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The Role of Internatinal Capital Flow in Economic Diversification in Nigeria

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Abstract

This research examines the influence of international capital flows on economic diversification in Nigeria from 1981 to 2023. Adopting an ex post facto research design, the study relies on secondary data and applies the Autoregressive Distributed Lag (ARDL) model to assess both the short-term and long-term effects of foreign direct investment (FDI), foreign portfolio investment (FPI), remittances (RMT), and official development assistance (ODA) on real gross domestic product (RGDP). Findings from the ARDL Long Run Regression reveal significant relationships among several international capital movement variables. Notably, FDI exhibits a negative and statistically significant effect on RGDP, implying that FDI inflows may not effectively drive economic growth in Nigeria, possibly due to capital repatriation or a mismatch with key economic sectors. In contrast, FPI has a positive and significant effect on RGDP, suggesting that short-term portfolio investments contribute positively to economic expansion. Similarly, ODA demonstrates a positive and significant relationship with RGDP, reinforcing the role of foreign aid in stimulating growth. However, RMT does not show statistical significance, indicating that remittances may have a limited impact on economic growth. Based on these outcomes, it is suggested that Nigeria strengthen its investment framework by channeling FDI into productive sectors to enhance growth. Furthermore, policies aimed at ensuring the stability of foreign portfolio investments and optimizing the utilization of foreign aid resources could support economic expansion. This study highlights the importance of different forms of international capital in advancing Nigeria's economic growth.

Key words: Foreign direct investment; Portfolio investment; Remittance; Official development assistance; Real gross domestic product

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1. INTRODUCTION

The movement of international capital has played a crucial role in influencing the economic trajectories of developing nations, particularly in Africa, including Nigeria. These capital flows, which include foreign direct investment (FDI), portfolio investments, and external borrowing, serve as key channels for acquiring financial resources, technological advancements, and managerial expertise. In Nigeria, a resource-rich nation, international capital inflows are increasingly viewed as a vital driver of economic diversification. Traditionally, Nigeria's economy has been largely dependent on oil, contributing significantly to government revenue and export earnings. However, fluctuations in global oil prices and the negative implications of this reliance have highlighted the pressing need to expand the economy beyond the oil sector (Yoshino et al., 2019).

Economic diversification on the other hand, involves expanding an economy's productive base by reducing reliance on a single sector and promoting growth across multiple industries. It is often posited as a solution to the challenges of economic instability, unemployment, and poverty in resource-dependent nations. International capital flows play a strategic role in this process by

financing investments in agriculture, manufacturing, services, and other non-oil sectors. For instance, FDI can facilitate technology transfer and enhance productivity, while portfolio investments deepen the financial markets, creating opportunities for businesses to thrive. Despite these prospects, Nigeria has faced significant challenges in attracting and effectively utilizing international capital to achieve its diversification objectives. Issues such as policy inconsistency, inadequate infrastructure, and weak institutional frameworks have hindered the country's ability to leverage international capital flows for sustainable development (World Bank, 2023).

The urgency of economic diversification in Nigeria is further amplified by global shifts toward renewable energy and the declining relevance of fossil fuels. These trends threaten the long-term viability of oil as the cornerstone of Nigeria's economy. Recent studies highlight the potential of international capital to drive structural transformation by funding critical infrastructure and innovation in non-oil sectors (Okeke et al., 2022). For example, investments in renewable energy and digital technologies could spur industrialization and enhance Nigeria's global competitiveness. Nevertheless, the country continues to grapple with capital flight, low investor confidence, and a lack of strategic alignment between capital inflows and diversification goals (Ezeanyeji & Maureen, 2019).

The Nigerian government has introduced various reforms aimed at attracting international capital and promoting economic diversification. These initiatives include the creation of the Nigerian Investment Promotion Commission (NIPC) and the provision of tax incentives for foreign investors. Despite these measures, the outcomes have been mixed. According to data from the Central Bank of Nigeria (CBN), foreign direct investment (FDI) inflows have been declining, falling from $3.5 billion in 2019 to $1.6 billion in 2022, largely due to global economic uncertainties and domestic challenges (CBN, 2023). This downward trend raises concerns about Nigeria's ability to fund its diversification efforts, especially in the face of rising public debt and limited fiscal capacity.

Although there is a broad theoretical agreement on the positive impact of international capital flows on economic diversification, empirical findings present a more complex picture in Nigeria. Research suggests that while some types of capital inflows, such as foreign direct investment (FDI), support sectoral expansion and job creation, others, like short-term portfolio investments, can heighten macroeconomic instability (Adeniran & Yusuf, 2023). Moreover, the heavy concentration of foreign investments in the oil and gas industry has reinforced structural imbalances in the economy, thereby restricting the potential of international capital to drive meaningful transformation. This highlights the need for strategic policies that direct capital inflows toward key diversification sectors, including agriculture, manufacturing, and technology-driven industries.

