Reassessing the Foreign Direct Investment and Economic Growth Nexus: Evidence from West Africa.

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ABSTRACT

This study examined the impact of foreign direct investment (FDI) on economic growth in West African countries, using annual panel data spanning 1990 – 2024. The study adopts a PMG-ARDL estimation technique framework to investigate the relationship between FDI and economic growth, while accounting for both short-run dynamics and long-run relationships. The dependent variable is economic growth and the principal explanatory variable is FDI while variables such as inflation and merchandise trade included to account for macroeconomic stability and trade related influences on economic performance. The empirical results revealed that FDI has a positive and statistically significant effect on economic growth in West Africa in the long run. In contrast, the short-run was negative and statistically insignificant. The ECT was negative and statistically significant, confirming the existence of a stable long-run relationship among the variables and indicating a relatively speed of adjustment toward equilibrium. The study concludes that FDI contributes to economic growth in West Africa. Based on these findings, the study recommends that; individual West African government should implement policies aimed at improving the absorptive capacity of the economy to fully harness the benefits of foreign direct investment. Also Foreign direct investment should be channeled towards productive sectors of the economies rather than extractive sector alone.

Keywords: Foreign Direct Investment, Economic Growth, Merchandise Trade, Technology Transfer, PMG-ARDL

INTRODUCTION

Economic growth remains one of the most important aspirations of nations across the world. Governments, international institutions, and scholars continually seek to understand the factors that stimulate sustained economic expansion and improve the living standards of citizens (Mostafa & Wadud, 2024; Efayena & Olele, 2021). In both developed and developing economies, growth is often associated with increased productivity, technological advancement, improved infrastructure, and higher income levels. However, one of the most persistent challenges confronting developing economies is the shortage of domestic capital needed to finance productive investment (Adewale, 2025).

In recent decades, globalization has dramatically increased the mobility of capital, labor, and goods across national borders. Improved communication technologies, financial integration, and liberalized trade policies have facilitated the rapid movement of financial resources between countries (Adigun et al., 2025).

One of the most visible outcomes of this globalization process is the expansion of international financial flows such as foreign direct investment to developing countries. Foreign direct investment has become a key component in promoting economic growth in developing nations across the world. Foreign direct investment as a major contributor to economic growth, does not only provide the capital inflow, it also contributes to economic growth by generating employment opportunities, technology transfer, human capital development, increased productivity and trade expansion.

Developing economies often face severe financial constraints that limit their ability to achieve sustained economic growth. Insufficient domestic savings, low levels of industrialization, and inadequate infrastructure

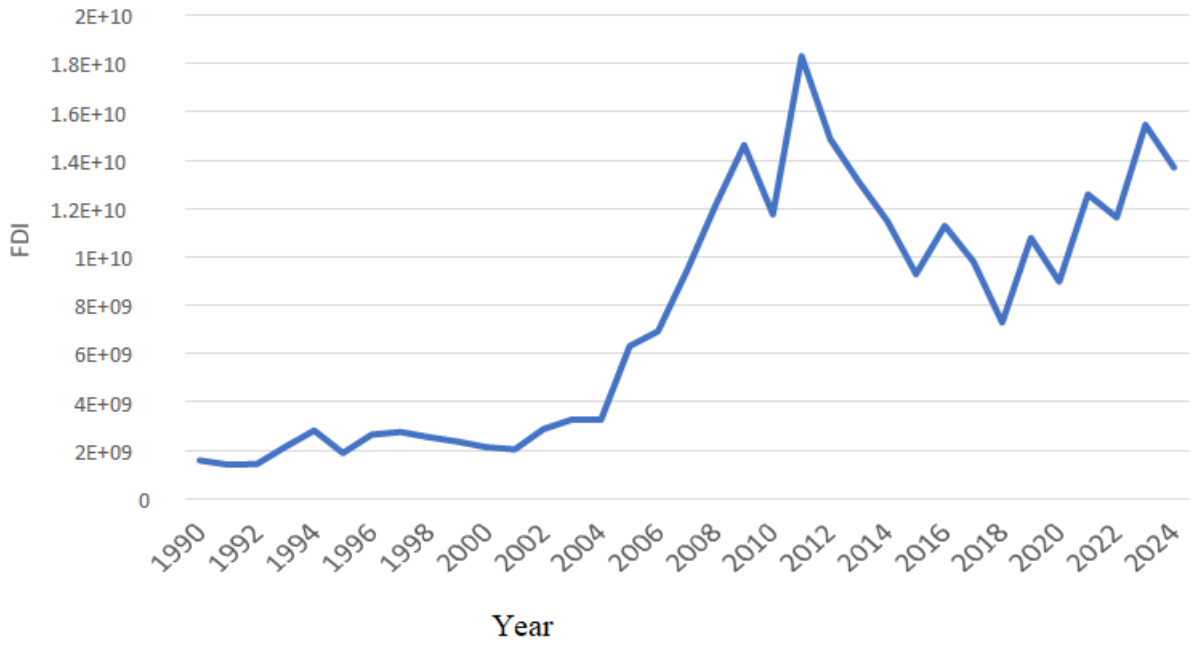
create significant barriers to economic development (Osahon & Olele, 2018; Efayena & Buzugbe, 2017). As a result, many countries rely on foreign capital inflows such as foreign direct investment to supplement domestic resources and stimulate investment. African countries have received significant inflows of both foreign direct investments.

