BALANCE OF PAYMENT AND ECONOMIC GROWTH IN NIGERIA (1984-2024)

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Abstract
This study explored the effect of balance of payments on economic growth in Nigeria. The objectives of the study were to establish the connection between the balance of payments and economic growth. Secondary data were collected from the Central Bank of Nigeria Statistical Bulletin. Real GDP was the dependent variable while balance of payment (capital and current account), exceptional financing and net errors/omission were the independent variables. The Augmented Dickey-Fuller (ADF) test was used to test for stationarity, the results revealed that the variables were stationary at first difference. Also the analysis revealed that there was long run relationship between balance of payment and economic growth of Nigeria. Results from the error correction model revealed that balance of payment exerted a significantly negative effect on economic growth of Nigeria, exceptional financing had negative and significant effect on economic growth, while net error and omissions had positive and significant effect on economic growth of Nigeria. The study concluded that Nigeria's balance of payment has not been favorable in enhancing economic growth. Exceptional financing statistics for

Nigeria are on the increase and this has led to heightened pressure on the economy and slowing down of real gross domestic product. It was recommended that the Nigerian government should strive to boost the country's exports as this is the only way to put the balance of payment statistics on a positive trend and ensure sustained economic growth.
Keywords: Balance of Payments, Economic Growth, Exceptional Financing, Net Error and Omissions, Nigeria.

Introduction
Background to the Study

Right from the time of the classical economists, the theory of trade and payment had been considered as vital in the explanation of the economic development process of any country. This was hinged on the observed long historical interdependence among the various economies of the world. In essence, no country is a complete island to itself. It is for this reason that international trade theorists have always tried to explain observed patterns in national development standards in terms of their differential nature endowment and production efficiency (United Nation, World Economic and Social Survey, 2013). There is positive interaction among production, distribution and exchange across national frontiers, and their implications for economic growth from the central core of trade theory. It can be said that the positive effects of trade on economic growth were first pointed out by Adam Smith (1776). This was the prevailing economic idea, with an exception of the relative hibernation during the marginalist revolution until World War II (Alfonso, 2017).

One of the cardinal economic objectives of the developing countries, including Nigeria is to achieve high economic growth that will lead to rapid economic development and reduce poverty. From whatever theoretical angle that one may look at it, economic growth indicates the ability of an economy to increase production of goods and services with the stock of capital and other factors of production within the economy. The opinion that international trade is a factor to achieve economic growth can be traced to Adam Smith.

Smith (1776) emphasized trade as a vent for surplus production and a means of widening the market. In the same vein, Marshall (1890) acknowledged that causes which determine economic progress of nations belong to the study of international trade. From the early 19th century, international trade was heavily regulated and accounted for a relatively small portion compared with national output. In the middle Ages, European trade was typically regulated at municipal level in the interests of security for local industry and for established merchants. Economic growth remained at low levels in the mercantilist era; average global per capita income is not considered to have significantly risen in the whole 800 years leading up to 1820, and is estimated to have increased on average by less than 0.1% per year between 1700 and 1820. With very low levels of financial integration between nations and with international trade generally making up a low proportion of individual nations' economic growth, balance of payment crises were very rare.

Balance of payments account is composed of four main elements namely; current account balances, capital and financial account balances, balancing items (Errors and Omissions) and reserves balances. Current account balances are further subdivided into trade balances, income balances and transfers balances. Trade balances record the value of exports and imports of both goods and services. Examples of goods are final consumer goods, raw materials and intermediate capital goods while services include transportation, construction services, communication services banking, insurance, tourism, travel services,

financial services, computer and information services, royalties and license fees, personal, cultural and recreational services, government services and expenses on education.

Income balances are comprised of items such as compensation of employees, interest, rent, profits, dividends and royalties received from foreign countries and paid out to foreign countries. Items that make up transfers account balances are gifts, grants and reparation receipts and payments to foreign countries. Transfers can be 2 government transfers or private transfers. Government transfers are normally given either for economic, political or humanitarian reasons (Mannur, 2012).

The balance of payment constrained growth model states that a country's economic growth rate is constrained by the desire to generate foreign exchange and reiterate the function of demand as the motivation for domestic growth. This arises because growth in export and investment growth in import substitution are the only aspect of aggregate demand that can increase GDP growth and reduce foreign constraints (Osuka & Achinihu, 2014). This implies that growth rate may be constrained by the balance of payment as the economy cannot grow faster than what is consistent with the balance of payment equilibrium. The principle of this Keynesian demand side growth theory is that export capability and import attitude may establish a long run economic growth.

Income derived from external trade constitutes the principal medium to finance growing import due to a rise in domestic activities (Jhingan, 2016). This model differs from the supply induced growth models which evaluate economic growth by using factor inputs such as savings, human and physical capital, population growth and initial per capital GDP on economic growth (World Trade Organization, 2019). However, it is pertinent to note that, although the dominant theoretical postulations (beginning with the classical) indicate a positive trade-economic growth nexus, most studies concentrated only on the static effects of trade, as Baldwin (2019) posited that the static gains of trade were of little significance. This led to a series of debates in the last decades on the precise direction of trade and stressing its dynamic effects on economic growth.

Balance of payment helps us understand how people of Nigeria trade the Naira for that of another country as well as the flow of human capital across as indicated by net private non-official capital flows and flows of official reserves. Balance of payments records trade in financial assets and all those international transactions, which involve the exchange of money for something else and even including employees' compensation. The monetary approach to balance of payments which regards balance of payment as a monetary phenomenon and expresses balance of payment as a linear function of monetary variable such as money supply, exchange rate, interest rate and other monetary indicators. This is because; normatively balance of payment determines the national currency exchange that influences the economic activities. When in surplus it leverage the economy against external shocks while when in deficit it makes the economy sensitive to shocks, affect the exchange rate and lead to external borrowings to offset the deficits (Imoughele & Ismila, 2015; Obi, 2021) .

Nigeria over the years has been on the edge of various monetary and macroeconomic policy reforms for the achievement of balance of payment (Ekpo, 2004) to leverage Nigeria, the economic consequences of deficit is the balance of payment such as depleting external reserves and depreciating naira value, for instance the deregulation of the economy in the last quarter of 1986.

