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The Moderating Effect of Governance on the Relationship Between Exchange Rate and Economic Performance in Nigeria

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ABSTRACT

The study examined the moderating effect of governance on the relationship between exchange rates and economic performance in Nigeria from 1996 to 2024. This study focused at the impact of exchange rate, governance index and their interaction on economic growth (measured as GDPGR), per capita income (PCI), and exports (EXP). Time series data was analysed using the Augmented Dickey-Fuller unit root test and Autoregressive Distributed Lag (ARDL) method. The results showed that the three models contain a mixture of integration orders. In the long and short run, there was no significant effect of exchange rate, governance and their interaction on GDP growth. The error correction term was -0.110 ($p = 0.002$). This implies that 11% of the model was corrected. Governance had a marginal effect on PCI in the short run with a positive coefficient of 0.038 ($p = 0.089$). Exchange rate and interaction were insignificant. Error correction was -0.088 ($p < 0.01$), meaning 8.8% of the model was corrected. Regarding exports, exchange rate had a positive and significant effect on exports in the long run with a coefficient of 0.814 ($p = 0.047$). Governance had no significant effect on exports with a negative coefficient of -0.516 ($p = 0.270$). Interaction had a negligible effect with a positive coefficient of 0.125 ($p = 0.199$). Error correction was -0.387 ($p < 0.01$), meaning 38.7% of the model was corrected. Overall, there is no evidence of any significant moderating effect of governance in the three models. It was recommended that exchange rate stability, diversification of exports and improved governance institutions should be implemented to improve economic performance in Nigeria.

INTRODUCTION

Economic performance does not occur in a vacuum, it is a function of the interrelationship of macroeconomic conditions, productive capacity, external sector conditions and the institutional setting in which economic activities occur (Shimawua, 2021). Of these factors, the exchange rate is important because it affects the relative prices of domestic and foreign goods, the cost of imported inputs, export competitiveness, investment and the transmission of external shocks to domestic economic activity. Empirical studies have shown that exchange rate movements have a significant effect on economic growth, but the direction and magnitude of the relationship differ among economies and institutional settings (Habib *et al.*, 2017; Demir & Razmi, 2020). Moreover, recent evidence points to the fact that exchange rate volatility can have different implications for developed and developing economies due to differences in financial structures and exposure to external shocks (Sen & Minghui, 2026).

The exchange rate-economic performance relationship is very important in developing economies. Currency depreciation can make the country's goods relatively cheaper internationally and thus more competitive and may help boost domestic production and growth. Nonetheless, the domestic-currency cost of imported capital goods, intermediate inputs, and other vital imports can be increased by currency depreciation, thereby producing inflationary pressures and raising production costs.. Thus, the effect of exchange-rate depreciation is theoretically and empirically ambiguous. Studies have found that competitive exchange rates have growth-enhancing effects in developing countries, while other evidence suggests that exchange-rate misalignment or depreciation can limit growth under specific structural conditions (Rapetti *et al.*, 2012; Razmi *et al.*, 2012; Demir & Razmi, 2020).

The institutional environment provides an important explanation for why exchange rate movements may produce different economic outcomes across countries. Governance affects the ability of governments to design and implement policies, to regulate markets, to protect property and contractual rights, and to allocate public resources. The World Bank's Worldwide Governance Indicators identify six dimensions of governance: Voice and Accountability; Political Stability and Absence of Violence/Terrorism; Government Effectiveness; Regulatory Quality; Rule of Law; and Control of Corruption. These dimensions are indicative of different components of the institutional environment within which economic policies and market activities are conducted (Kaufmann & Kraay, 2024). Empirical research has also identified significant relationships between governance quality and economic growth across emerging and developed economies (Lopes *et al.*, 2023).

Thus, governance may matter not only through its direct relationship with economic performance but also because of its ability to moderate the effects of exchange-rate movements. Efficient institutions can help

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shape the implementation and transmission of exchange-rate adjustments through prices, investment, production and trade. Institutional weaknesses, however, can raise uncertainty and reduce the effectiveness of policy responses. Evidence from Nigeria is particularly relevant here. For example, Opuala-Charles and Orji (2022) studied foreign-exchange management, institutional quality and economic growth in Nigeria and explicitly treated institutional quality as a moderating factor in the foreign-exchange management and growth relationship. Recent evidence from Nigeria has also examined the link between institutional conditions and exchange-rate volatility with a focus on the role of political and economic institutions for exchange-rate outcomes.

The institutional argument is based on institutional economics theoretically. The importance of transaction costs for the explanation of economic organization was established by Coase (1937) and was extended by Williamson (1975) who emphasised bounded rationality, incomplete information and opportunistic behaviour. North (1990) focused on institutions as the central determinant of long run economic development and argued that institutions shape incentives and the costs of economic exchange. Acemoglu, Johnson and Robinson (2001) also gave empirical evidence that connected institutional differences to long-run differences in economic prosperity. These perspectives provide a theoretical foundation for considering governance as a possible determinant of the channelling of economic forces including the movements of exchange rates into economic outcomes.

A key setting in which to examine this relationship is Nigeria, a country that has experienced considerable changes in the exchange-rate regime and recurrent exchange-rate pressures. The effects of these movements are not restricted to the foreign exchange market as changes in exchange rates also influence the domestic prices of imported goods and inputs, external competitiveness and macroeconomic conditions. Evidence from Nigeria also indicates that institutional conditions relate to exchange-rate outcomes. For example, Omotayo *et al.* (2025) find that measures of institutional environment are associated with exchange-rate volatility in Nigeria using annual data for the period 1981–2023. This further justifies the inclusion of institutional quality in studies of economic effects of exchange rate fluctuations in the Nigerian setting.

This leaves an important gap in the literature. Most of the existing studies have concentrated on the direct effects of exchange rate on economic growth and the direct relationship between governance and economic performance, but fewer studies have examined whether governance moderates the strength or direction of the exchange-rate and economic-performance relationship. Evidence from Nigeria is limited, particularly when governance is defined by the six WGI dimensions and its interaction with exchange rate is examined for alternative measures of economic performance. The present study fills the gap by assessing the moderating effect of governance conditions on the relationship between exchange rate and economic performance in Nigeria.

In the light of this, this study examines the moderating role of governance in the nexus between exchange rate and economic performance in Nigeria from 1996 – 2024. Economic performance is measured by GDP growth, per capita income and expenditure. Exchange rate is measured by naira-dollar exchange rate. The composite index of the six WGI dimensions is an expression of governance. The study also controls inflation and trade openness. The period 1996–2024 corresponds to the current World Bank WGI coverage for Nigeria, while the 2025 WGI revision provides consistent historical estimates for the six governance dimensions in that period (World Bank 2025).

The rest of the paper is structured as follows. Section 2 reviews the literature on governance and Nigeria's economic growth, while Section 3 describes the data and model specification. Section 4 discusses the empirical findings, while Section 5 concludes with remarks and policy recommendations.