The major problem revolves around the paradox of Nigeria's rich resource endowment and its persistent economic underperformance. Despite receiving significant international capital inflows over the decades, Nigeria remains one of the least diversified economies in Sub-Saharan Africa, with oil exports constituting over 85% of total exports. This dependency exposes the country to external shocks, as evidenced by the economic recessions triggered by the global oil price crashes in 2016 and 2020. Moreover, the inadequate diversification of the economy has constrained job creation, exacerbated poverty, and limited the country's resilience to global economic disruptions (Al-Smadi, 2018).

The ineffectiveness of international capital flows in promoting diversification in Nigeria is attributable to several factors. First, the predominance of extractive investments has perpetuated the "resource curse," where resource wealth undermines broader economic development (Auty, 2021). Second, weak governance and institutional corruption have led to the misallocation of foreign investments, reducing their developmental impact. Third, Nigeria's infrastructural deficit and unfriendly business environment discourage investors from exploring opportunities in non-oil sectors. These challenges underscore the need for a comprehensive reassessment of Nigeria's approach to leveraging international capital flows for diversification.

Moreover, existing literature lacks extensive analysis of the long-term impact of international capital on Nigeria's economic diversification. While numerous studies have explored the link between foreign direct investment (FDI) and economic growth, few have specifically examined how various forms of capital inflows influence diversification strategies. This gap underscores the need for a deeper investigation into the pathways through which international capital can drive structural transformation in Nigeria. Such an inquiry is particularly relevant given recent global economic shifts, including the COVID-19 pandemic and the ongoing energy transition, which have significantly altered the dynamics of international capital flows (Tellez-Leon & Ibarra, 2019; Lipovina-Božoviæ & Ivanovic, 2018).

As a result, the role of international capital flows in promoting economic diversification remains a crucial yet insufficiently explored aspect of Nigeria's development strategy. The nation's persistent dependence on oil, combined with the downward trend in FDI inflows, raises critical concerns about the effectiveness of current policies and the feasibility of achieving sustainable economic transformation. Addressing these challenges demands a comprehensive approach that integrates macroeconomic stability, institutional reforms, and strategic investment initiatives. By effectively channeling international

capital into key sectors that align with diversification goals, Nigeria can unlock new economic opportunities, strengthen resilience, and transition toward a more inclusive and sustainable growth model.

This study aims to examine the influence of international capital flows on economic diversification in Nigeria, using economic growth as an indicator of diversification. The specific objectives are to:

i. Determine the impact of Foreign Direct Investment (FDI) on Nigeria's economic growth during the study period.

ii. Investigate the effect of Foreign Portfolio Investment (FPI) on economic growth in Nigeria over the study period.

iii. Analyze the influence of Remittances (RMT) on Nigeria's economic growth throughout the study period.

iv. Evaluate the role of Official Development Assistance (ODA) in driving economic growth in Nigeria over the study period.

2. REVIEW OF RELATED LITERATURES

The study explores the concepts, theoretical framework, and empirical findings on the relationship between international capital flows and economic diversification, using economic growth as a proxy.

Concept of International Capital flow

International capital flow refers to the transfer of financial resources across national borders, including investments, loans, and transfers designed to generate economic benefits for recipient countries. These flows manifest in different forms, such as foreign direct investment (FDI), portfolio investments, and external borrowing. According to IMF (2023), international capital flows are driven by globalization, trade liberalization, and advancements in technology, which have reduced transaction costs and increased the mobility of capital. In developing economies like Nigeria, international capital flows are essential for bridging savings-investment gaps, stimulating infrastructural development, and fostering technological advancement. FDI, in particular, has been identified as a vital channel for transferring managerial expertise and facilitating industrialization. However, these flows are not without risks, as they expose economies to external shocks, currency volatility, and potential dependency on foreign capital sources.

Recent studies highlight the role of international capital flows in supporting economic diversification in resource-dependent economies. For instance, Mensah and Adebayo (2022) observed that FDI inflows into Nigeria's non-oil sector contribute to the expansion of manufacturing, agriculture, and services, thereby reducing over-reliance on crude oil exports. Similarly, the World Bank (2023) emphasized that international capital flow is integral to achieving sustainable growth in emerging markets, provided that regulatory frameworks are strong enough to prevent capital flight and mitigate the risks of economic instability.

International capital movement refers to the inflow and outflow of both tangible and intangible assets from foreign nations into a domestic economy, primarily for investment purposes to stimulate economic growth and development. Chigbu, Ubah, and Chigbu (2015) describe foreign capital inflow as the transfer of financial resources into a country to support investment, trade, and production activities. Additionally, international capital movement plays a crucial role in fostering economic growth by facilitating the transfer of modern technology, innovations, and technical expertise from foreign countries to the domestic economy (Fambon, 2013; Adusah-Poku, 2016). The key components of capital flows include Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Remittances (RMT), and Official Development Assistance (ODA).

Economic Diversification

Economic diversification involves expanding a country's economic base by generating income from multiple sectors rather than relying on a limited range of commodities or industries. In resource-dependent nations like Nigeria, diversification is crucial for mitigating exposure to external shocks, such as fluctuations in commodity prices. The United Nations Conference on Trade and Development (UNCTAD, 2023) describes economic diversification as a strategic process aimed at achieving sustainable development by encouraging investments in key sectors such as manufacturing, agriculture, and technology. Nigeria's heavy reliance on crude oil, which contributes over 80% of export earnings, has significantly hindered economic stability.