In 1990, Nigeria experienced a sharp increase in economic growth to approximately 11.8%, largely driven by oil revenues. However, this growth was not sustained, as the early

1990s were marked by economic volatility and a return to negative growth around 1993–1994 due to structural inefficiencies and external shocks. However, Nigeria's balance of payments remained structurally weak, characterized by heavy reliance on oil exports and a narrow non-oil export base. The global financial crisis of 2008 tested these vulnerabilities. Between 2010 and 2014, economic growth hovered above 6%, reaching a peak of 6.3% in 2014.

The collapse of global oil prices in 2015 triggered another downturn in Nigeria's economy. Real GDP growth fell to 2.65% in 2015, and by 2016, the economy slipped into recession with a contraction of –1.62%. This period saw a significant depletion of foreign reserves, a widening of the current account deficit, and heightened balance of payments pressures.

From 2017 to 2019, Nigeria's economy experienced a modest recovery with growth rates of 0.8% to 2.2%, but the balance of payments remained fragile due to import dependence and sluggish non-oil export performance. The COVID-19 pandemic in 2020 further exacerbated these challenges, pushing the economy into another recession with a contraction of –1.79%. However, a rebound occurred in 2021, with GDP growing by 3.65%, followed by 3.25% in 2022. By 2023, Nigeria recorded a GDP growth of 2.86%, and 3.40% in 2024.

Throughout the 1986–2024 period, Nigeria's economic growth trajectory has been closely tied to fluctuations in oil prices. Despite numerous reforms aimed at economic diversification, the balance of payments remained structurally weak due to persistent import dependence and inadequate growth in non-oil exports.

The movement from fixed exchange rate to flexible exchange rate, import restriction, export promotion policies and overhaul in the macroeconomic policy environment such as the financial sector reform and the business environment. This study therefore examined the relationship between balance of payment and Nigeria economic growth.

Statement of the Problem

The balance of payments (BOP) is a critical macroeconomic indicator that reflects a country's international trade and financial transactions. A persistent deficit or surplus in the BOP can have significant implications for economic growth, employment, and stability. Despite its importance, many developing countries such as Nigeria struggle to manage their BOP effectively, leading to economic instability and hindered growth.

Nigeria recorded negative balance of payment to GDP ratio of -0.94 and -0.39 in 2019 and 2020 respectively. Also, for 2023 and 2024, Nigeria's balance of payment has remained negative at -19.28bn and over -25bn respectively. This implies that Nigeria is spending more on imports, investments and other transactions while earning less from exports. Thus, this situation has serious implications on the overall economy and these implications are what motivated this research.

Furthermore, persistent deficits in BOP can lead to depletion of foreign exchange reserves, currency depreciation, and reduced economic growth. Also, large surpluses in BOP can lead to currency appreciation, reduced competitiveness, and trade tensions. On the other hand, imbalances in balance of payment can affect economic growth, employment, and investment. Thus, managing balance of payment effectively requires careful policy-making, and one sure way of policy formulation is through in-depth research such as this present research.

Objective of the Study

The main objective of this research is to analyze the effect of balance of payment on economic growth in Nigeria. Specifically, the study intends to:

1. analyze the relationship between Current and capital account balance of payment and economic growth in Nigeria;
2. investigate the relationship between exceptional financing from Nigeria's balance of payment statistics and economic growth in Nigeria;
3. assess how Net errors and omissions from Nigeria's balance of payment statistics has affected economic growth.

Research Question

1. What is the relationship between Current and capital account balance of payment and economic growth in Nigeria?
2. What is the relationship between exceptional financing from Nigeria's balance of payment statistics and economic growth in Nigeria?
3. How has Net errors and omissions from Nigeria's balance of payment statistics affected economic growth?

Research Hypotheses

These hypotheses provide a starting point for empirical analysis and testing and they are tested in their null forms as follows:

H01: There is no significant relationship between Current and capital account balance of payment and economic growth in Nigeria.

H02: Exceptional financing from Nigeria's balance of payment statistics has no significant relationship with economic growth.

H03: Net errors and omissions from Nigeria's balance of payment statistics has not significantly affected economic growth.

Scope of the Study

The unit scope is the topic which is balance of payment and economic growth of Nigeria. The study covers Nigeria as the geographic scope because it is domiciled within the economy. The time scope is from 1984-2024. The variables scope include current and capital account balance of payment, exceptional financing from Nigeria's balance of payment statistics, net errors and omissions from Nigeria's balance of payment statistics and real gross domestic product.

Significance of the Study

This research will be beneficial to the following categories of persons

Government: it will enable government to know the position of the country's balance of payment and formulate policies that will be favorable to Nigeria's foreign trade.

Investors: Foreign investors can use the outcome of this study to direct their investment activities towards Nigeria as Nigerian economy is recording more negative BOP meaning that importation far exceeds exports and this is favorable to foreign investors.

Academic community: This research will serve the purpose of enriching empirical knowledge in this area of study.

Literature Review
Concept of Balance of Payment

The balance of payments records an economy's transactions with the rest of the world. Balance of payments accounts are divided into two groups: the current account,

which records transactions in goods, services, primary income, and secondary income, and the capital and financial account, which records capital transfers, acquisition or disposal of non-produced, nonfinancial assets, and transactions in financial assets and liabilities. The current account balance is one of the most analytically useful indicators of an external imbalance. A primary purpose of the balance of payments accounts is to indicate the need to adjust an external imbalance. Where to draw the line for analytical purposes requires a judgment concerning the imbalance that best indicates the need for adjustment. There are a number of definitions in common use for this and related analytical purposes. The trade balance is the difference between exports and imports of goods (Abaidoo & Rexford, 2019).

From an analytical view it is arbitrary to distinguish goods from services. For example, a unit of foreign exchange earned by a freight company strengthens the balance of payments to the same extent as the foreign exchange earned by a goods exporter. Even so, the trade balance is useful because it is often the most-timely indicator of trends in the current account balance. Customs authorities are typically able to provide data on trade in goods long before data on trade in services are available. Balance of payment is the difference in total value between payments into and out of a country over a period. The balance of payments is the method countries use to monitor all international monetary transactions in a specific period (Abaidoo & Rexford, 2019). The balance of payments is usually calculated every quarter and every calendar year.