LITERATURE REVIEW

Concept of Governance

Governance is an ancient idea that lacks a universally (with rare exceptions) accepted definition but is broadly understood as the framework of rules and institutions that guide how authority is typically exercised in a nation (Bakare *et al.*, 2025). The World Bank (2023) defined it as "the manner in which power is exercised in the management of a country's economic and social resources for development." This encompasses the processes by which governments are selected, monitored, and replaced, their capacity to formulate and implement sound policies, and the respect of citizens and the state for the institutions that govern economic and social interactions (Kaufmann & Kraay, 2023). In this, the World Bank conceptualized governance as a construct that is best understood when indicators such as control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability are discussed. Yet, for Bakare *et al.* (2025), governance is a concept that includes indicators such as corruption control or rule of law, but also includes the strength of state institutions, particularly their capacity to enforce rules, sustain policy credibility, and reduce uncertainty in economic coordination. In furtherance, Bakare *et al.* (2025) emphasized governance as incentive structures within public institutions, where political actors respond to personal, ethnic, and patronage incentives that shape policy outcomes. This includes how informal institutions and neo-patrimonial networks can systematically distort formal governance frameworks.

Bakare *et al.* (2025) implicitly framed governance as a systemic and behavioural outcome rather than a set of measurable indicators, with emphasis on how coordination failures within the state weaken the alignment between policy formulation, enforcement, and

compliance. The study highlighted the dominance of informal rule systems over formal institutions, showing that actual governance practices are often driven more by patronage-based interactions than by statutory rules. It also underscores governance inertia through path dependency, where historical institutional weaknesses persist and reproduce themselves even in the presence of reform efforts (Bakare etal., 2023). A further underlying focus of the study by Bakare *et al.* (2025) is the "credibility of the state", where consistent enforcement of rules shape whether citizens and economic actors comply with governance structures. Overall, governance is treated as an equilibrium outcome that emerges from the interaction of institutions, incentives, and enforcement capacity, rather than something that can be directly adjusted through isolated policy interventions alone (Bakare *et al.*, 2026).

Recent scholarly conceptualizations of governance in Nigeria move beyond basic definitions to highlight the complex interplay of socio-political factors, weak institutions, and pervasive corruption that shape its unique challenges. Key scholarly frameworks highlight the impact of neopatrimonialism and ethno-religious dynamics, alongside the limitations in effectively implementing Western-centric "good governance" principles (Bakare *et al.*, 2025; Bakare *et al.*, 2026). According to Adeleye *et al.*, (2023), good governance implies a high level of organizational effectiveness in relation to policy formulation and the policies actually pursued, especially in the conduct of economic policy and its contribution to growth, stability and popular welfare, implying accountability, transparency, participation, openness and the rule of law. By implication, good governance portrays good management, good performance and good stewardship of public money. From this perspective, it suffices that good governance is an indeterminate term that describes how public institutions conduct public affairs and manage public resources. The concept pays attention to the process of decision-making and the process by which decisions are implemented or not implemented (Bello & Chukwuma, 2023). The attention paid to the process of decision making and its implementation is in cognizance of abuse of human rights, corruption, lack of transparency, lack of responsiveness, and lack of accountability that pervade Africa and Nigeria is not excluded. These variables regard as elements of bad governance which are the root causes of all evil and suffering within our societies and are the complete opposite of the elements of good governance (Ejedegba, 2025; Kaufmann & Kraay, 2023).

Concept of Foreign Exchange rate

Exchange Rate is defined as the rate at which one currency will be exchanged for another (Oladutire *et al.*, 2024). It is also viewed as the value of one country's currency in relation to another currency (Barkoulas *et al.*, 2022). It is a very important price in every economy owing to its significance in the determination of relative prices of domestic and foreign goods and services (IMF, 2023). It is a key macroeconomic variable in the context of general economic policy making and of economic reform programmes in particular, as it plays a very important price which government takes very active interest in. Oladutire *et al.*, (2024) opined that changes in the exchange rate, depreciation or appreciation of the currency, have a significant effect on trade flows and profound implications for the overall economic growth. Among the macroeconomic indicators, exchange rates have been displayed to influence stock prices through trade effect (IMF, 2023). Samod *et al.*, (2022) reckoned that the depreciation of a domestic currency increases the volume of exports because the depreciation of a domestic currency makes exports relatively cheaper than increase. However, Samod *et al.*, (2022) recognized that this assertion holds when the demand for export goods is elastic, causing higher cash flows for domestic companies, and thus causes stock prices to increase. Lampe (2024) opined that Exchange rate stability and continuous growth in capital market are required for financial system stability and monetary policy effectiveness.

Concept of Economic Growth

Economic performance is a multi-dimensional concept measuring how well a country achieves its economic objectives. Economic growth can be perceived as the positive trend in the nation's total output over a long period of time; this implies a sustained increase in gross domestic product (GDP) for a long time (Faraji & Kenani, 2007). It is an increase in output (real GDP), an expansion in product possibility curve, usually expressed in terms of increase in gross domestic product (GDP). That is, GDP is a measure of economic growth, like any other economic quantitative must be expressed in real terms, that is, it must be adjusted for the effects on inflation as for it to provide a meaningful measure of growth overtime. However, the concept of economic growth does not necessarily imply economic well-being or improvement of welfare of citizens. This is because it is a necessary condition and prima facie indicator of the well-being of the economy, but not a sufficient condition for economic well-being (Anyanwuocha, 2008).

A better concept to measure economic well-being and welfare is economic development, which is defined as the process of improving the quality of all human lives and capabilities by raising people's levels of living, self-esteem, and freedom (Todaro & Smith, 2012). With this, Todaro and Smith (2012) imply that economic development refers both capital accumulation and economic growth, with the condition in which people in a country have adequate food and job; and the income inequality among them is greatly reduced. Economic development on the other hand, is the process of ensuring fundamental and sustainable changes in the society. It encompasses growth, embraces such aspects of the quality of life as social justice, equality of opportunity for all citizens, equitable distribution of income and the democratization of the

development process. It however derives from economic growth. However, several scholars have defended the relevance of economic growth as an appropriate term to discuss economic performance. By this, they state that economic growth and economic development can be interchangeably use for each other. This is premised on the assertion that economic growth would in the long-run lead to economic development (Bakare & Edozie, 2015; Anyanwuocha, 2008).

Stylized Facts

Foreign exchange rate is one of the determinants of inflation and welfare in Nigeria. Higher Foreign exchange rates in the country are usually associated with pass-through inflation (Kemoe *et al.*, 2024). A typical example can be examined in recent times when the Yemi Cardoso-led Central Bank of Nigeria (CBN) deregulated foreign exchange rate in the country. This caused sharp increase in the foreign exchange rate formerly around 460 in January 2023 to 769 in September 2023 (CBN Quarterly Bulletin, 2025), causing inflation to spike in the country as it increased from 22.8% prior to the foreign exchange deregulation to 28.9% after the deregulation. Towards the end of 2024, the Naira weakened to about 1538 Naira per US$ (CBN Quarterly Bulletin, 2025), while inflation became high as 34% (NBS, 2025), thereby causing the CBN to raise official lending rate to around 27.5% (The Cable, 2024). Such rate discourages local borrowing for productivity. It must be said that the deregulation policy adopted by the current CBN leans heavily on market driven foreign exchange rates with little intervention by the Apex Bank to determine rates. This is typically the history of Nigeria's foreign exchange market since it was first deregulated in September 26, 1986, when the Second-tier Foreign Exchange Market (SFEM) was introduced under the Structural Adjustment Programme (SAP), allowing foreign exchange rates to be determined by market forces. Ever since, several market-based foreign exchange rate systems have been adopted in the country (Alimi & Adesoji, 2024).

