balance of payments depends on the health of the economy, with spending being more successful during recessions (Oyinlola et al., 2018). All things considered, the outcome emphasizes the need for a more sophisticated comprehension of the connection between government capital expenditure and the balance of payments in Nigeria, accounting for the nation's unique structural and economic features.

The outcome demonstrated that, both in the short and long term, a broad money supply has a favorable and negligible effect on Nigeria's balance of payments. The results indicate that improving the nation's balance of payments is not significantly impacted by the monetary policy tools used by the Central Bank of Nigeria, such as the money supply. This outcome is consistent with the conventional theory of monetary policy, which holds that by lowering aggregate demand and raising exports, a strict monetary policy can enhance the balance of payments. Additionally, the result supports prior research that has shown that monetary policy improves balances of payments in other nations (Afolabi et al. 2018).

Furthermore, some researches have shown that monetary policy's ability to improve the balance of payments depends on its coordination with fiscal policy, with monetary policy working best when combined with fiscal policy that supports it (Nwaobi et al. 2020). The outcome demonstrated that inflation significantly and favorably affects Nigeria's balance of payments. This implies that Nigeria's balance of payments is improved by the nation's high rate of inflation. This outcome defies the theoretical prediction that inflation may cause the trade balance to worsen. It is also consistent with recent research that has shown that inflation has a negative and substantial effect on Nigeria's balance of payments (Adeniyi et al. 2018).

Furthermore, this finding contradicts research showing that inflation can reduce domestic industries' competitiveness, making them less able to compete with foreign producers. This, in turn, can result in a rise in imports and a worsening of the trade balance (Osakwe et al. 2019). It does, however, concur with research showing that inflation can enhance the balance of payments, especially in nations with

high levels of price stickiness, where it can boost exports and improve the trade balance (Nwaobi et al., 2020).

Policy Implications

Having seen that it is statistically significant and has a negative impact on balance of payment in Nigeria both in the short and long runs, any exchange rate policy will have a significant effect on the balance of payment of the country. Hence, it is important that the government of Nigeria adopts an exchange rate policy as well other policies that will bring about exchange rate stability in the country, which will in turn increase the balance of payment of Nigeria.

Post Estimation Results

Table 4.5: Breusch-Godfrey Serial Correlation LM Test

Tests	F – Statistics	Probabilities
Breusch-Godfrey Serial Correlation LM Test	1.746310	0.2061
Obs*R-squared	5.912826	0.0520

Source: Author Computation.

The Breusch-Godfrey Serial Correlation result shows that the residuals are not correlated. Hence, there is no autocorrelation.

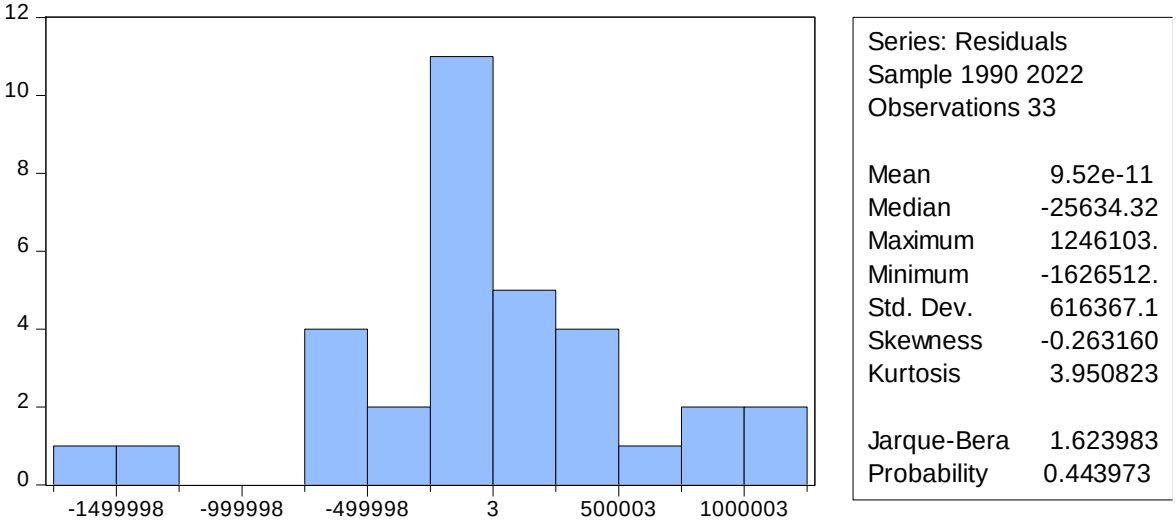
Table 4.6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