The balance of payments is a comprehensive and systematic record of a country's economic transactions with the rest of the world, encompassing goods, services, and capital flows within a specified time frame (Pham, 2017). It comprises the current, capital, and financial accounts, each reflecting different types of transactions. The balance of payments statement provides a clear picture of the economic relations between different countries. It is an integral aspect of international financial management. Balance of payments statement provides information pertaining to the demand and supply of the country's currency. A country's balance of payments determines its potential as a constructive economic partner. In addition, a country's balance of payments indicates its position in international economic growth. By studying its balance of payments statement and its components closely, a country would be able to identify trends that may be beneficial or harmful to the economy and take appropriate measures. Now let's understand the different components of the balance of payments.

The balance of payments consists of three main components: current account, capital account and financial. The current account must balance with the combined capital and financial accounts (Atesoglu, 2019).

Current Account

The current account monitors the flow of funds from goods and services trade (import and export) between countries (Bairam, 2018). It includes money received or spent on manufactured goods and raw materials. It also includes revenue from tourism, transportation receipts, revenue from specialized services (medicine, law, engineering), and royalties from patents and copyrights. In addition, the current account includes revenue from stocks (Barro & Sala-i-Martin, 2019).

Financial Account

The financial account monitors the flow of funds pertaining to investments in businesses, real estate, and stocks. It also includes government-owned assets such as gold and Special Drawing Rights (SDRs) held with the International Monetary Fund (IMF). In

addition, it includes foreign investments and assets held abroad by nationals. Similarly, the financial account includes a record of the assets owned by foreign nationals (Atesoglu, 2019). The financial account is a measurement of increases or decreases in international ownership of assets. The financial account monitors the flow of funds pertaining to investments in businesses, real estate and stocks. It also includes government-owned assets such as gold and Special Drawing Rights (SDRs) held with the International Monetary Fund (IMF). The financial account is part of a country's balance of payments (Imoisi, Olatunji & Ekpenyong, 2013).

Capital Account

The capital account monitors the flow of international capital transactions. These transactions include the purchase or disposal of non-financial assets (for example, land) and non-produced assets (Bairam, 2018). The capital account also includes money received from debt-forgiveness and gift taxes. In addition, the capital account records the flow of the financial assets by migrants leaving or entering a country and the transfer, sale, or purchase of fixed assets (Barro & Sala-i-Martin, 2019**).**

Concept of Economic Growth

Coricelli (1997) defined Economic growth as the increase in the level on goods and services of a country within a fixed period of time, in this case economic growth will be measured in term of Gross Domestic Product. Therefore GDP is defined by Jeff Holt (2007) as the total market value of all final goods and services produced annually within the boundaries of the country whether by national or foreigner-supplied resources. Economic growth is the increase in the level on goods and services of a country within a fixed period of time, in this case economic growth will be measured in term of Gross Domestic Product expressed in the percentage change Hausmann Rodrik and Velasco (2008).

2.2 Theoretical Review
2.2.1 Cumulative Causation Theory

The theory of cumulative causation developed by Kaldor (1970) views regional growth as determined by the growth of demand for a region's exports. Kaldor's first law is that there exists a strong causal relation between the growth of manufacturing output and the growth of GDP. His second law of growth (1966) states that the manufacturing sector is subject to substantial increasing returns to scale. The central point of this law not only provides support for the hypothesis that the manufacturing sector is the 'engine of growth', but also sets the basis for the cumulative causation models of growth. According to Verdoorn's law (1949), a positive correlation exists between the growth of productivity, measured by the rate of growth of output per employee and the growth rate of employment. Later Kaldor (1967) modified this reasoning by replacing employment growth by output growth.

The resulting relationship became known as the Verdoorn-Kaldor law, which suggests that growth of productivity in manufacturing is an endogenous result of the growth of output, because of static and dynamic economies of scale. Economies of scale can be divided into two groups: economies resulting from large-scale production (static economies of scale); and economies of scale derived from 'the insight that the spatial concentration of economic activity can produce externalities' (dynamic economies of scale) (Malecki and Varaiya, 1986). The latter consists of cumulative advantages that originate from the growth of industry itself, like learning-by-doing, and the development of skill and know-how, the opportunities for easy communication of ideas and experience, and the opportunity of ever-increasing differentiation of process and of specialization in human activities (Kaldor, 1970).

Kaldor's third law states that there exists a strong positive causal relation between the growth rate of the manufacturing sector and that of productivity outside the manufacturing sector, because the diminishing returns in agriculture and the small service sectors will supply excessive labour to the industrial sector. If the marginal product of labour is below the productivity in these sectors, the productivity will rise as employment is contracting. According to Thirlwall (2002), Kaldor's arguments on the driver of growth in the manufacturing sector come from demand in agriculture in the early stages of development, and export growth in the later stages. In the later stages, a fast growth of exports and output may set up a virtuous circle of growth with rapid export growth leading to rapid output growth, and rapid output growth leading to fast export growth through the favorable impact of output growth on competitiveness.

2.2.2 Modern Theory of Trade

The Heckscher-Ohlin modern theory of trade explains why countries trade in goods and services with each other. Condition for trade between two countries includes differences in the availability of the factors of production. For instance, if one country has many machines but few workers, while the other country has a lot of workers but few machines differences in factor exists.

Specialization is another condition; a country specializes in the production of goods that it is particularly suited to produce. Specialization in production and trade between countries generates, according to this a higher standard-of-living for the countries involved. The production of goods and services requires capital and workers. Some goods require more capital – technical equipment and machinery - and are called capital intensive. For instance these goods are cars, computers, and cell phones, while other goods require less equipment to produce and rely mostly on the efforts of the workers.

2.2.3 New Trade Theory

According to Ezeala-Harrison (1999), the new trade theory (NTT) emanates from the new growth theory (NGT) that emerged within the international trade and economic growth and development literature during the early 1990s. The NGT emphasizes technological progress (and the determinants of technological progress) as well as the externalities that the development and application of new knowledge confers, as explicit variables that determine economic growth.