With the introduction of a new foreign exchange market rate system in Nigeria, foreign exchange rate has consistently increased (Samod *et al.*, 2022). This has been associated with increase in the country's inflation rate thereby affecting welfare of citizens. The World Bank data shows that while consumer price index averaged 0.25% between 1960 and 1985 when fixed foreign exchange rate system was adopted, it averaged 120.4% after foreign exchange rate was deregulated between 1986 and 2024 (World Bank, 2024), implying that prices have increased by almost 480 times since foreign exchange deregulation was introduced in 1986. Nonetheless, other sectors of the economy have performed positively. For instance, GDP averaged 4.2% between 1986 and 2024 and surpassing 1960-1985 growth rate of 2.95% (World Bank, 2024). Trade balance averaged 624 million Naira between 1960 and 1985, but increased to 1.093 billion Naira between 1986 and 2023 (CBN Statistical Bulletin, 2023). Based on these data, one would expect that while foreign exchange rate deregulation is associated with increase in inflation, such unwanted outcomes are offset with improved performance in other macroeconomic indicators such as GDP and trade balance, as increase in inflation has not deterred local productivity in the country because foreign exchange deregulation supports higher exports.

While Nigeria seems to have an effective foreign exchange rate system, the same cannot be said about its governance and institutional frameworks. The country is ranked as one of the most corrupt countries on the globe, with government officials having no regard to the rule of law except it is in their favour (Umoinyang *et al.*, 2023). The country's Nigerian National Petroleum Corporation (NNPC) hardly audits its account, exposing weakness in the country's commitment for transparency (Oriental News, 2024). In March 2024, Senator Abdul Ahmed Ningi (representing Bauchi Central), claimed the 2024 budget passed by the National Assembly of Nigeria was padded (illegally inflated) by about ₦3 trillion, questioning the country's commitment to accountability (Premium Times, 2024). Terrorism is another growing menace in the country, as Boko Haram insurgency and Banditry ravage Northern Nigeria raise suspicions on whether the Nigerian government is capable to protect lives and property (Akhanolu & Ogunnubi, 2024). Insurgency is also becoming a growing problem in South-Eastern part of the country, as "unknown gunmen (UGM)" are disrupting private businesses and daily living in that region (Offor *et al.*, 2024). Also, Benue and Plateau States have had years of conflicts between farmers and herders, which has led to the deaths of innocent citizens (Arum *et al.*, 2025). These reveal that there are undeniable evidences of weak governance in Nigeria, as there is growing doubt whether the government is capable to protect lives and property, and curb the armed conflicts. Ideally, such weakness in governance could transcend to weakening of the foreign exchange rate in the form of weak regulatory enforcement against banks and Bureau De Change. Therefore, poor governance can interfere with the behaviour of the exchange rate system in Nigeria and its effect on economic growth (Ramoni-Perazzi & Romero, 2022).

Theoretical Review

Balance of Payment (BOP) Theory

The BOP theory is associated with the evolution of international economic thought from classical to modern. Alexander (1952) made a significant contribution in the form of absorption approach in explaining balance of payments adjustment. The BOP theory establishes a relationship between a country's external position, exchange rates, the trade balance and its economic performance. A fall in the currency's value can stimulate economic activity by making exports cheaper and imports more expensive, which may improve the trade balance. However, if the balance of payments deficits persist and the currency continues to depreciate, it can lead to

inflationary pressures and erode investor confidence, potentially harming economic performance (Mundell, 1968; Johnson, 1972).

The theory posits that a country's exchange rate is determined by the supply of and demand for its currency in the foreign exchange market, which is a reflection of all its international economic transactions. A country with a trade surplus will experience an appreciation of its currency due to increased demand for its goods and, consequently, its currency. Conversely, a trade deficit leads to currency depreciation. Balance of Payments (BOP) is a fundamental aspect of international economics, providing a comprehensive overview of a country's economic transactions with the rest of the world over a specific period (Mundell, 1963). A country's balance of payments is a statement that shows the exchanges of goods and services between a country and the rest of the world (Jhigan, 2011). According to Pirlogeanu and Bulau (2018), the BOP shows changes in a nation's holdings of cash, gold, and Special Drawing Rights, as well as transactions involving products, services, income, unilateral transfers, receivables, and financial claims against and obligations to foreign parties.

Nigeria's case presents a unique challenge to the balance of payment theory due to its dependence on oil exports, which account for over 90% of foreign exchange earnings. During periods of high oil prices, Nigeria experiences a trade surplus, leading to currency stability or appreciation. However, when oil prices fall, the country faces trade deficits, currency depreciation, and economic contraction. For example, the oil price slump of 2015–2016 caused a significant depreciation of the naira, triggering inflation and a recession (CBN, 2016). Empirical evidence, such as the study by Afolabi, Adeoye and Olayemi (2022), demonstrated that exchange rate volatility resulting from external shocks to the BOP has a profound impact on Nigeria's economic growth.

The J-Curve Theory

The J-Curve theory, introduced by Magee (1973), explains how currency depreciation may initially worsen a country's trade balance before improving it over time. The theory is closely related to the Marshall-Lerner condition, which states that depreciation improves the trade balance when the combined price elasticities of exports and imports exceed unity. The J Curve theory builds on the Marshall Lerner condition on exchange rate to provide a wider explanation the relationship between exchange rate depreciation and trade balance. The Marshall-Lerner condition is accredited to two economists, Marshall (1920) and Lerner (1944) who showed the conditions in which exchange rate depreciation can improve balance of payment. The condition is premised on the assumption that an exchange rate devaluation or depreciation will only cause balance of trade improvement if the absolute sum of the long-term export and import demand elasticities is greater than unity (Jhingan, 2011). Thus, the condition admits that exchange rate depreciation will improve balance of payment position, by making exports relatively cheaper.

Unlike the Marshall-Lerner condition, the J-curve theory provides a short run-long run explanation on the relationship between exchange rate and balance of payment position. The theory concurs with the Marshall-Lerner condition that devalued currency means imports are more expensive. However, the J-curve admits that exchange rate depreciation can only improve trade balance in the long run and not in the short run. The J-curve theory posits that following the depreciation or devaluation of the currency, total value of imports will increase and exports may remain largely unchanged due in part to pre-existing trade contracts that have to be honored (Jhingan, 2011). More so, demand for the more expensive imports is price inelastic in the short run. This is due to time lags in the consumer's search for acceptable and cheaper alternatives. However, in the long run, the J-curve theory asserts that depreciation in the exchange rate will have the desired effect of improving the current account balance. That is, domestic consumers might switch their expenditure to domestic products and away from expensive imported goods and services. Equally, many foreign consumers may switch to purchasing the products being exported into their country, which are now cheaper in the foreign currency, instead of their own produced goods and services (Jhingan, 2011). Based on the J-curve theory, exchange rate depreciation increases international trade in the long run, but exchange rate depreciation worsens international trade during the short run.

The J-Curve theory describes the impact of the depreciation of exchange rates on a country's trade balance and economic performance. Depreciation can, over time, increase exports and stimulate the domestic economy by making exports relatively cheaper and imports more expensive. However, the theory does not explain much about how institutional factors affect this relationship Thus, this study advances the framework by taking into account governance quality as a moderating factor. Good governance can foster transparent and predictable foreign-exchange policies, improve monetary policy, attract investment, and reduce uncertainty in exchange-rate markets (Bakare *et al.*, 2023; Phuc, 2025; Jan *et al.*, 2025). The quality of governance may, thus, influence the degree to which the economic performance is affected by exchange-rate movements.