The theoretical basis for economic diversification is rooted in structural transformation, which emphasizes shifting from low-productivity to high-productivity sectors. Ajayi and Yusuf (2023) note that in Nigeria, economic diversification is linked to policy reforms, infrastructure development, and the attraction of international capital flows. Investments in areas such as renewable energy and agro-industries can enhance employment, boost export revenues, and strengthen economic resilience. However, achieving meaningful diversification requires strong institutions, skilled human capital, and a business-friendly environment to attract both local and foreign investments.

Moreover, empirical research indicates that economies with greater diversification are more resilient to global economic disruptions. Eze and Okonkwo (2022) found that diversified economies suffered less contraction during the COVID-19 pandemic compared to resource-dependent nations. In Nigeria, promoting diversification through well-structured policies and strategic investments remains essential for fostering inclusive and sustainable economic growth.

Theoretical Framework

There are series theories that explain the relationship between international capital flow and economic diversification in terms of economic growth. But in this study only two theories are discussed.

Two-Gap Model Theory

The two-gap model builds upon the Harrod-Domar growth model, which emphasizes the role of physical capital accumulation in driving economic growth. According to the Harrod-Domar framework, economic output is determined by the rate of investment and the efficiency of capital utilization. A savings gap emerges when domestic savings are insufficient to fund the level of investment needed to achieve a targeted growth rate. Alongside the savings gap, a foreign exchange or trade gap exists due to the inability of domestic production to meet all investment goods requirements. The two-gap model integrates these constraints to explain growth limitations in developing economies. Additionally, a more recent extension, known as the three-gap model, incorporates a fiscal gap, representing the shortfall between government revenues and expenditures, as demonstrated in the works of Bacha (1990) and Taylor (1990).

The movement of capital across borders is influenced by two main theoretical perspectives: push-factor and pull-factor theories (Calvo et al., 1993). Push-factor theories suggest that capital flows are driven by external conditions such as declining global interest rates, economic cycles in industrialized nations, and the increasing tendency toward international portfolio diversification (Calvo et al., 1996; Calvo & Reinhart, 1998). Conversely, pull-factor theories attribute capital movements to domestic conditions, including rising demand for money, improvements in domestic capital productivity, and the growing integration of national financial markets with global markets (Agenor & Montiel, 1999).

Balance of Payment Constrained Growth Theory

Thirlwall's Balance of Payments Constrained Growth model posits that a country's economic growth is limited by its balance of payments, meaning that an economy cannot expand beyond a rate that aligns with external equilibrium or a manageable deficit. According to Thirlwall (1979), sustained growth above this limit would require continuous external financing, which is often considered unsustainable.

The fundamental premise of the model is that long-term economic growth is determined by a country's export performance and import dynamics. The only sustainable way to finance increasing import demand, driven by economic expansion, is through higher foreign exchange earnings from exports. Consequently, the model assumes that trade balance equilibrium is primarily influenced by domestic income. Further elaborating on this, Ferreira and Canuto (2003) argue that balance of payments constraints emerge because export growth and investment in import substitution are the only demand components that can not only drive GDP growth but also alleviate foreign exchange limitations. A favorable balance of payments strengthens an economy's ability to expand while maintaining external stability.

Thirlwall (1979) applied a dynamic adaptation of the Harrod trade multiplier to demonstrate that the actual post-World War II growth rates of most developed economies corresponded to the ratio of real export growth to the income elasticity of import demand. Darku (2013) noted that Thirlwall and Bergen (2017) later extended the Balance of Payments Constrained Growth model by incorporating capital flows and relative price changes, which could cause a country's growth rate to deviate from the basic model's predictions. Their analysis of developing economies revealed that capital inflows had allowed some nations to achieve slightly higher growth rates than initially projected. However, despite these refinements, the model has faced criticism for overlooking factors such as the savings-investment gap, fiscal constraints, and the monetary implications of balance of payments dynamics. Additionally, it does not explicitly account for foreign exchange requirements needed to maintain adequate reserve levels.

Empirical Literatures

In empirical research, numerous studies have explored the relationship between international capital movement variables and economic growth in Nigeria, utilizing various indicators and estimation techniques. This study will highlight some of these empirical investigations.

Issoufou (2021) examined the impact of remittances on economic growth in Niger using an Error Correction Mechanism approach. The study employed several time-series econometric methods, including unit root tests, the Engle-Granger cointegration test, the vector equilibrium correction method, and diagnostic tests on residuals to analyze the relationship between remittances and economic growth. The results indicated the presence of a long-term relationship between these variables. The coefficient of the error correction term suggested that approximately 51.62% of the discrepancy between the short-run and long-run equilibrium is corrected annually, implying a reasonable adjustment rate. Additionally, in the short run, assuming other factors remain constant, a 10% increase in remittances resulted in a 2.03% rise in Niger's Gross Domestic Product (GDP).