Apparently, it posits that innovations take place more in some countries than others because of, among other things, differences in the development of science in the countries, the relative levels and quality of their research institutions, and the relative levels and quality of their educational systems. The central point of this theory is the diffusion of knowledge between firms as knowledge is given as a key factor of production. Therefore, the main fundamental nature of NGT is its implications that firms should invest more in knowledge, as much as in other capital resources in order to be productive or maintain productivity.

The association between the new growth theory and the modern theory of trade lies in their common magnitude of technology and the diffusion of knowledge in the relative flow of the gains from trade to trading countries. These theories are regarded as 'new' as they derive from the traditional neoclassical trade theories based on the principles of comparative advantage, which emphasizes the differences between nations' resource endowments (Ezeala-Harrison 1999). The modern theory of trade was developed to explain high levels of intra-industry trade and the large proportion of world trade that takes place between similar countries (Dicken 1998; Poon 1997). It suggests that the existence of

increasing returns to scale and imperfect competition provides reasons for specialization and trade, even when countries are similar in factor endowments (Krugman 1979; Helpman and Krugman 1985).

2.2.4 Theoretical Framework

This research is anchored on the new trade theory. The theory posits that innovation takes place more in some countries than others because of, among other things, differences in the development of science in the countries, the relative levels and quality of their research institutions, and the relative levels and quality of their educational systems. Thus, a country such as Nigeria can develop local capacity in order to enhance exportation of her knowledge thereby gaining more in exports while decreasing imports. This creates a balance in the country's balance of payment and sets the economy on a long run growth. This theory emphasizes exchange of non-tangible goods (services) in place of physical goods in order to maintain a positive balance of payment and economic growth.

2.3 Empirical Review

Muasya and Muturi (2023) examined the Effects of balance of payment on economic growth of east African region countries. The study employed descriptive research design. The time series data ranged from 1995 -2020. Regression, descriptive statistics and analytic statistical methods was employed in the analytical process and results presented in tables, graphs and figures for clarity and ease of understanding. The findings revealed a long-run relationship among all the variables. Moreover, all the variables under consideration were found to have long run significant impacts on economic growth in East African region.

Adelegan and Abraham (2022) conducted a study on the determinants of balance of payments in Nigeria. The Autoregressive Distributed Lag Model (ARDL) was used in the investigation. Long-term results from the ARDL regression showed that the exchange rate coefficient was negative, whereas short-term results showed a positive value. Also, the coefficients of FDI, GDP growth, interest rates, and crude oil prices were positive and significant.

Efanga, Ihemeje, Egwu, Yamta, Biradawa & Ikwuagwu (2020) investigated the role of balance of payment on economic growth in Nigeria. Data were obtained from secondary sources; Central Bank of Nigeria Statistical bulletin of 2018. Unit root test on the time series data displayed a combination of 1(0) and 1(1) variables, the Autoregressive Distributed Lag (ARDL) Model was employed for data estimation. Findings reveal that: balance of payment exerted a positive and significant impact on gross domestic product in Nigeria across the period covered by this study.

Fasanyaa and Olayemi (2018) examined the Balance-of-Payment (BOP) constraint growth model in Nigeria for the period of 1980 to 2012 using the bounds testing Auto regressive Distributed Lag (ARDL) approach. The ARDL test suggests that the variables in the framework have a long run relationship. The empirical findings reveal that import is cointegrated with relative price and income, and the equilibrium growth rates coincide with actual growth rates, hence, the result shows that the Thirlwall's law, of actual growth rate being equal to the predicted growth rate by the balance of payment current account equilibrium holds in Nigeria. This reason may be due the fact that the economy of Nigeria depends mainly on international trade even though oil dominates the export.

Osuka, Otiwu, and Kalu (2024) examined the effect of balance of payment on economic development in Nigeria from 2000 – 2022. Import and export were used as a proxy for balance of payment, while per capita income was used for economic development in

Nigeria. Multiple linear regression model was used to test hypotheses and the findings revealed that import and export have significant effect on per capita income in Nigeria. In conclusion, balance of payment has significant effect on per capita income in Nigeria.

Bakari and Mabrouki (2020) investigated the relationship between imports and economic growth in Panama, annual data for the periods between 1980 and 2015 were tested using the Johansen cointegration analysis of Vector Auto Regression Model and the Granger-Causality tests. According to their result of the analysis, it was determined that there is no relationship between exports, imports and economic growth in Panama. On the other hand, they found that there is strong evidence of bidirectional causality from imports to economic growth and exports to economic growth.

Kotishwar (2020) showed that Short-run causality result shows the presence of short run causality between exports, domestic investment and exchange rate to GDP, running from the variables to GDP. Lawal and Ezeuchenne (2020) showed that there is a long-run relationship between international trade and economic growth, import and trade openness are both insignificant in the short-run but significant in the long-run while export and balance of trade are significant in both the short and long-run.

Ali, Yassin, Ali and Dalmar (2018) investigated the impact of exports and imports on the economic growth of Somalia over the period 1970-1991. They applied econometric methods such as the OLS (Ordinary Least Squares) technique. The Granger Causality and Johansen Co-integration tests were also used for analyzing the long-term association. It was found that economic growth does not Granger Cause Export but was found that export Granger Cause GDP. So, this implies that there is unidirectional causality between exports and economic growth. Also, there is a bidirectional Granger Causality between import and export.

Barbara and Alberto (2011) examined the nexus between trade and economic growth in Italy has been widely debated by historiography. The outcome suggests that three variables, GDP, import, export commove in the long run but the direction of causality varies across time. However, there are also other studies that do not support the relationship between these variables. There is no causal relation between exports and economic growth, namely exports and economic growth are both the result of the development process and technological change.

Kogid, Mulok, Ching, Lily, Ghazali and Loganathan (2011) analyzed the relationship between the economic growth and the import in Malaysia from 1970 to 2007. Results show that there is no co integration exists between economic growth and import, but there exists bilateral causality between economic growth and import. Results also show that import could indirectly contribute to economic growth, and economic growth could also directly contribute to import. These findings may be vital for future economic growth policies.