	F – Statistics	Probabilities
Tests	2.830403	0.0200
Obs*R-squared	22.69209	0.0655

Source: Author's Computation

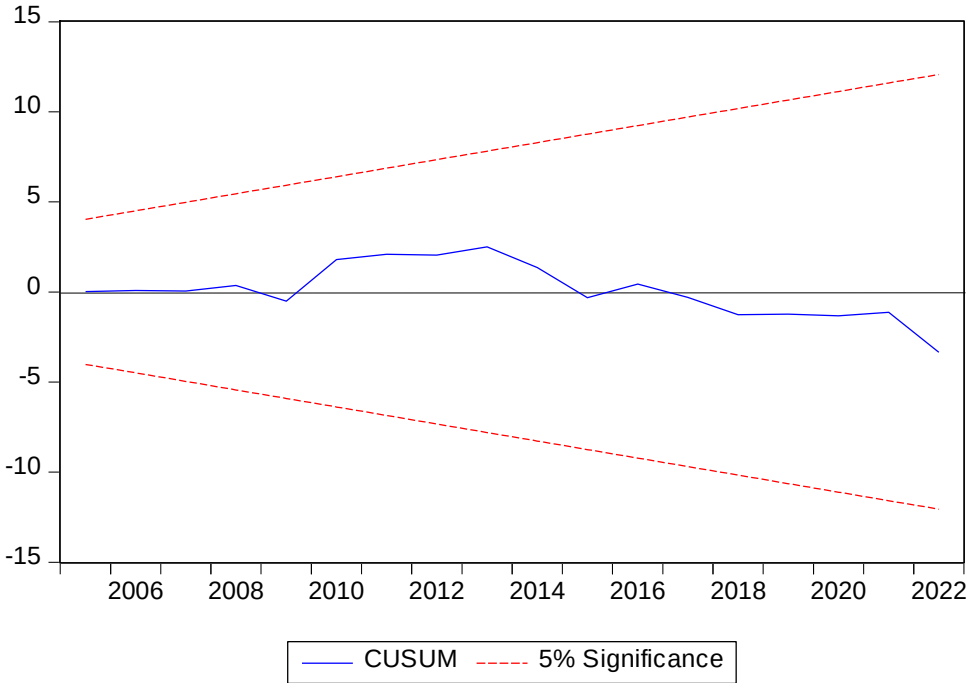
The Breusch- Pagan-Godfrey heteroskedasticity test result shows absence of heteroskedasticity in the model.

Figure 4.1: Jaque-Bera Normality Test



The Jarque – Bera normality result indicates the residuals are normally distributed.

Figure 4.2: CUSUM Stability Tests



The result of the CUSUM stability test indicates that the residuals are stable. This is because the CUSUM lines fell in between the two 5 percent lines.

Conclusion

The study's conclusion shows that fluctuations in exchange rates have a major short- and long-term effect on Nigeria's balance of payments position. Nonetheless, both in the short and long term, government capital expenditures, inflation, and the broad money supply have favorable but negligible effects on Nigeria's balance of payments. These findings have significant ramifications for Nigerian policymakers, emphasizing the necessity of preserving stable exchange rates and investigating alternate policy options to strengthen the nation's balance of payments position.

Furthermore, the results imply that other factors, including the makeup of government spending, the status of the economy, and the level of capital mobility, may have an impact on the impact of government capital expenditures, the broad money supply as a stand-in for monetary policy, and the inflation rate on the nation's balance of payments. All things considered, this study adds to the body of knowledge already available on the factors influencing Nigeria's balance of payments and offers guidance to decision-makers on how to create policies that will strengthen the nation's position in this area.

Recommendations

Based on the findings, the following recommendations were made:

1. The Central Bank of Nigeria should focus on maintaining flexible and stable exchange rates, as it has a negative and significant impact on balance of payments.
2. Government capital expenditure should be carefully planned and executed to ensure that it is targeted towards investments that promote exports and reduce imports.
3. The Central Bank of Nigeria should maintain a stable inflation rate to ensure that it improves the balance of payment position of the country.
4. The government should diversify the economy by promoting non-oil exports and reducing dependence on oil exports.
5. The government should review and adjust its monetary policies especially money supply to ensure that the policies improves the balance of payment position of the country.

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