Gabriel et al. (2020) investigated the effect of international capital flows on economic growth, measured by the real GDP growth rate, in the Economic Community of West African States (ECOWAS) sub-region. The study used annual panel data spanning 32 years (1986-2017) obtained from the World Development Indicators (WDI). Given that the data were secondary, an ex-post facto research design was adopted. The panel series became

stationary at first differencing, proving the absence of a unit root. The analysis was conducted using a Panel Least Squares (PLS) estimation method, and further assessments were performed using both fixed and random effect panel regression estimators, with the Hausman test determining the best fit. The study operated within a 5% error tolerance level. Findings indicated that external debt had a negative yet significant effect on real GDP growth, implying that external debt did not contribute to economic growth in the sub-region during the period under review. A key contribution of this study was its comparative analysis, which juxtaposed sub-regional findings with country-specific outcomes for the 15 ECOWAS member states using modified panel regression models.

David, Clement, and Titus (2020) explored the asymmetric effects of remittances on economic growth in Nigeria using a Non-linear Autoregressive Distributed Lag (NARDL) model with data spanning 1981 to 2018. The study provided evidence that economic growth responds asymmetrically to remittances in the long run. Findings indicated that both positive and negative changes in remittance inflows negatively affected the productive base of the economy in the long run. However, in the short run, positive variations in remittances hindered growth, while negative changes had a growth-enhancing effect. The study concluded that sustained increases in remittance inflows had not been effectively utilized for productive investments capable of driving economic growth in Nigeria. This aligns with the pessimistic perspective that continuous remittance inflows do not necessarily contribute to economic gains.

Eroni (2020) conducted an empirical analysis on the effect of official development assistance (ODA) on economic growth in Fiji from 1970 to 2008, employing a vector autoregressive (VAR) time-series cointegration technique. After applying standard econometric treatments, the study revealed that ODA did not exert a dynamic influence on per capita growth in Fiji. This was attributed to the high volatility in the level of official development assistance, largely influenced by the nation's political instability. The study recommended that Fiji should explore more stable foreign capital sources, such as private foreign direct investments, to ensure sustainable economic growth.

Asafo et al. (2019) analyzed the impact of international capital movement on economic growth in 46 Sub-Saharan African (SSA) countries from 1990 to 2017 using a two-step General Method of Moments (GMM) technique. The findings demonstrated that external debt had a negative and significant impact on GDP growth. However, the first lag of external debt variables had a positive effect, stimulating GDP growth. It was also observed that the adverse effects of external debt were not limited to either wealthy or poor SSA nations.

Mothibi and Mncayi (2019) utilized an autoregressive distributed lag (ARDL) model to examine the influence of government debt on South Africa's economy from 1994 to 2017. Their findings suggested a long-run causal relationship between government debt and key economic indicators, such as government spending, real GDP, inflation, and real interest rates. Among these, government spending, real GDP, and interest rates were the primary drivers of public debt. The study concluded that government debt negatively affected economic growth and inflation, while no significant short-run relationships were found between inflation, real interest rates, and government debt.

Mazheri and Dahalan (2019) investigated the impact of external debt, interest payments, and export earnings on Pakistan's economic growth from 1990 to 2017 using cointegration analysis. A unit root test was conducted to assess data stationarity, and an Error Correction Model (ECM) was employed for estimation. The short-run results indicated that (i) external debt to GDP negatively and significantly affected GDP, (ii) the external debt to export earnings ratio also had a negative and significant impact on GDP, and (iii) interest payments on external debt to GDP had an insignificant but positive effect. In the long run, all three ratios demonstrated a negative yet non-significant effect on GDP. The study concluded that these variables influenced about 56% of Pakistan's economy over the period analyzed.

The remaining studies similarly explore international capital movements, external debt, and economic growth in different regions, applying varied econometric models and methodologies. While some studies found that external debt hampers economic growth, others highlighted threshold effects or mixed outcomes depending on the economic context. Collectively, these studies contribute to the ongoing discourse on the impact of international capital movement on economic development, offering insights that inform economic policies and investment strategies in both developed and developing economies.

Ebhotemhen and Umoru (2019) explored how international capital movement influences agricultural production in Nigeria using annual time series data from 1980 to 2017. The study employed the error correction model (ECM) and a cointegration test to analyze the relationship among variables. The findings revealed that external debt negatively affected agricultural production, suggesting that loans obtained for agricultural purposes during the period under review were not effectively utilized to align with national objectives.

Seher and Taner (2019) investigated the relationship between international capital movement and economic growth within the Organization for Economic Cooperation and Development (OECD) countries. The study applied a panel threshold regression model to analyze panel data from 2002 to 2016. The findings indicated that the effect of public debt on economic growth followed a linear pattern. Although the public debt threshold for OECD nations was estimated at 99.75%, it was not statistically

significant. When the public debt-to-GDP ratio was either below or above this threshold, public debt had a negative but significant impact on economic growth.