Akhter (2015) investigated the relationship between import, and GDP growth. "They conclude that the impact of exports on economic growth is positive and an opposite scenario is found in the case of import. All these research investigated the relationship between import, and GDP growth by taking of different control variables like import and remittance." But no evidence found in the literature that considered government expenditure and inflation which is the key elements of GDP.

Mushtaq, Nazir, Bashir, Ahmed and Nadeem (2014) tested the relationship of two figures, import-export by using VAR Analysis. According to the study it was determined that there were causality relationship between these variables, the variable import influenced

GDP, and GDP influenced the variable export. Between export and import, two way Causality relationships released mutually.

In the same way, the results of causality overlap with variance decomposition test Omoju and Adesanya (2012) investigate international trade and growth in developing country using Nigeria as a case study. "They make use of secondary data from 1980 – 2010 and applying the Ordinary Least Square (OLS) regression method, they find out those exports, imports and exchange rate have a significant positive impact on economic growth in developing countries.

Ogbokor and Meyer (2017) tested the long run relationship between external trade and economic performance in South Africa. Their results indicate cointegration relationships between the investigated variables and also show that exports contributed more to economic performance as compared to the openness of the economy and exchange rate. Based on these results, they concluded that external trade will remain one of the key propellers of economic growth in South Africa

Malefane and Odhiambo (2018) investigated the dynamic impact of trade openness on economic growth in South Africa. Their long run empirical results show that trade openness had a positive and significant impact on economic growth when the ratio "total trade-GDP" was used as proxy of trade openness, but not when other proxies were used.6 Their short run empirical results showed that when the first three proxies of openness were used, trade openness had a positive impact on economic growth, but not so when the trade openness index was used. Based on these results, they concluded that promoting policies that support international trade was relevant for the South African economy

Moyo and Khobai (2020) investigated the empirical relationship between trade openness and economic growth in sub-Saharan Africa (SSA). Their results showed that there was a significant positive relationship between trade openness and economic growth. Based on these results, they concluded that openness to international trade had a significant positive impact on economic growth in SSA.

Sheridan (2014) used ordinary least squares and fixed effect estimation as well as regression tree technique to explore the potential relationship between disaggregated exports and economic growth in a panel of 117 developed and developing countries over the period 1960 to 2009. The study finds that manufacturing exports are more highly correlated with economic growth than primary exports, conditional on a country having attained a threshold of human capital. Hence, concluding that investing heavily in the manufacturing sector in a country without the necessary skilled workforce is likely to be an inefficient use of resources.

Mushtaq et al (2014) explored association among government spending, exports, imports and economic growth proxied using GDP for eight countries (China, Indonesia, Japan, Malaysia, Pakistan, Philippines, Sri Lanka and Thailand) over a period of 1995 to 2011 using panel cointegration test and fixed effects model. The results show that government spending, exports and domestic private investment affect economic growth positively and significantly while imports affect economic growth negatively and significantly.

Yüksel and Zengin (2016) analyzed six developing countries (Argentina, Brazil, China, Malaysia, Mexico and Turkey) over the period 1961 to 2014 using Engle Granger cointegration analysis(Engle and Granger, 1987) and vector error correction model similar to Kim, Lim, and Park (2007) as well as Toda Yamamato causality analysis (Toda & Yamamoto, 1995) to examine the relationship between imports, exports and economic growth. The results find support for the export-led growth hypothesis for Argentina only and no causal

relationship between imports and economic growth in any of the other countries." The study also finds a causal relationship from imports to exports in China and Turkey and from exports to imports in Malaysia.

Yee Ee (2015) examined the validity of export-led growth hypothesis in four Sub-Saharan African countries (Botswana, Equatorial Guinea and Mauritius) over the period 1985-2014using fully modified ordinary least square (FMOLS) and dynamic OLS (DOLS). The results find that the effect of export led growth is positive and significant, indicating that exports explain not only the cyclical changes in output (short term) but also in the long run trend."

Elish (2018) examined the Thirlwall Balance of Payment (BOP) constraint growth model in the case of Egypt for the period of 1980 to 2016 using the bounds testing Auto Regressive Distributed Lag (ARDL) model. A long run relation between imports, gross domestic product (GDP) and relative prices having a negligible effect as suggested by the model validates Thirlwall's assumption. The actual growth rate was found to be equal to the calculated potential growth rate given the BOP constraint assumption. The empirical results support the historical development of the Egyptian BOP analysis which shows how the external balance was and remains a major factor affecting Egypt's growth rate.

Lélis, Silveira, Cunha and Haines (2018) analysed the balance-of-payments-constrained growth in Brazil considering Thirwall's Law (1979). The study estimated export and import demand functions using two econometric models: vector error correction and structural state space model for the period of 1995–2013. The results suggest that the balance of payments is a constraint to the Brazilian economic growth.

Literature Gap

A cursory examination of the empirical review shows that previous research is mainly foreign or trade liberalization variables none of the works focused on the components of balance of payment and how they affect economic growth prospects of Nigeria. Also, many studies on the relationship between balance of payment and economic growth have been conducted since the advent of the trade mis-invoicing theory; the studies reviewed focused on the traditional measures of balance of payment such as exchange rate. While these traditional measures are important indicators of balance of payment, there is a need to directly assess balance of payment and economic growth using contemporary measures such as capital and current account, exceptional financing and net errors and commission which are the four components of balance of payment according to CBN (2024).

RESEARCH METHODOLOGY
3.1   Research Design

The design is *ex-post facto* design because the research did not use random assignment. Since the study used already available published random data, this research design is justified. The design is intended to provide an elaborative assessment of the trend and the association of the variables (Onwuegbuzie & Turner, 2007). This study utilized secondary data. The data is described as time series data that is information on a variable of study over the periods of one year.