Based on the argument above, this study presents an adjusted J-curve theory which posits that the effectiveness of exchange rate adjustments in improving trade balance and promoting economic growth is contingent on the quality of governance and institutional framework. In environments with strong institutions, transparent policies, and effective regulatory oversight, currency depreciation is more likely to lead to improved trade balance and economic performance through increased exports and local production. Conversely, weak governance and institutional deficiencies can undermine

the J-curve effect, leading to persistent trade imbalances and economic instability.

Empirical Studies

Using a systematic literature review research design, Kaytan (2025) empirically examined how instability in government institutions impacts economic growth and how governance mediates, or rather shapes, these effects. The study relied on data collected relying on peer-reviewed academic journals. Focusing on countries in South-Eastern Europe, the study found evidence that most of these countries are highly vulnerable due to weak institutions, corruption, and limited administrative capacity. This brought about political instability, reduced productivity, reduced investments, and lower economic productivity. The study concluded that inclusive governance, accountability, and adaptive policymaking are important in promoting economic prosperity. The study recommended effective reforms in governance and strengthening of public institutions which will aid economic output in South-Eastern Europe.

Relying on spatial regression models, Mahran (2023) conducted an empirical study that investigated the impact of governance on economic growth, using one hundred and sixteen countries covering periods from 2000-2017. The study found that governance exerted significant positive effects on economic growth, meaning that improvement in governance spurs economic prosperity. However, the coefficient obtained was 0.011. The cause for weak but significant contributions of governance on economic prosperity owes to varying degrees of governance across countries of the globe. Africa and Southern Asia recorded the lowest governance index, while North America, Western Europe, and Eastern Asia have the highest governance index. Therefore, the study concluded that governance exerted significant contributions on economic prosperity, which is weaker in African and Southern Asian countries but stronger across North American, Western European, and Eastern Asian countries. The study recommended that African and Southern Asian countries should improve their public institutions to derive higher benefits from economic prosperity.

Using the generalized method of moments (GMM) methodological approach with corrected standard errors, Appiah-Kubi *et al.* (2023) studied the impact of governance on financial market development in 47 African countries from 2008 to 2019. The study used the availability of venture capital as a proxy for financial market development and measured governance with the six Worldwide Governance Indicators, while controlling for GDP per capita, inflation and trade openness. The results showed that governance quality was a significant determinant of financial market development in Africa.

Similarly, using the System Generalized Method of Moments (SGMM), Nguyen *et al.*, (2018) examined the effect of institutional quality on economic growth in 29 emerging economies from 2002 to 2015. The study found that institutional quality significantly promoted economic growth but weakened the positive effects of FDI and trade openness. It concluded that strengthening institutional quality and domestic firms' capacity is important for maximising the benefits of FDI and trade openness.

Abozeid *et al.*, (2025) questioned the relationship between institutional quality (IQ) and sustainable firm growth (SFG) in North African countries, focusing on Egypt, Morocco, and Tunisia. Utilizing panel data from 155 non- financial firms over the period 2007-2020. The study employed a system generalized method of moments (GMM) approach to analyze this relationship. The findings revealed a significant U- shaped relationship between IQ and SFG, indicating that both very low and very high levels of IQ were associated with limited firm growth, while an optimal level of IQ promoted substantial growth. This suggested that firms in low-IQ environments struggled due to weak regulatory frameworks and corruption, whereas those in high- IQ environments benefitted from better governance and transparency, leading to enhanced growth. The study recommended the need for balanced regulation and long-term investment in institutional quality, education, and infrastructure in North Africa.

Recent empirical studies robustly affirm a strong positive relationship between governance quality and economic performance in Nigeria. Adeleye, Ogundipe and Ogunrinola (2023) employed dynamic Ordinary Least Squares and Error Correction Models on data from 1996 to 2021, finding that a one-unit improvement in the composite governance index increased GDP growth by 0.8% annually. The study identified control of corruption and regulatory quality as the most influential indicators, explaining nearly 60% of the variation in economic growth over the period. The study recommended that the Nigerian government should improve on its public institutions so as to provide impetus for economic improvement.

Also, Bakare etal., (2023) examined the effects of corruption and institutional quality on economic performance in Nigeria using the ARDL approach and data from 1970 to 2020. The study found that corruption had a significant negative long-run effect on economic performance, while institutional quality had a negative but insignificant effect. The authors recommended stronger anti-corruption measures alongside policies supporting human capital development, trade openness, and labour participation..

Furthermore, their findings corroborate the empirical study conducted by Bakare and Ozebge (2022) which examined the relationship among corruption, human capital development and Nigeria's economic performance. The study deployed the Auto Regressive Distributed lag (ARDL) to test the short-run and long-run relationship among dependent and independent variables using annual time series data from the World Bank's Development Indicators and the Central Bank of Nigeria over the

period 1982 to 2020. Stemming from the empirical results, the short-run estimates revealed that human capital development, gross fixed capital formation, and government expenditure exerted a positive and statistically significant impact on Nigeria's economic performance. However, the long-run estimation results indicated that corruption, government expenditure and trade openness exerted a negative impact on economic performance. This implies that economic performance responded negatively to changes in the country's level of corruption overtime. Nevertheless, it reacted positively to the changes in human capital development in the long-run. This implies that, with the availability of appropriate policies and resources, human capital development has the potential to massively enhance Nigeria's economic performance in the long-run, while corruption weakened domestic productivity in the country. The study recommended that the Nigerian should bring an end to corruption so as to spur growth of the domestic economy.

Samod *et al.*, (2022) utilized two alternative approaches to exchange rate regime classifications to examine their impact on macroeconomic performance in Nigeria. Exploring the ARDL modeling framework and utilizing data from 1970 to 2020, it was observed that the dynamics of the impact of exchange rate regimes on macroeconomic performance is sensitive to the choice of exchange rate regimes classifications under consideration. The study showed that the impact of exchange rate regimes on macroeconomic performance is relatively more viable when the exchange rate regime is IMF's de-jure to de-facto compared to the LYS classification. Based on the finding of the study, it was recommended that preference should be given to the IMF de- jure to de-facto classification in the context of the Nigerian economy as this tends to enhance macroeconomic performance.

Ozigbo *et al.*, (2025) investigated the relationship between exchange rate fluctuations and economic growth in Nigeria. The ex-post facto research design technique was utilized. The data were obtained from the CBN Statistical Bulletin from 1990-2022, while also employing the Co-integration Error Correction Mechanism (ECM). Results obtained showed that exchange rate and interest rate were significant and negatively related to economic growth. Also, inflation rate and external reserve were significant but positively related to economic growth within the period covered by this study. It was therefore recommended that policy makers should not only rely on the manipulation of the macroeconomic variables to stem the tide of exchange rate fluctuations in the short run but go further to design policies that can bring about increase in production of goods and services in Nigeria.

Gaps in the Literature

The main gap from empirical studies indicate that most existing studies focus on the direct effect of governance or institutional quality on economic performance, rather than whether governance changes the effect of underlying economic factors on performance. For instance, Mahran (2023), Adeleye *et al.* (2023), and Bakare *et al.* (2023) find governance or institutional quality to be related to economic performance. Nguyen *et al.* (2018) finds that institutional quality can affect the impact of FDI and trade openness. However, the Nigerian studies identified in the review did not adequately investigate governance as a moderating variable, especially when considering the six dimensions of governance in the relationship between productive factors such as labour and capital, and economic performance. This study fills this empirical gap by examining the direct effects of governance and the moderating effects of governance on economic performance in Nigeria.