Maitra (2019) analyzed the effects of public debt and foreign aid on macroeconomic indicators such as income, price levels, and interest rates in Sri Lanka between 1980 and 2000. The results suggested that public and external debt hindered income growth while raising price levels. Additionally, domestic debt influenced inflation, whereas foreign aid exerted a detrimental effect on both income and price stability. Moreover, both foreign debt and aid led to increased interest rates in both the short and long run, while domestic debt had no notable impact on interest rates.

Mohanty and Panda (2019) examined the macroeconomic effects of international capital movement in India using a structural vector autoregressive (SVAR) model with data spanning from 1980 to 2017. The study sought to understand how different types of public debt affected economic growth, investment, interest rates, and inflation. The findings revealed that public debt adversely impacted economic growth, while long-term interest rates increased due to rising debt. The study also found a mixed impact on investment and inflation, with both positive and negative effects. Furthermore, domestic debt had a more severe negative influence on the Indian economy compared to external debt.

Friday (2019) applied an autoregressive distributed lag (ARDL) model to analyze the short- and long-term relationships between remittances, financial sector development, and economic growth in Nigeria between 1981 and 2017. The empirical results confirmed a long-term relationship among the study variables. Furthermore, remittances were found to have a significant negative impact on economic growth in both the short and long run. Likewise, financial sector development also negatively influenced economic growth. Additionally, the study identified complementarity between remittances and financial sector growth in shaping economic expansion.

Saungweme and Odhiambo (2019) conducted a review of how international capital movement affects economic growth in both developing and developed economies. The findings were inconsistent, with varying results across different studies. While most studies reported negative effects of public debt on growth, some research suggested a long-term positive impact. Additionally, a few studies supported the Ricardian Equivalence theory, which argues that public debt does not significantly affect economic growth. The review also identified emerging empirical evidence highlighting the threshold effects of public debt on economic growth.

León, Murillo, and Hernández (2019) examined how international capital movement influences economic growth in Latin America. The study found that when the public debt-to-GDP ratio reached 75%, economic growth slowed down, whereas a ratio of 35% increased growth volatility. Using a panel autoregressive (VAR) model, the researchers discovered that public debt and terms of trade played a significant role in determining the impact of debt on economic growth. The study concluded that increasing public debt heightened economic vulnerability in the short term, although long-term growth remained essential for fiscal sustainability.

Sami and Mbah (2018) analyzed how external government borrowing affected economic growth in Oman. The study used annual time series data from 1990 to 2015, sourced from the World Bank and the Central Bank of Oman. By employing the ARDL econometric technique, the research found that external debt significantly and negatively impacted economic growth during the study period. However, gross fixed capital formation had a positive and significant effect on economic performance. The authors suggested that external debt should be channeled toward productive investments to enhance economic growth.

Adams and Klobodu (2018) examined the varied effects of capital inflows on economic growth in five Sub-Saharan African (SSA) countries between 1970 and 2014. Utilizing the ARDL model, the findings revealed diverse effects of foreign direct investment (FDI), foreign aid, external debt, and remittances on economic growth. FDI positively influenced growth in Burkina Faso but had negative effects in Gabon and Niger. External debt was detrimental to growth in most of the countries studied, while foreign aid boosted growth in Niger and Gabon but hindered it in Ghana. Remittances positively contributed to growth in Senegal. The study also highlighted the significance of gross capital formation, although trade had mixed effects across the selected countries.

Shkolnyk and Koilo (2018) explored the relationship between international capital movement and economic growth in Ukraine and other emerging economies between 2006 and 2016. The study employed the ADL model and correlation techniques. The results showed that the original values of the variables were not significant in estimating the parameters. The authors established that a rising external debt burden, coupled with macroeconomic instability, impeded economic growth in the examined economies. Furthermore, the study identified a critical debt threshold for emerging markets, where excessive external debt resulted in a negative marginal effect on growth. The findings emphasized the need for effective public debt management strategies in Ukraine.

3. METHODOLOGY

This research adopts an ex post facto research design, a retrospective method particularly suitable for analysing the historical effects of international capital movements on Nigeria's economic growth. By utilizing this approach,

the study evaluates the influence of independent variables including foreign direct investment, portfolio investment, and other forms of international capital inflows on economic growth without direct manipulation, ensuring objectivity and reliability.

The study relies on secondary data obtained from credible sources such as the Central Bank of Nigeria (CBN) and the World Bank database. The dataset comprises annual time-series data on key indicators of international capital flows, including Foreign Direct Investment (FDI), Portfolio Investment (PI), remittances (RMT), and Official Development Assistance (ODA), alongside Nigeria's Real Gross Domestic Product (RGDP), which serves as the principal measure of economic diversification. Covering the period from 1981 to 2023, the study provides a thorough assessment of both historical and recent trends in capital inflows and their implications for economic diversification.

Model Specification

This section aims to develop models that will facilitate the achievement of the study's stated objectives. An econometric approach is employed to construct a model that examines the effect of international capital flow variables on Nigeria's economic growth. The formulated model is designed to capture the influence of these capital flow variables on economic growth in the country.