3.2   Model Specification

The model modifies the specification of Osuka, Otiwu, and Kalu (2024) by replacing import and export (used as a proxy for balance of payment) with capital and current account balance of payment while adopting real GDP as a measure of growth rather than per capita income. The model is specified thus:

$RGDP = f(CCBOP, EF, NEO)$ (3.1)

To have the estimable version of above models 3.1 can be rewritten to have

$RGDP_t = \beta_0 + \beta_1 CCBOP_t + \beta_2 EF_t + \beta_3 NEO_t + U_t$ (3.2)

Where

RGDP = Real gross domestic product

CCBOP = Current and capital account balance of payment

EF = Exceptional financing

NEO = Net errors and omissions

β_0 = Constant

$\beta_1 - \beta_3$ = Coefficients of independent variables

U_{it} = Error Term

A-Priori Expectation

Base on theories such as trade theory and empirical results examined in this study, the variables are expected to have a positive effect on the dependent variables. The mathematical implication is stated as follows: $\beta_1 > 0$; $\beta_2 > 0$ and $\beta_3 > 0$.

Sources of Data

We collected secondary data for estimation from the Central Bank of Nigeria financial stability report (2024), Central Bank of Nigeria Economic reports (2024) and National Bureau of Statistics (2024). The data for this study are time series data ranging from 1984-2024.

Data Analysis Techniques

Appropriate levels of analysis were conducted, in each case ranging from the global analysis (that reveals the overall utility of the models) to analysis of relative statistics that test the hypotheses. This study applies unit root test first so as to uncover the true nature of stationary-properties of all the variables under consideration. This is necessary in order not to run into the problem of spurious regression since unit root problems are common features encountered in most time series studies.

However, the simple regression model was employed as the estimation technique for this study. Johansen and Jusellius Co-integration Test was applied to determine the long run equilibrium of the variables in the model, while the Granger Causality Test was applied in checking the underlying structure of the causal relationship between the variables.

Ordinary least squares (OLS) is a method for estimating the unknown parameters in a linear regression model. Hutcheson (2011) defined ordinary least square (OLS) regression as a generalized linear modeling technique that may be used to model a single response variable which has been recorded on at least an interval scale. This method minimizes the sum of squared vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation.

OLS technique may be applied to single or multiple explanatory variables and also categorical explanatory variables that have been appropriately coded. In single explanatory variables, the relationship between a continuous response variable (Y) and a continuous explanatory variable (X) may be represented using a line of best-fit, where Y is predicted, at least to some extent, by X.

If this relationship is linear, it may be appropriately represented mathematically using the straight line equation 'Y = a + ßx

For the multiple explanatory variables additional variables are added to the equation. The form of the model is the same as in a single response variable (Y), but this time Y is predicted by multiple explanatory variables (X1 to X5).

$$Y = \beta 0 + \text{ß}1X1 + \text{ß}2X2 + \text{ß}3X3 \tag{3.3}$$

The interpretation of the parameters (ß's) from the above model is basically the same as for the simple regression model, but the relationship cannot be graphed on a single scatter plot. A indicates the value of Y when all variables of the explanatory variables are zero. Each ß parameter indicates the average change in Y that is associated with a unit change in X, whilst controlling for the other explanatory variables in the model. Model-fit can be accessed through comparing deviance measures of nested models.

The significance of the change in the deviance scores can be accessed through the calculation of the F-statistic using the equation provided above (these are, however, provided as a matter of course by most software packages). As with the simple OLS regression, it is a simple matter to compute the R-square statistics.

Data Presentation and Interpretation of Results

4.1   Data Presentation

Table 4.1: Real GDP, capital and current account balance of payment, exceptional financing and net errors and omission, 1984-2024

4.2   Results of Data Analysis

The summary of Augmented Dickey Fuller (ADF) unit tests carried out on each of the variables is shown below. The test is done at 5% critical value. The cointegration test follows. The unit root test is summarized as follows:

4.2.1   Unit Root Test

Table 4.2: Summary of Unit Root Test Result

	ADF Test statistics			
Variable	At Level	1st Difference	Decision	Order of Integration
lnRGDP	-0.2236	-4.5675	Stationary at 1st difference	I(1)
lnCCBOP	-2.1266	-8.3686	Stationary at 1st difference	I(1)
lnEF	-1.4556	-8.5543	Stationary at 1st difference	I(1)
lnNEO	-0.3456	-3.3456	Stationary at 1st difference	I(1)
Critical values at 5% Level = *-2.9369* Critical values at 5% 1st diff = *-2.9411*				

Source: Researchers' Computation using E-Views 9.0

The unit root test above reveals that real GDP, capital and current account BOP, exceptional financing (EF) and net error and omissions (NEO) are all stationary at first difference and are said to be integrated of order one, I(1). This implies that the data have statistical properties that do not vary over time and so can be used for forecasting purposes.

4.2.2   Johansen Cointegration Test

Null hypothesis (H0): No long run relationship exists amongst the variables (no cointegration)
Alternate hypothesis (H1): There is long run relationship amongst the variables

Table 4.3: Summary of the Johansen Cointegration Test

Trace Statistic					Max-Eigen Statistic		
Hypothesized No of CE (S)	Eigen-Value	Trace statistics	5% Crit. Value	Prob.	Max-Eigen stat.	5% Crit. value	Prob.
None *	0.611705	98.3485	69.81889	0.0001	36.8936	33.87687	0.0211

At most 1*	0.547114	61.4548	47.85613	0.0016	30.89249	27.58434	0.0181
At most 2*	0.402231	30.5623	29.79707	0.0408	20.0674	21.13162	0.0699
At most 3	0.220295	10.4949	15.49471	0.2446	9.70475	14.26460	0.2321

Note: **Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
**Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

Table 4.3 summarizes the Trace and Max-eigen statistics for the Johansen cointegration test. Both statistics show that at least one cointegrating equation existed at 5% level. The criteria for decision here is that there must be at least one cointegrating equation to reject the null hypothesis of no cointegration. Therefore, the Trace test indicated 3 cointegrating equations while the Max-eigen statistics showed 2 cointegrating equations. This surpasses the decision criteria and so we reject the null hypothesis and conclude that there is long run relationship between balance of payment and economic growth of Nigeria.

Model Estimation
4.3.1   Error Correction Model Estimation
The estimation of the Error Correction Model is necessary in order to reconcile the short-run behavior with its long-run behavior, and to investigate the adjustment mechanisms towards the long-run equilibrium.