Empirical findings from previous analysis have given different results due to the peculiarities such as institutional qualities, financial system, trade policy that exists amongst these countries. Foreign direct investment increases the stock of physical capital available within the host economy, thereby expanding production capacity. In developing countries where domestic savings are often insufficient to finance investment needs, FDI serves as an important source of additional capital (Zardoub & Sboui, 2023). Another significant channel is technology transfer. Over time, local firms may adopt these technologies through demonstration effects, imitation, or collaboration with foreign firms (Enow, 2025).

In addition to technology transfer, foreign direct investment contributes to human capital development. Multinational firms often provide training and skill development programs for their employees, thereby improving the quality of the labor force. This not only benefits the firms themselves but also enhances the overall productivity of the economy (Gachino, 2025).

One major reason for resorting to FDI inflows is the devastating effects of debts on economic growth (Efayena & Olele, 2019). West Africa is a region that has benefitted from FDI inflows. Across the years, there are wide fluctuation in FDI inflows in West Africa. These are presented in Figure 1.

Figure 1. Foreign Direct Investment Inflows from All Donors in West Africa (current US dollars)



The above data indicate that FDI reached its historical peak of approximately US$18.30 billion, demonstrating the increasing integration of West African economies into global investment markets. However, the upward trend was interrupted by several periods of decline, particularly following the 2008–2009 global financial crisis, the 2014–2016 collapse in international commodity prices, and the COVID-19 pandemic. These episodes illustrate the vulnerability of FDI to changes in global financial conditions, commodity markets, and investor confidence.

Overall, the stylized evidence indicates that while FDI has become an increasingly important source of external financing for West Africa, its relatively high volatility limits its reliability as a stable source of long-term development finance. The observed fluctuations suggest the need for policies that improve institutional quality, strengthen macroeconomic stability, diversify productive activities, and enhance the overall investment climate to sustain foreign capital inflows.

The literature reviewed highlights the impact of foreign direct investment on economic growth. While foreign direct investment has the potential to promote economic growth, empirical findings remain inconclusive. Some studies found a positive effect (Kubaje et. al. 2024; Fofana Xia and Traore (2018); Nicholas 2023; Shitu 2018), while other studies established a negative nexus (Chijoke 2023; Adeleye et. al. 2021; Alege and Ogundipe 2013). In addition, a comprehensive investigation of the relationship between FDI and economic growth is largely scarce in West Africa.

Against this background, this study reassesses the FDI–economic growth relationship in ten West African countries over 1990–2024. Its contribution is intended to be threefold. First, it updates the regional evidence to include the most recent period covered by the assembled dataset. Second, it distinguishes long-run relationships from short-run adjustments using the PMG-ARDL framework, which permits common long-run coefficients alongside country-specific short-run dynamics and adjustment speeds. Third, it considers inflation and merchandise trade alongside FDI, thereby evaluating the FDI–growth relationship within a parsimonious macroeconomic specification. These contributions should be understood as an updated regional assessment rather than a claim that the study provides the first evidence on FDI and growth in West Africa. The ten-country coverage is determined by the availability of the four study variables over the selected period; the implications of this restriction for representativeness are acknowledged in the methodology and limitations.