MATERIALS AND METHODS

The data used in this study is yearly time series data, from1996 to 2024, sourced from the Central Bank of Nigeria (CBN), the World Bank and Worldwide Governance Indicators (WGI). Three indices are used to measure economic performance and the value of the naira per US dollar is used for the measurement of exchange rate, while governance is developed using Principal Component Analysis (PCA) on the six dimensions of the WGI. The study uses an autoregressive distributed lag (ARDL) bounds testing approach is used to investigate the LR relationship between variables and to estimate LR as well as SR effects. ARDL is suitable because it allows for a combination of I(0) and I(1) variables, allows for relatively small samples (for example, n<1,000), and allows for different lag structures. The bounds test is used to determine where cointegration exists, and the error correction model from the test explores short-run dynamics and the rate of convergence towards the long-run equilibrium. This renders ARDL appropriate for analysing the impact of exchange rate, governance, and exchange rate-governance interaction on the economic performance.

Model Specification

Following the J-Curve theory and drawing on Bakare *et al.*, (2022) and Dirir (2023) who examined governance as a determinant of economic performance, the study incorporates the quality of governance and its moderating role in the relationship between exchange rate and economic performance. Thus, the study specifies a multiple regression model to capture the direct and interaction effect across the three variants of economic performance measures:

$$GDPgr = f(EXR, GOV, GOV.EXR) \quad (1)$$

$$PCI = f(EXR, GOV, GOV.EXR) \quad (2)$$

$$EXP = f(EXR, GOV, GOV.EXR) \quad (3)$$

The functional forms in Equations (1), (2), and (3), are subsequently transformed into econometric models to incorporate the intercept term and the stochastic error term in the equation, to capture the impact of omitted or unobserved factors that could affect the respective measure of economic performance. Hence, the econometric specifications of the three models are given as:

$$LnGDPgr = \alpha 0 + \alpha 1\, LnEXR + + \alpha 2\, LnGOV + \alpha 3\, GOV.EXR + + \gamma' Xt + \mu t \quad (4)$$

$$LnPCI = \Phi 0 + \Phi 1\, LnEXR + \Phi 2\, LnGOV + \Phi 3\, GOV.EXR + + \gamma' Xt + \nu t \quad (5)$$

$$LnEXP = \beta 0 + \beta 1\, LnEXR + \beta 2\, LnGOV + \beta 3\, GOV * EXR + + \gamma' Xt + \varepsilon t \quad (6)$$

In equations 5 through to 6, GDPgr is Real Gross Domestic Product growth; PCI is Per capita income; EXP is Exports; EXR is nominal exchange rate; GOV is Governance; GOV*EXR is Moderating effect of governance; L is Natural Logarithm; α0, β0 and Φ0 are intercepts; α1 to α3, β1 to β3, Φ1 to Φ3 are coefficients of the explanatory variables. Xt represent a vector of control variables: Trade Openness (TOP) and Inflation (INF). μ, ν, and ε are error terms.

RESULTS AND DISCUSSION

Descriptive Statistics

From the descriptive statistics, the average of GDP for the period 1996-2024 was 4.65% and at US$1600.35 per capita for PCI during 1996-2024. Export (EXP) averaged 50.63 billion naira, with a standard deviation of 2.74 showing great variability. Exchange rate(EXR) averaged ₦236.52 per US dollar with a standard deviation of ₦275.39 showing a high degree of variation. GOV was found to have a mean of near with a standard deviation of 1.96. INF and TOP averaged 160.28 and 0.374, respectively. GDP, EXR, INF and TOP have considerable variation between the minimum and maximum values over the sample period.

GDPgr has a moderate positive skewness and PCI, EXP and GOV having relatively lower skewness. EXR, INF and TOP values were positively skewed, EXR having the highest skewness (+3.394). Kurtosis was particularly high for EXR (15.576), TOP (11.798) and INF (5.548), indicating heavier tails. The Jarque-Bera test fails to reject normality at the 5% level for GDP, PCI, EXP and GOV, but rejects others such as EXR, INF and TOP with probability values < 0.05. The results provide initial evidence of significant variation in economic performance, governance, and exchange-rate conditions in Nigeria over the period 1996–2024.

Table 1: Descriptive Statistics

Statistic	GDP	PCI	EXP	EXR	GOV	INF	TOP
Mean	4.653	1,600.345	50.629	236.522	-0.000	160.276	0.374
Std. Dev.	3.446	938.287	2.740	275.386	1.963	165.138	0.339
Min	-1.794	390.000	45.833	21.884	-4.127	21.748	0.067
Max	15.329	2,940.000	56.050	1,478.965	2.446	699.395	1.793
Skewness	0.660	-0.015	-0.240	3.394	-0.622	1.715	2.702
Kurtosis	4.656	1.465	2.211	15.576	1.988	5.548	11.798
Jarque-Bera (JB)	5.422	2.849	1.030	246.791	3.109	22.057	128.837
Prob. > χ^2	0.0665	0.2407	0.5974	0.0000	0.2113	0.0000	0.0000
N	29	29	29	29	29	29	29

Source: Author's compilation from CBN Annual Bulletin and World Bank datasets

Correlation Analysis

The correlation results indicate that GDPgr is negatively correlated with all the explanatory variables, with the

Table 2: Correlation Matrix

Variable	GDPgr	LEXP	LPCI	LEXR	TOP	GOV	LINF
GDPgr	1.0000						
LEXP	-0.2607	1.0000					
LPCI	-0.3105	0.9129*	1.0000				
LEXR	-0.2083	0.9128*	0.7138*	1.0000			
LTOP	-0.2165	0.7836*	0.5408*	0.7984*	1.0000		
GOV	-0.4728*	0.8483*	0.8896*	0.6494*	0.5568*	1.0000	
LINF	-0.3730*	0.9793*	0.8787*	0.9095*	0.8067*	0.8178*	1.0000

*Note: * indicates statistical significance at the 5% level. The coefficients are Pearson pairwise correlation coefficients based on 29 observations. GDPgr denotes GDP growth, L_LEXP logged expenditure, L_PCI logged per capita income, L_EXR logged exchange rate, TOP trade openness, GOV governance, and L_INF logged inflation.*

strongest correlations with GOV (r = -0.473) and LINF (r = -0.373). GDPgr shows also weaker negative correlations with LEXP (r = -0.261), LPCI (r = -0.311), LEXR (r = -0.208) and TOP (r = -0.217). Among the explanatory variables, LPCI has a strong positive correlation with GOV (r = 0.890) and LEXP has strong correlation with LPCI (r = 0.913), LEXR (r = 0.913) and LINF (r = 0.979).

The results also reveal high correlations between several explanatory variables, in particular LEXP – LINF (r = 0.979), LEXP – LPCI (r = 0.913), LEXP – LEXR (r = 0.913), LEXR – LINF (r = 0.910). These high pairwise correlations indicate a potential multicollinearity problem which should be investigated further using formal multicollinearity diagnostics prior to the estimation of the regression models.

Trend Analysis

From the graphs in figure 4.1, GDP growth experienced considerable fluctuations during the study period. Growth increased sharply around 2001-2002, reaching its peak at about 15%, before declining and fluctuating through the following years. Growth weakened significantly around 2015–2016, including a negative growth rate, and experienced another decline around 2020. It then bounced back, with GDP growth still positive toward 2024. Per capita income (PCI) generally increased from the late 1990s, rising strongly after the mid-2000s and peaking around 2014-2015. It declined thereafter, in particular around 2016 and 2017, recovered around 2021–2022, and then fell again toward 2024.