The Autoregressive Distributed Lag (ARDL) model specification for the variables are stated below:
Initial Model:

$$InY_{it} = \emptyset InY_{it-1} + \beta X_{it} + (\psi_i + \varepsilon_{it}) \quad (3.1)$$

Transformed Model:

$$\Delta InY_{it} = \emptyset \Delta InY_{it-1} + \beta \Delta X_{it} + \Delta \varepsilon_{it} \quad (3.2)$$

By applying the above model to our variables, the model becomes:

$$\Delta RGDP_t = f\{\Delta(FDI, FPI, RMT, ODA)\} \quad (3.3)$$

The ARDL model equation based on the above functional relation is:

$$\Delta RGDP_t = \beta_0 + \beta_1 \Delta RGDP_{t-1} + \beta_2 \Delta FDI_t + \beta_3 \Delta FPI_t + \beta_4 \Delta RMT_t + \beta_5 \Delta ODA_t + \mu_t \quad (3.4)$$

A priori expectations of signs of parameters as contained in model 3.6 are:

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 \lessgtr 0, \beta_6 < 0 \quad (3.5)$$

Where;

RGDP	=	Real Gross Domestic Product proxy as economic growth
FDI	=	Foreign Direct Investment
FPI	=	Foreign Portfolio Investment
RMT	=	Remittance
ODA	=	Official Development Assistance (Foreign Aid)
μ	=	error term

This research utilizes the ARDL bounds testing approach to cointegration to examine the existence of a long-run relationship between international capital movements and economic growth. Initially, the stationarity of each variable is assessed using the Augmented Dickey-Fuller (ADF) test. Following this, the ARDL model is estimated, and a bounds test is conducted to verify the presence of cointegration. If a long-term relationship is identified, an Error Correction Model (ECM) is employed to analyse short-run dynamics.

4. RESULTS AND DISCUSSIONS

Descriptive Statistics

This section presents statistical measures such as the mean, median, standard deviation, and range for key variables, including foreign direct investment (FDI), portfolio investment, remittances, official development assistance, and Nigeria's economic growth. Analyzing these descriptive statistics provides a basis for subsequent inferential analysis, enabling a deeper exploration of the relationship between international capital flows and economic diversification in Nigeria.

Table 1
Descriptive Statistic

	RGDP	FDI	FPI	RMT	ODA
Mean	39902.54	2.45E+09	-1.55E+09	9.03E+09	1.55E+09
Median	31064.27	1.87E+09	-5.02E+08	1.30E+09	3.10E+08
Std. Dev.	21651.62	2.51E+09	3.41E+09	9.84E+09	2.18E+09
Jarque-Bera	5.239911	10.46906	86.71556	6.543140	162.7680
Probability	0.072806	0.005329	0.000000	0.037947	0.000000
Observations	43	43	43	43	43

Source: Author's own computation, using E View 10

The descriptive statistics presented in Table 4.1 offer a comprehensive summary of the key variables in this study, which investigates the influence of international capital movement on Nigeria's economic growth. Real Gross Domestic Product (RGDP), used as a proxy for economic growth, has an average value of 39,902.54, representing the typical level of economic output over the study period. The median RGDP of 31,064.27 is lower than the mean, indicating a positively skewed distribution of economic growth. Additionally, the high standard deviation of 21,651.62 revealed a considerable fluctuation in economic output, likely driven by both domestic and external economic factors.

Foreign Direct Investment (FDI) demonstrates an average inflow of approximately 2.45 billion, with a median of 1.87 billion. This positive mean suggests that FDI is generally a net inflow into the Nigerian economy, playing a potentially supportive role in economic growth. The high standard deviation of 2.51 billion further suggests considerable fluctuations in FDI inflows, indicating that foreign investors may have varied confidence levels in the Nigerian market over time. Foreign Portfolio Investment (FPI), on the other hand, shows a negative mean of -1.55 billion, indicating that outflows tend to exceed inflows. This variability is further emphasized by the standard deviation of 3.41 billion, reflecting the sensitivity of FPI to global financial conditions and market sentiment.

Personal Remittances (RMT) have the highest mean value at 9.03 billion, highlighting their significance as a consistent source of foreign capital. The range from a minimum of 2.4 million to a maximum of 24.3 billion, coupled with a high standard deviation of 9.84 billion, indicates substantial fluctuations. Official Development Assistance (ODA) has a mean value of 1.55 billion, suggesting moderate and fluctuating levels of foreign aid to Nigeria. The standard deviation of 2.18 billion, alongside the large range from 31.7 million to 11.4 billion, reflects inconsistency in aid flows, which may impact the stability of support from international donors.

Finally, the Jarque-Bera statistic shows non-normal distributions for FDI, FPI, RMT, and ODA, suggesting the presence of extreme values and irregular patterns in capital flows, which can have significant implications for economic growth stability in Nigeria.

Unit Root Results

First, it is essential to determine whether the underlying processes generating the data series remain consistent over time. If the process is non-stationary, representing the time series using equations with fixed coefficients may be challenging. The Augmented Dickey-Fuller (ADF) test, commonly employed in economic literature, is used for this purpose. Additionally, a unit root test was conducted to prevent biased estimates that could result in spurious regression outcomes in the specified model. All unit root tests were performed at a 5% significance level, with the results presented in Table 2.