Specifically, the study addresses the following questions: (i) is FDI associated with economic growth in the long run in the selected West African countries? (ii) how does FDI relate to growth in the short run? and (iii) do inflation and merchandise trade exhibit significant long-run or short-run relationships with economic growth?

LITERATURE REVIEW

Conceptual Literature

Economic Growth

Economic growth refers to the sustained increase in the productive capacity of an economy over time, leading to a rise in the output of goods and services. This expansion is typically measured using macroeconomic indicators such as the growth rate of gross domestic product (GDP) or real GDP per capita, which capture changes in the value of economic production adjusted for inflation (Todaro & Smith, 2020; World Bank, 2023). While GDP growth remains the most widely used indicator, economists increasingly recognize that economic growth encompasses broader dimensions that extend beyond mere increases in output.

Foreign direct investment

Foreign direct investment (FDI) represents one of the most important components of international capital flows and has increasingly become a central element in the development strategies of many countries. Broadly defined, foreign direct investment refers to an international investment in which an investor resident in one economy establishes a lasting interest and exercises a significant degree of influence over an enterprise located in another economy. According to internationally accepted standards, particularly those of the International Monetary Fund (IMF) and the Organization for Economic Co-operation and Development (OECD), an investment is classified as FDI when the investor acquires at least 10 percent of the voting power in a foreign enterprise, thereby indicating a long-term relationship and a measure of managerial control (IMF, 2009; OECD, 2008).

Theoretical Review

Neoclassical growth theory

Robert Solow in his seminal 1956 work, the Neoclassical model provides a formal analytical structure that explains how capital accumulation, labor growth, and technological progress interact to determine the level and growth rate of output in an economy (Solow, 1956). Technology transfer is also another inflow of foreign direct investment that can influence economic growth. Due to the exogenous increase of FDI, it is expected that there will be an increase in economic growth.

Within the context of international capital flows, the neoclassical growth model provides a strong theoretical justification for the role of foreign direct investment in promoting economic growth. In developing countries where domestic savings are insufficient to finance desired levels of investment, foreign direct investment serves as an important source of external capital. By augmenting the domestic capital stock, FDI enables these economies to move closer to their optimal capital levels, thereby increasing output and accelerating growth (Borensztein, De Gregorio, & Lee, 1998).

The neoclassical model implies that capital should naturally flow from capital-rich countries to capital-scarce countries, where the marginal productivity of capital is higher. This prediction aligns with the theoretical expectation that developing countries should attract foreign investment due to higher potential returns. However, in practice, this flow is often constrained by factors such as political instability, weak institutions, and inadequate infrastructure, which limit the realization of these theoretical gains (Lucas, 1990).

Beyond capital accumulation, foreign direct investment can also indirectly influence economic growth within the neoclassical framework through its impact on technological progress and efficiency. Although technology is treated as exogenous in the basic model, FDI can act as a conduit for transferring advanced technologies and managerial expertise from developed to developing countries. This process effectively enhances the productivity of both capital and labor, thereby shifting the production function upward and increasing output levels (Borensztein et al., 1998; Alfaro et al., 2004).

Endogenous growth theory

Endogenous growth models highlight the importance of absorptive capacity in determining the extent to which host countries benefit from foreign direct investment. Absorptive capacity refers to the ability of an economy to effectively utilize and adapt new technologies, which depends largely on the level of human capital and institutional development. In countries with higher levels of education and stronger institutions, the positive impact of FDI on growth tends to be more pronounced (Alfaro et al., 2004). Conversely, in economies with weak human capital and institutional deficiencies, the potential benefits of foreign investment may not be fully realized.

Empirical Literature

Empirical evidence on the relationship between foreign direct investment inflow and economic growth presents a complex and often mixed picture. While a large number of studies suggest that foreign direct investment have positive effects on economic growth, others highlight a negative effect on economic growth and a few highlight the conditional nature of these relationships.

For instance, Kubaje, Richard, Eklemet and Sampson (2024) investigated the effects of FDIs and tax revenue on economic growth. Second, examined the threshold of taxes that enhance economic growth from 1990 to 2022. By using a fixed effect model, the study found that foreign direct investments significantly influence economic growth.