Table 4.4: Error Correction Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
lnCCBOP	-0.150981	0.039557	-3.816796	0.0321
lnEF	-0.046997	0.017720	-2.652201	0.0458
lnNEO	0.649407	0.117481	5.527762	0.0169
C	8.531978	0.596849	14.29503	0.0000
ECM(-1)	-0.163516	0.037653	-4.342708	0.0302

R-squared	0.902228	Durbin-Watson stat.	1.852713
Adjusted R-squared	0.812852	Prob(F-statistic)	0.000000
F-statistic	59.05872		

Source: Researchers' Computation using E-view 9

The speed of adjustment is our focus here as we try to show the dynamics of short run adjustments of balance of payment towards the long run equilibrium in relation with Nigeria's economic growth. Table 4.3 above represents the result of the short run estimation and it shows that the capital and current account BOP has negative coefficient likewise exceptional financing. Both variables decrease real GDP by 0.1509 and 0.0469 units respectively. What this implies is that balance of payment for Nigeria decreases economic growth. In other words, Nigeria's negative balance of payment is affecting the economy negatively and needs urgent measures to retrace the trend.

Furthermore, exceptional financing which represents the financial transactions undertaken by Nigeria's central bank to address imbalances in the international payments has also not been favorable to the economy. Exceptional financing accounted for 0.047 units decrease in real GDP for the period under review.

Conversely, net errors and omission, which serves the purpose of a balancing item to account for missing or misreported transactions exerted positive relationship with real gross domestic product increasing it by 0.6494 units.

The short run estimates further shows that net error and omissions increases economic growth by 0.0494 units which means that it exerts positive effect on the Nigerian economy.

The speed of adjustment shows negative and significant coefficient meaning that the short run model has good predictive properties. The adjustment mechanism is therefore estimated at 16.35% annually. This implies that holding balance of payment variables at a constant returning or decreasing rate of 16.35% annually, there will be long run equilibrium in economic growth.

4.3.2   Test of Hypotheses

Test of Hypothesis One

H_{01}:   There is no significant relationship between Current and capital account balance of payment and economic growth in Nigeria.

t-statistic = -3.8168 (*p-value* = 0.0458)

t-table = $t_{0.025,36}$ = 1.960

Decision Rule: Since the t-statistic is greater than the t-table value at 5% level of significance, we reject the null hypothesis and conclude that there is significant relationship between current and capital account balance of payment and economic growth in Nigeria. Therefore, balance of payment (current and capital account) decreases economic growth significantly by 0.0469 units.

Test of Hypothesis Two

H_{02}:   Exceptional financing from Nigeria's balance of payment statistics has no significant relationship with economic growth.

t-statistic = -2.6522 (*p-value* = 0.0458)

t-table = $t_{0.025,36}$ = 1.960

Decision Rule: The t-statistic is greater than the t-table value at 5% level of significance; therefore the null hypothesis is rejected and the study concludes that exceptional financing from Nigeria's balance of payment statistics has significant relationship with economic growth. This implies that exceptional financing decreases economic growth of Nigeria significantly by 0.0469 units based on the coefficient value.

Test of Hypothesis Three

H_{03}:   Net errors and omissions from Nigeria's balance of payment statistics has not significantly affected economic growth.

t-statistic = 5.5278 (*p-value* = 0.0169)

t-table = $t_{0.025,36}$ = 1.960

Decision Rule: The t-statistic is greater than the t-table value at 5% level of significance, therefore we reject the null hypothesis and conclude that net errors and omissions from Nigeria's balance of payment statistics has significantly affected economic growth. In other words, net errors and omissions from Nigeria's balance of payment increases economic growth significantly by 0.6494 units.

Diagnostic Tests

The post-estimation tests are also called the diagnostic tests. The first post-estimation test is the autocorrelation test which gave a Durbin Watson value of 1.8117. The Durbin Watson

statistic suggests that there is no autocorrelation in the model since the DW value of 1.8117 tends towards 2 than to 0. In addition, the Breusch Pagan Godfrey Heteroskedasticity test indicated that the variance or errors are not the same over the sample period, as indicated by the *p-value*. However, we ignore the heteroskedasticity.

Evidence from the cumulative sum (CUSUM) test showed that the model exhibited long run stability because the cumulative sum CUSUM line is inside the upper and lower bounds 5% critical value lines (See figure below).
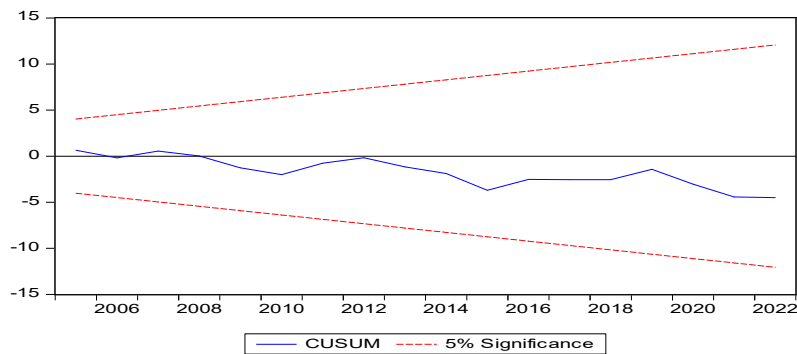

Figure 4.1: Cumulative Sum (CUSUM) line

The CUSUM line above shows that in the long run, the model achieved stability since the cumulative sum line falls within the critical value lines. Finally, the adjusted R-squared has a value of 0.8128 indicating that balance of payment variables jointly accounted for up to 81.28% of the variations in Nigeria's economic growth.

Discussion of Results

The data were tested for stationarity since they are time series in nature. The result showed that they were stationary at first difference or integrated of order 1 i.e. I(1) thereby giving the possibility of co-integration amongst the variables. The first difference stationarity of the data means that the statistical properties of the data were found to be constant and did not vary with time. The Johansen cointegration test used both the Trace Statistic and Max-Eigen Statistic to ascertain whether a long run relationship existed amongst the variables. The result showed that a significant long run relationship exist amongst the variables, thus proceeded with the Error Correction Model (ECM) estimates.