Exports (EXP) were fairly stable at low levels for most of the previous period, but gradually increased in the later years, with a particularly sharp increase in the direction of 2024. The exchange rate (EXR) clearly shows a long-term depreciation of the naira, with relatively gradual increases in the early years, more pronounced movements after 2015, and a very sharp increase toward 2023–2024. Governance (GOV) declined sharply in the late 1990s and early 2000s, reaching its trough around 2002.

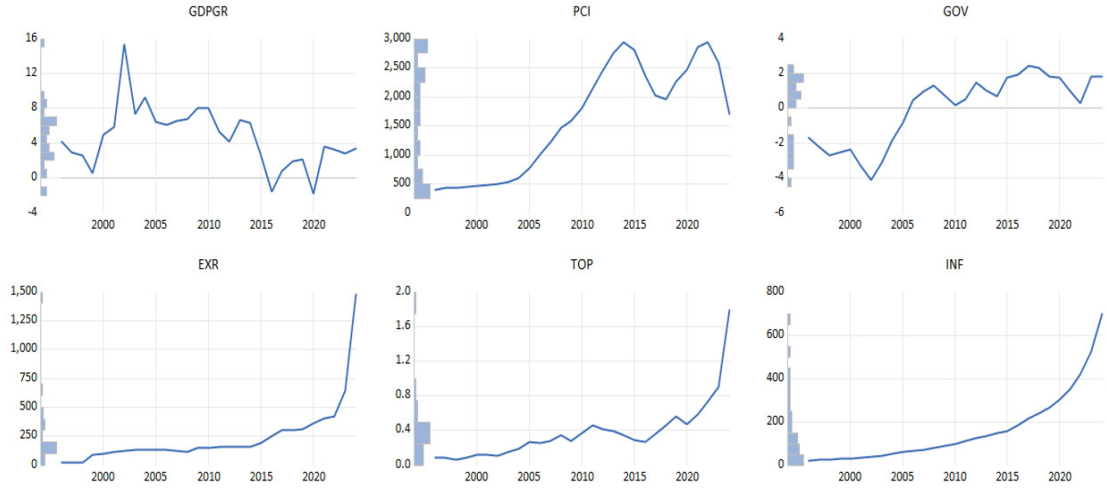


Figure 1: showing series trend between 1996 and 2024

Note: These graphs show the annual variation in the variable over time (1996-2024) with year on the x-axis and the value of the variable on the y-axis.

Furthermore, the series recovered considerably from the mid-2000s, although it was still fluctuating, with relatively better values toward the end of the period. Inflation (INF) follows a generally upward trend, with moderate movements in the early stage of the period, more pronounced gains after 2015 and a sharp jump toward 2024. Trade openness (TOP) increased generally over the period with some fluctuations in between, particularly during the years 2011–2018, followed by a sharp increase toward 2024. The graphs collectively indicate that Nigeria experienced notable changes in economic performance, external sector conditions, governance, inflation and trade openness during 1996–2024.

Unit Root Test

The Augmented Dickey Fuller (ADF) statistic is used to conduct unit root test by comparing the ADF test statistic and the ADF critical statistic. On comparison, if the former is greater than the latter in absolute terms, one concludes that the series is stationary.

Table 3 summarizes the ADF rest results at levels and at first difference. The tests were conducted at 5% level. The test results reveal that at levels, ltop and LINF are stationary. However, taking the LGDPGR, LEXP, LPCI, GOV and LEXR were stationary at first difference. Given that the variables are all stationary at levels, I(0)) and first difference I(1)), ARDL approach becomes most appropriate. Pesaran, Shin and Smith (2001) agree that ARDL bounds testing is valid for variables that are I(0), I(1), or a mix of I(0) and I(1), and that it is particularly suitable for small samples compared to the Johansen's approach.

Table 3: ADF Unit Root Test

Variable	At Levels		At First Difference		Remarks
	ADF Statistic	ADF critical (5%)	ADF Statistic	ADF critical (5%)	
LGDPGR	0.275	-2.89	-3.602	-2.93	I(1)
LEXP	-0.578	-2.89	-5.313	-2.93	I(1)
LPCI	-0.827	-2.89	-3.141	-2.93	I(1)
GOV	-0.97	-2.89	-7.625	-2.93	I(1)
LEXR	-0.245	-2.89	-3.887	-2.93	I(1)
LTOP	-4.100	-2.97	-	-	I(0)
LINF	-4.967	-3.01	-	-	I(0)

Source: Author's computation using R Studio

VAR Lag Length

Lag-order selection criteria identified Lag 2 as optimal since all three of AIC, HQ and SC selected 2 lags.

Table 4: VAR Lag-Order Selection Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	67.92719	NA	2.59e-11	-4.513125	-4.177167	-4.413227
1	285.3616	306.0188	1.12e-16	-16.98975	-14.30209*	-16.19057
2	362.1207	68.23033*	3.40e-17*	-19.04598*	-14.00662	-17.54751*

ARDL Bonds Co-integration Test

The ARDL test results are summarized in Table 4.4. The estimation was conducted over the full study period, 1996–2024, for the three specified models: LGDPGR, LPCI, and LEXP. The results indicate the existence of a stable long-run relationship among exchange rate, governance, and their interaction term with output, per capita income, and exports. Specifically, all three models exhibit statistically significant cointegration, confirming that the variables move together in the long run. This implies that exchange rate movements and governance dynamics exert persistent effects on macroeconomic performance in Nigeria over the study period. Consequently, the long-run information lost during the differencing process in the unit root tests is successfully restored through the ARDL bounds testing approach.

Table 5: ARDL Bonds Test Results

Model	Fstat	Pvalue	Decision
LGDPgr	5.8077	0.0014	Cointegration
LPCI	5.3332	0.0029	Cointegration
LEXP	8.664	0.0001	Cointegration

Source: Author's computation using R Studio

Auto Regressive Distributed Lag Model (ARDL) Analysis

The Autoregressive Distributed Lag (ARDL) estimation technique was used to estimate the models of this study, because it accommodates variables integrated at different orders, captures short-run equilibrium relationships, and is suitable for small samples (Pesaran, Shin & Smith, 1996).

The results in Table 6 show a stable autoregressive structure for GDP, but weak and mostly insignificant transmission from exchange rate and governance variables in both the short run and long run, except for the error correction term.

In the short-run ARDL results, LGDPGR is highly persistent, as shown by the large and significant lag coefficient (0.890), indicating that current output is strongly driven by its past level. However, LEXR, LGOV, and GOV.EXR are statistically insignificant in both current and lagged forms, meaning short-run fluctuations in exchange rate and governance variables do not meaningfully explain GDP movements during the period. In the long-run coefficients, none of the explanatory variables are statistically significant, suggesting that exchange rate, government quality, and their interaction do not exert a stable equilibrium effect on GDP over the long horizon within this specification. Although some coefficients carry expected signs, they lack statistical support.

In the ECM representation, the error correction term is negative and statistically significant (-0.110, $p = 0.002$), confirming the existence of adjustment toward long-run equilibrium. The magnitude implies a relatively slow adjustment process, where about 11% of deviations from equilibrium are corrected each period.