Table 2
Stationarity Test Results using ADF unit root test

Variables	ADF unit root test		Prob.	Order of int.	Decision
	@ level	@ 1st Diff			
RGDP	-2.294880	-3.754598	0.0296	I (1)	Stationary
FDI	-1.759522	-8.354901	0.0000	I (1)	Stationary
FPI	-4.731441	-	0.0024	I (0)	Stationary
RMT	-1.780105	-5.411617	0.0004	I (1)	Stationary
ODA	-4.796031	-	0.0020	I (0)	Stationary

Source: Author's own computation, using E View 10

Table 2 presents the results of the unit root test conducted using the Augmented Dickey-Fuller (ADF) test to assess the stationarity of both the dependent and explanatory variables in the model. The empirical findings indicate that all variables became stationary at the first difference, except for foreign portfolio investment and official development assistance, which were found to be stationary at level. Consequently, it can be concluded that the variables exhibit stationarity either at the first difference or at level, thereby justifying the application of the Autoregressive Distributed Lag (ARDL) model. Before utilizing the ARDL results, a bounds test must be conducted to determine the existence of a long-run relationship between the dependent and independent variables.

Bound Test for long run Relationship

The result is presented below in Table 3

Table 3
ARDL Bounds Test result for cointegration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.619642	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Author's own computation using E view 10

The Bound Test results presented in Table 3 confirm the existence of a long-run relationship among the variables, as evidenced by the F-statistic value of 6.619642. This test involves comparing the F-statistic to the critical values of the lower bound (I(0)) and upper bound (I(1)) at different significance levels (10%, 5%, 2.5%, and 1%). For co-integration to be established, the F-statistic must exceed the upper bound (I(1)) critical value at a given significance level.

Based on the empirical results, the F-statistic (6.619642) surpasses the upper bound critical value at the 5% significance level, strongly rejecting the null hypothesis of "no levels relationship." This finding indicates a statistically significant long-run connection between the dependent and independent variables in the model. As a result, the ARDL model is suitable for estimating both long-term and short-term dynamics, given that the presence of a co-integrating relationship justifies its application for long-run analysis.

ARDL Estimates of the Long Run Regression

The results of the Autoregressive Distributed Lag estimates of the long run relationship in the model are presented in tables 4.4.

Table 4
ARDL Long Run Regression Estimates for the Model Dependent Variable: RGDP

Levels Equation

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-5.78E-06	4.40E-06	-4.312693	0.0028
FPI	1.03E-06	4.08E-06	4.253827	0.0020
RMT	1.71E-06	1.10E-06	1.564054	0.1321
ODA	1.46E-06	3.12E-06	3.466329	0.0056
C	11038.23	10721.99	1.029495	0.3144

EC = RGDP - (-0.0000*FDI + 0.0000*FPI + 0.0000*RMT + 0.0000*ODA +
11038.2299)

Source: Author's own computation using E view 10

The ARDL long-run regression analysis presented in Table 4 examines the influence of different types of international capital inflows: Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Personal Remittances (RMT), and Official Development Assistance (ODA) on Nigeria's economic growth, represented by Real Gross Domestic Product (RGDP). This analysis assesses the extent to which these capital flows either facilitate or impede economic growth in Nigeria, considering both their magnitude and statistical significance over the long term.

The coefficient for FDI is negative (-5.78E-06) and statistically significant at the 1% level (p = 0.0028). This indicates that, contrary to conventional expectations, FDI has an adverse long-term effect on Nigeria's economic growth. The negative impact of FDI could be attributed to factors such as profit repatriation by multinational corporations, inadequate technology transfer, or FDI inflows being concentrated in sectors with limited value addition, such as extractive industries. This suggests that foreign investments may not be effectively contributing to Nigeria's productive sectors.

Conversely, FPI has a positive coefficient (1.03E-06) and is statistically significant (p = 0.0020), indicating that foreign portfolio investments positively impact economic growth. This implies that investments in financial assets, including stocks and bonds, enhance liquidity in Nigeria's capital market, which in turn supports financial sector development, encourages local business investment, and stimulates economic activity. However, despite its benefits, FPI can introduce volatility, as portfolio investors may withdraw funds during periods of economic uncertainty. Thus, effective policies are necessary to maximize the advantages of FPI while mitigating its risks.

Personal remittances (RMT) exhibit a positive coefficient (1.71E-06) but are statistically insignificant (p = 0.1321), suggesting that while remittances contribute positively to the economy, their long-term impact is neither substantial nor consistent. Remittance inflows are primarily used for household consumption rather than productive investments, limiting their ability to drive long-term economic growth. Although remittances play a crucial role in improving household welfare and reducing poverty, their contribution to sectors that foster sustained growth appears minimal.

ODA has a positive coefficient (1.46E-06) and is statistically significant at the 1% level (p = 0.0056), indicating a beneficial effect on economic growth. Development assistance, which often funds social services and infrastructure projects, helps create a favorable environment for economic expansion by improving education, healthcare, and infrastructure. This finding suggests that ODA can have a lasting impact on Nigeria's economic development, particularly when efficiently allocated and managed with transparency and accountability.