The result of the short run model showed that balance of payment (current and capital account) decreased economic growth by 0.1509 units. The economic implication of this is that Nigeria is spending more on imports that on exports and this implies bad omen for the economy given the fact that Nigeria has been projecting local manufacturing in recent times. Nigeria is currently transferring wealth to other nations of which the implication is reduction in demand for Nigerian made products thus slowing down economic growth. This is currently the situation in Nigeria. For East African countries, Muasya and Muturi (2023) found positive effect of balance of payment on economic growth. Also, Efanga *et al* (2020) and Osuka *et al.* (2024) found positive effect of BOP on Nigeria's economy. This is in contrast with the current finding and goes to show that current data on BOP has not been favorable and this is what previous studies did not incorporate.

Going further, the analysis revealed that exceptional financing exerted a significantly negative effect on the economy meaning that changes in exceptional financing decreases real gross domestic product significantly. Thus, the short term relief which exceptional financing offers to the Nigerian balance of payment has not been favorable as it makes the Nigerian economy to be vulnerable to external shocks. Elish (2018) rightly noted that

exceptional financing may be provide short term buffer but its long run implication is harmful o the economy as was the case for Nigeria.

Net error and omissions which represents the payment made to balance Nigeria's trade activities in order to account for missing or misreported transactions has positive and significant effect on growth. This means that capital inflow may be higher than recorded and potential inaccuracies in Nigeria's balance of payment exist. Thus, the positive effect it exerts on the economy may mean that some capital inflows are not being recorded.

The joint significance of balance of payment variables was confirmed by the F-statistic value while the model exhibited high fitness with 81.28 per cent explanatory coefficient. Also, there was long run stability in the model because the cumulative sum test showed that the lines were within the 5% bands.

Summary of Findings, Conclusion and Recommendations

Summary of Findings

The findings are summarized as follows:

1. There is significant relationship between balance of payment (current and capital account) and economic growth in Nigeria.
2. Exceptional financing decreases economic growth of Nigeria significantly.
3. Net errors and omissions from Nigeria's balance of payment statistics had significant positive effect on economic growth of Nigeria.

Conclusion

This study investigated the effect of balance of payment and economic growth in Nigeria for the period 1984 – 2024. Data on real gross domestic product was used as a measure of economic growth while balance of payment, exceptional financing and net error and omissions were the independent variables. The findings led to the conclusion that Nigeria's balance of payment has not been favorable in enhancing economic growth. Exceptional financing statistics for Nigeria are on the increase and this has led to heightened pressure on the economy and slowing down of real gross domestic product. This serves as caveat to the monetary authority because it goes a long way to prove that Nigeria's balance of payment handling is not satisfactory as there are many unreported transactions. These unreported transactions have led to negative balance of payment and the potential decline in the economy in the long run is imminent if the trend is not reversed.

Recommendations

The following recommendations which are stemming from the findings are very necessary to be considered:

1. The Nigerian government should strive to boost the country's exports as this is the only way to put the balance of payment statistics on a positive trend and ensure sustained economic growth.
2. The monetary authority in Nigeria should decrease the rate of exceptional financing as it puts more pressure on the country's debt burden. Scaling up production can help Nigeria save up funds to finance imbalances in the balance of payment.
3. The Central Bank of Nigeria should formulate a workable and favorable trade policy that will encourage more exports. Also, focus of government should be on improving balance of payment data collection accuracy and ensuring thorough auditing of Bop data for Nigeria.

Suggestjons for Further Research

The researcher suggests that further research should be conducted in the area of volatility of balance of payment with intervening effect of investment on Nigeria's economic growth. Also, other econometric techniques like the ARCH model GARCH model and VAR model should be explored in the analysis of this study.

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Appendix

Null Hypothesis: LNRGDP has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.223646	0.7710
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNRGDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.567507	0.0037
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LNCCBOP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.126669	0.1060
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNCCBOP) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.368639	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LNEF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.455635	0.6495
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNEF) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.554301	0.0000
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LNNEO has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.345609	0.9001
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNNEO) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.345692	0.0002
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

*MacKinnon (1996) one-sided p-values.

Date: 11/07/25   Time: 07:55
Sample (adjusted): 1984 2024
Included observations: 41 after adjustments
Trend assumption: Linear deterministic trend
Series: LNRGDP LNCCBOP LNEF LNNEO
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.611705	98.34853	69.81889	0.0001

At most 1 *	0.547114	61.45488	47.85613	0.0016
At most 2 *	0.402231	30.56239	29.79707	0.0408
At most 3	0.220295	10.49491	15.49471	0.2446

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.611705	36.89365	33.87687	0.0211
At most 1 *	0.547114	30.89249	27.58434	0.0181
At most 2	0.402231	20.06748	21.13162	0.0699
At most 3	0.220295	9.704751	14.26460	0.2321

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Dependent Variable: LNRGDP
Method: Least Squares
Date: 11/07/25   Time: 07:56
Sample (adjusted): 1984 2024
Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNCCBOP	-0.150981	0.039557	-3.816796	0.0321
LNEF	-0.046997	0.017720	-2.652201	0.0458
LNNEO	0.649407	0.117481	5.527762	0.0169
C	8.531978	0.596849	14.29503	0.0000
ECM(-1)	-0.163516	0.037653	-4.342708	0.0302

R-squared	0.902228	Mean dependent var	10.45573
Adjusted R-squared	0.812852	S.D. dependent var	0.525412
S.E. of regression	0.176657	Akaike lnEFo criterion	-0.485269
Sum squared resid	0.998651	Schwarz criterion	-0.226703
Log likelihood	15.22012	Hannan-Quinn criter.	-0.393273
F-statistic	59.05872	Durbin-Watson stat	1.811713
Prob(F-statistic)	0.000000		

Heteroskedasticity Test: White

F-statistic	3.032042	Prob. F(14,26)	0.0070
Obs*R-squared	25.42627	Prob. Chi-Square(14)	0.0306
Scaled explained SS	14.01185	Prob. Chi-Square(14)	0.4488

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.908886	Prob. F(2,34)	0.0643
Obs*R-squared	34.89073	Prob. Chi-Square(2)	0.0000