Table 6: ARDL Short-Run and Long-Run Regression Results Dep.Var.: LGDPGR

Variables	Coefficient	Std. Error	t-Statistic	p-Value
Short-Run Dynamics				
ECM(-1)	-0.110	0.033	-3.369	0.002***
ΔLGDPgr (-1)	0.890	0.050	17.663	0.000***
ΔLEXR	-0.016	0.077	-0.201	0.842
ΔLEXR(-1)	0.040	0.081	0.487	0.629
ΔLGOV	0.048	0.062	0.780	0.440
ΔLGOV(-1)	-0.044	0.061	-0.710	0.482
GOV*EXR	-0.016	0.018	-0.879	0.385
GOV*EXR(-1)	0.020	0.018	1.115	0.271
Constant	1.106	0.498	2.220	0.032**
Long-Run Relationship				
LEXR	0.219	0.471	0.465	0.645
LGOV	0.045	0.544	0.082	0.935
GOV*.EXR	0.034	0.113	0.300	0.765
R-squared	0.962			
Adjusted R-squared	0.955			
F-statistic	150.313			
F-statistic p-value	0.000***			

*Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. ECM = Error Correction Model. EXR = Exchange Rate; GOV = Government Expenditure; GOV.EXR = interaction between Government Expenditure and Exchange Rate.*
Source: Author's computation using R Studio.

Overall, the system confirms a valid co-integration relationship with meaningful adjustment dynamics, but the long-run economic drivers in the model are weak individually, suggesting that GDP dynamics are more strongly driven by inertia than by exchange rate or governance effects in isolation.

Table 7: ARDL Short-Run and Long-Run Regression Results Dep. Var.: LPCI

Variables	Coefficient	Std. Error	t-Statistic	p-Value
Short-Run Dynamics				
ΔLEXR	0.004	0.027	0.153	0.879
ΔLGOV	0.038	0.022	1.740	0.089*
ΔGOV*EXR	-0.009	0.007	-1.409	0.166
ECM(-1)	-0.088	0.020	-4.416	0.000***
Constant	7.122	0.187	38.071	0.000***
Long-Run Relationship				
LEXR	0.148	0.248	0.597	0.554
LGOV	0.059	0.286	0.206	0.838
GOV.EXR	0.032	0.060	0.536	0.595
R-squared	0.964			
Adjusted R-squared	0.958			
F-statistic	161.607			
F-statistic p-value	0.000***			

*Note: ⊿ denotes first difference. ECM(-1) denotes the lagged error-correction term. EXR = Exchange Rate; GOV = Government Expenditure; GOV.EXR = interaction between Government Expenditure and Exchange Rate; PCI = Private Capital Investment. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*
Source: Author's computation using R Studio.

The results in Table 7 indicate a highly persistent per capita income process, with strong dependence on its own lagged value, while exchange rate and governance variables show limited explanatory power in both the short run and long run. In the short-run ARDL estimates, LPCI is strongly driven by its lagged value (0.912, $p < 0.01$), confirming strong inertia in income dynamics. However, LEXR, LGOV, and GOV.EXR are statistically insignificant in both current and lagged forms, suggesting that short-run fluctuations in exchange rate and governance conditions do not significantly affect per capita income during the period.

In the long-run coefficients, none of the explanatory variables are statistically significant, implying that exchange rate and governance variables do not establish a stable long-run equilibrium relationship with per capita income in terms of individual parameter effects, despite cointegration existing at the system level.

The ECM results show a negative and highly significant error correction term (-0.088, $p < 0.01$), confirming the presence of a valid long-run equilibrium relationship. The adjustment speed is moderate, with about 8.8% of disequilibrium corrected each period. In the short-run dynamics, only d(LGOV) is weakly significant at 10% level, suggesting a marginal short-run influence of governance changes on income adjustments.

The model fit is very strong, with an R-squared of 0.964 and a highly significant F-statistic, indicating that the overall model explains a large proportion of variation in per capita income, largely driven by its own lag structure rather than external explanatory variables.

Table 8: ARDL Short-Run and Long-Run Regression Results. Dep.Var.: LEXP

Variables	Coefficient	Std. Error	t-Statistic	p-Value
Short-Run Dynamics				
ΔLEXR	0.172	0.202	0.852	0.399
ΔLGOV	-0.133	0.153	-0.868	0.390
ΔGOV*EXR	0.034	0.047	0.730	0.469
ECM(-1)	-0.387	0.073	-5.336	0.000***
Constant	9.518	0.248	38.359	0.000***
Long-Run Relationship				
LEXR	0.814	0.399	2.042	0.047**
LGOV	-0.516	0.462	-1.117	0.270
GOV.EXR	0.125	0.096	1.305	0.199

*Note: Δ denotes first difference. ECM(-1) denotes the lagged error-correction term. EXR = Exchange Rate; GOV = Government Expenditure; GOV.EXR = interaction between Government Expenditure and Exchange Rate; EXP = Exports. *** p < 0.01, ** p < 0.05, * p < 0.10.*

Source: Author's computation using R Studio.

The results in Table 8 indicate that exports exhibit strong persistence over time, while exchange rate has a significant long-run effect on exports, but governance and its interaction with exchange rate do not exert significant influences.

In the short-run ARDL results, the lagged value of exports is positive and highly significant (0.613, $p < 0.01$), indicating that current export performance is strongly influenced by its past level. However, the contemporaneous and lagged values of LEXR, LGOV, and GOV.EXR are statistically insignificant, suggesting that these variables do not have significant short-run effects on exports.

In the long-run estimates, LEXR has a positive and statistically significant coefficient (0.814, $p = 0.047$), implying that exchange rate changes have a positive long-run effect on exports. Specifically, a 1% increase in the exchange rate is associated with an estimated 0.814% increase in exports, holding other factors constant. Conversely, LGOV and GOV.EXR remain statistically insignificant, indicating that governance and its interaction with exchange rate do not significantly influence exports in the long run.

The ECM results show a negative and highly significant error correction term (-0.387, $p < 0.01$), confirming the existence of a stable long-run equilibrium relationship. The coefficient indicates that approximately 38.7% of any short-run deviation from the long-run equilibrium is corrected within one period, reflecting a relatively rapid speed of adjustment. The short-run differenced variables remain statistically insignificant, reinforcing that meaningful effects arise primarily through the long-run equilibrium rather than immediate changes.

Post Estimation Diagnostics

Post-estimation tests suggest that the model is statistically well specified. The Ramsey RESET test ($p = 0.1665$) shows no evidence of functional form misspecification or omitted variables. The Breusch–Godfrey test ($p = 0.9408$) confirms that there are no serial correlations and the Breusch–Pagan/Cook–Weisberg test ($p = 0.7167$) shows there is no evidence of heteroskedasticity. Overall, the results indicate that the model meets the key diagnostic requirements at the 5% significance level.

Table 9: Post-Estimation Diagnostic Tests

Test	Statistic	p-value	Decision at 5%	Conclusion
Ramsey RESET	$F(3,14) = 1.960$	0.1665	Fail to reject H_0	No evidence of omitted variables
Breusch–Godfrey LM	$\chi^2(1) = 0.006$	0.9408	Fail to reject H_0	No serial correlation
Breusch–Pagan/Cook–Weisberg	$\chi^2(1) = 0.130$	0.7167	Fail to reject H_0	No heteroskedasticity

Discussion of Findings

The results show that the interplay of exchange rate, governance and economic performance in Nigeria is different for the variables: GDP growth, per capita income and exports during the period 1996-2024. The results of the ARDL bounds test show that all three models contain long-run relationships, but the individual coefficients suggest that the impact of exchange rate changes on the level of economic performance is not uniformly positive. Specifically, export is positively and statistically significantly affected by exchange rate in the long run, while this relationship is not statistically significant in the GDP growth and per capita income growth models. Again, the role of governance and interaction between exchange rate and governance is negligible, indicating that governance did not have a statistically significant moderating effect on the relationship of exchange rate and economic performance during the study period.