In summary, the ARDL analysis highlights the varied effects of international capital flows on Nigeria's economic growth. While FDI, in its current state, appears

to have a detrimental effect, FPI and ODA contribute positively to economic growth. Meanwhile, remittances, despite their importance to household welfare, do not significantly impact long-term economic expansion. These findings emphasize the need for strategic policies to enhance the benefits of capital flows, including promoting productive FDI, managing FPI-related risks, utilizing ODA effectively for sustainable development, and encouraging remittance-driven investments in growth-enhancing sectors.

ARDL-ECM Test for Short Run

The results obtained are presented in Table 5.

Table 5
ARDL-ECM Test for the Model

ARDL Error Correction Regression

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	0.152955	0.139726	1.094677	0.2855
D(RGDP(-2))	0.290692	0.150155	1.935939	0.0658
D(RGDP(-3))	-0.390844	0.162309	-2.408017	0.0249
D(FDI)	-1.91E-07	1.33E-07	-1.442078	0.1634
D(FDI(-1))	2.50E-07	1.23E-07	2.038965	0.0536
D(FDI(-2))	5.65E-07	1.29E-07	4.380477	0.0002
D(FDI(-3))	2.63E-07	1.40E-07	1.877568	0.0738
D(FPI)	2.33E-08	4.36E-08	0.535571	0.5976
D(FPI(-1))	4.19E-08	4.64E-08	0.902931	0.3763
D(FPI(-2))	-1.19E-07	4.51E-08	-2.644046	0.0148
D(RMT)	1.82E-07	7.41E-08	2.451397	0.0226
CointEq(-1)*	-0.147618	0.010842	-4.392048	0.0002
R-squared	0.786886	Mean dependent var		1582.682
Adjusted R-squared	0.700062	S.D. dependent var		1490.812
S.E. of regression	816.4671	Akaike info criterion		16.49551
Sum squared resid	17998698	Schwarz criterion		17.00738
Log likelihood	-309.6624	Hannan-Quinn criter.		16.67916
Durbin-Watson stat	2.005546			

Source: Author's own computation using E view 10

The ECM-ARDL short-run regression results provide insights into the relationship between international capital flows and economic growth in Nigeria, with Real Gross Domestic Product (RGDP) serving as the dependent variable. The cointegrating equation, represented by the coefficient of the error correction term (CointEq(-1)), is estimated at -0.147618 and is statistically significant ($p = 0.0002$). This indicates that approximately 14.76% of any deviation from the long-term equilibrium is corrected each period, reinforcing the stability of the long-run relationship between RGDP and the explanatory variables.

The R-squared value of 0.786886 suggests that about 78.69% of the variations in RGDP can be attributed to fluctuations in the independent variables (FDI, FPI, RMT, and ODA) included in the model. This high explanatory power signifies that the model effectively captures the factors influencing economic growth. Similarly, the adjusted R-squared value of 0.700062, which accounts for the number of predictors, remains strong, demonstrating that the model is well-fitted without being overfitted.

The Durbin-Watson statistic, recorded at 2.005546, is very close to 2, indicating an absence of significant autocorrelation in the residuals. This is a crucial validation measure, ensuring the reliability of the regression results by confirming that the model's errors are independently distributed over time.

In conclusion, the ECM-ARDL short-run regression results not only establish a significant long-run connection between international capital movements and Nigeria's economic growth but also underscore the model's high explanatory power and statistical reliability. These findings provide valuable insights for policymakers and researchers in understanding the dynamics of capital inflows and their implications for economic growth.

5. CONCLUSION AND RECOMMENDATIONS

In conclusion, the empirical findings reveal a complex interplay between Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), personal remittances, and Official Development Assistance (ODA) concerning Real Gross Domestic Product (RGDP). The negative coefficient of FDI suggests that while foreign investment is essential, the prevailing investment climate may hinder its long-term benefits. This highlights the need for policy improvements to make Nigeria a more attractive destination for foreign investors.

On the other hand, the positive effect of FPI underscores its potential to drive economic growth, reinforcing the necessity for a well-developed and efficient capital market. The study also indicates that ODA contributes positively to economic expansion, emphasizing the significance of strategic aid utilization in addressing developmental challenges. Although personal remittances did not exhibit a statistically significant effect, they remain a vital income source for many households, presenting an opportunity for economic stimulation if effectively channelled into local investments.

Based on these empirical findings, the following policy recommendations are suggested:

i. The government should enhance investment conditions by creating a more favorable regulatory framework, addressing infrastructure deficiencies, and ensuring political stability.

ii. Policies should be implemented to improve market transparency, strengthen investor protections, and enhance the accessibility of financial instruments.

iii. Both government and private entities should develop frameworks that facilitate the productive utilization of remittances in local enterprises.

iv. The government should ensure that ODA aligns with national development strategies, directing assistance towards high-impact sectors such as education, healthcare, and infrastructure to maximize economic returns.

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