The negligible correlation between exchange rate and GDP growth implies that currency devaluation does not necessarily mean a growth of the economy of the nation. In the Mundell-Fleming model, depreciation can help to boost aggregate demand by making exports more competitive and the net exports more. This is however, limited by the structural reliance of Nigeria on imported production technology, intermediate inputs and capital goods. These imports' inflationary and production cost effects, which can arise when the cost of depreciation rises in the domestic currency, can negate the competitiveness gains. This result is in line with that of Akpan and Atan (2011) which showed lack of robust positive relationship between exchange rate movements and output growth in Nigeria. Likewise, Uche and Nwamiri (2022) found that in the short run exchange rate depreciation had a negative impact on productivity, but in the long run it had a negligible impact. The finding is also partially supported by Oni and Akinsanya's (2026) evidence of a negative impact of exchange rate depreciation on economic growth, which supports the claim that depreciation does not always promote economic expansion. The results strengthen the claim that exchange rate adjustments can be complementary to boost sustainable economic growth in the absence of a comparable boost in domestic productive capacity.

The insignificant governance and interaction coefficient further indicate that governance had negligible statistical impact on GDP growth in the estimated specification on its own and in combination with exchange rate. While institutional economics highlights the need for good institutions for investments, transaction costs and productive activities, it is not found that governance was an important determinant of the strengthening of the growth potential of exchange rate adjustments. This is contrary to Opuala-Charles and Orji (2023) which found complementary effect of institutional quality and exchange rate management on economic growth in Nigeria. The difference could be due to different sample periods, indicators of exchange rates, measures of good governance, or estimation methods. The negative error correction term is significant and suggests that the adjustment rate should be around 11% per year, but still leaves the conclusion that adjustment was moving towards the estimated long run equilibrium.

The results from the per capita income approach are more or less the same, with exchange rate and its interaction with governance having no statistically significant effect in both the short run and long run. This implies that there is no evidence that the change in exchange rate has a significant relationship with the average income per person in Nigeria. This may be attributed to the purchasing-power effect of depreciating the currency. While depreciation can increase export competitiveness, it can also raise the cost of imported consumer goods and key production factors, which can make goods and services more expensive for domestic buyers and consumers, reducing purchasing power. This means that while external competitiveness can increase, individual economic welfare can increase only to a certain extent. This has been affirmed by Ogege (2024) who observed that naira depreciation had negative impacts on income distribution in Nigeria, suggesting the potential for generating welfare costs for exchange rate adjustments even as they create opportunities for expansion of the external sector. The short-run effect is, however, weak in the ECM specification for governance at 10% significance level. This implies only a small short run link between per capita income and governance, and the interaction coefficient is very small, suggesting that the link between the two is not significant. The error correction coefficient of around 8.8% also suggests that the adjustment to the long-run equilibrium is relatively slow.

In contrast to the other two models, the exports model shows a positive and statistically significant long run effect of exchange rate while the short run effect is not significant. This result is in line with the argument of international competitiveness that led to the Marshall–Lerner condition and to the J-curve hypothesis. A depreciation of the currency can lead to relatively low prices of domestic products for foreign customers and can thus increase export demand. But the response can

be delayed, as there is no immediate capacity to adjust export production, access to markets and markets capacity. The discovery concurred Ijirshar *et al.* (2022) findings that depreciated exchange rate negatively influenced export in the short run but positively in the long run in Nigeria with evidence that supported the J-curve hypothesis. In the same way, Gold and Yusuf (2025) established that depreciation had positive effect on the export performance of non-oil sector of the economy of Nigeria. Furthermore, Anthony *et al.* (2024), who focused on the balance of payments rather than the export indicator used in this study, indirectly support the export findings by demonstrating that exchange rate fluctuations have asymmetric effects on Nigeria's external sector performance. The studies cited above indicate that there may be some justification for believing that adjustments in exchange rates offer incentives for export expansion, especially in the longer run.

However, the governance and its interaction with exchange rate is not statistically meaningful in the export model. This implies that an increase in the level of governance does not have a significant effect on the long-run export reaction to exchange rate fluctuations in the estimated specification. The finding is of particular relevance from an institutional point of view given that efficient governance can contribute to exports by means of its ability to facilitate regulatory efficiency, enforce contracts, ensure policy consistency and decrease transaction costs. However, in the study by Bah *et al.*, (2021) based on 45 Sub-Saharan African countries, good governance quality had a positive impact on total exports and some export components. Their results confirm the potential direct link between governance and exports, but in the current study, they investigate the relationship between exchange rate and export moderated by governance. Therefore, the results are not necessarily contrary. Instead, they propose that governance could affect the exports without significantly enhancing the link between exchange rate adjustments and exports. The error correction coefficient of the export model is also around 38.7% which suggests that the model adjusts relatively quickly towards long run equilibrium as compared to the GDP growth and per capita income models.

In conclusion, the findings indicate that the economic impact of exchange rate adjustments in Nigeria are outcome specific. It shows a positive long run relationship between depreciation and exports, but no statistical significance between depreciation and growth of GDP and growth of per capita income. Additionally, the very low interaction coefficients suggest that governance was not found to have a statistically significant moderating effect in the three models. The findings, therefore, support the proposition of exchange rate competitiveness, but raise doubts about the automaticity of broad economic growth and gains from depreciation. They also propose that the potential role of governance in economic performance may be through other institutional and structural mechanisms that are not captured by the moderating relationship of this study. Therefore, exchange rate management must be supported by policies to boost productive capacity, diversify exports, decrease imports reliance and enhance the performance of governance institutions.

CONCLUSION

This study concludes that exchange rate, governance, and their interaction maintain a stable long-run equilibrium relationship with real GDP, per capita income, and exports in Nigeria over the period 1996–2024. Nevertheless, governance does not exert a statistically significant independent effect on any of the three measures of economic performance, nor does it significantly moderate the relationship between exchange rate and economic performance. Exchange rate significantly enhances export performance in the long run but does not significantly influence real GDP or per capita income. These findings suggest that while exchange rate policy remains important for promoting exports, improvements in governance alone have not translated into measurable gains in aggregate output, income, or the effectiveness of exchange rate policy during the study period.

Policy Implications

Based on the findings of this study, the Nigerian government should implement policies that promote exchange rate stability while strengthening the productive capacity of the export sector to ensure that the long-run gains from exchange rate movements translate into sustained export growth. Efforts should also focus on diversifying exports beyond crude oil, improving trade competitiveness, and investing in infrastructure that supports export-oriented industries.

Furthermore, although governance and its interaction with exchange rate were not found to exert statistically significant effects on real GDP, per capita income, or exports, the government should continue to strengthen institutional quality through improved regulatory effectiveness, transparency, accountability, and prudent public resource management. Enhancing governance remains essential for creating an enabling environment in which macroeconomic policies, including exchange rate policy, can operate more effectively and contribute to sustainable economic development.

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