Fofana, Xia and Traore (2018) analyzed the relationship between foreign direct investment (FDI), economic growth and export in host countries in West Africa by applying the Pooled Mean Group (PMG) and the Granger causality test in the period 1980 to 2014. The Pooled Mean Group (PMG) estimation analysis revealed that FDI and export impact economic growth in West African countries. Also, Nicholas (2023) analyzed foreign direct investment (FDI) and economic growth in fifteen West Sub-Saharan African countries' relationship from 1990 to 2020, with secondary panel data from the World Bank (2022), at the expense of both interest rate and exchange rate effect. The main model used is Panel VECM. The results showed that FDI helped enhance economic growth in the long run. These investigations indicate that the growth impact of foreign direct investment becomes obtainable in the long-run due to absorptive capacities of host economies.

Other studies that support the positive impact of FDI on economic growth is given by Shitu (2018) examined the impact of FDI on economic growth in West Africa countries from 2001 to 2015. In order to achieve this, the study conducted empirical analyses by panel unit root, heterogeneous panel co-integration, and SUR multiple

regression. Research findings shows that FDI positively affects economic growth. At the larger African scope, Njangang et al. (2018) investigated the long run and short run effects of foreign direct investment on economic growth in 36 African countries for the period 1980 – 2016, employing pooled mean group (PMG) estimator. The study showed that foreign direct investment has a significant and positive long run impact on economic growth. Collectively, these studies indicate that FDI has a positive and significant impact on economic growth in the long-run although the short-run is negative.

On the other hand, some studies have established that foreign direct investment has a negative impact on economic growth. The findings show that the impact of FDI may depend on host economies, absorptive capacity, profit repatriation. For instance, Alege and Ogundipe (2013) investigated the relationship between foreign direct investment and economic growth in ECOWAS using the System-GMM panel estimation technique covering the period 1970-2011.The study adopted System-GMM in order to overcome the weaknesses The results of the System-GMM appeared contrary to earlier studies, as the contribution of FDI was insignificant and impacts negatively on growth in ECOWAS despite the controlling for the role of human capital and quality of institutions in the model. Correspondingly, Chijioke (2023) examined the effects of foreign direct investment on Africa's economic growth from 2011-2020. The study utilized selected African countries from the four major geographical regions as case study. The results gotten from the static and dynamic panel data approach were compared on a coefficient significance basis. The study found that at 10% significance level, foreign direct investment exerted a negative effect on Africa's economic growth over the period of the study.

At individual African countries level, Adeleye et al. (2021) investigated the effect of Foreign Direct Investment and Remittances on economic growth in Nigeria. The study uses data from 1980 to 2019 and OLS was used to analyze the data after it has been subjected to unit root stationary test. The study found that Foreign Direct Investment has a negative relationship with economic growth and Remittances seem to have a positive effect on economic growth.

Furthermore, Velonjara and Gondje-Dacka (2019) examined the contribution of foreign direct investment to economic growth through the main sector of economies in 5 Low-Income economies (Burkina Faso, Guinea Bissau, Liberia, Niger and Sierra Leone) and 4 Lower-middle-income economies

(Cote d'Ivoire, Ghana, Nigeria and Senegal) of West Africa. Using regression model and the Granger causality test with a panel data for the period 2000-2016, it was discovered that in all West Africa's region the FDI's contribution positive but not significant with an autocorrelation positive. While their sectoral investigations revealed that FDI contributed negatively in the primary sector and positive in the secondary and tertiary sectors. This indicate that the impact of FDI depends on the sector of the economy receiving investment.

The reviewed studies provide useful but not uniform evidence. Research focused on West Africa generally reports a positive long-run association between FDI and growth, while other regional and country-level studies report insignificant or negative effects. The evidence also suggests that the sectoral destination of FDI and the capacity of domestic firms to absorb technology may condition the growth effect. However, the literature review in the present manuscript does not yet establish that earlier studies are directly comparable in their country coverage, variable measurement, sample period and estimation strategy. The contribution of the current study therefore rests on updating the regional sample through 2024 and estimating both long-run and short-run relationships for the ten countries with available observations. A stronger claim of novelty would require a more systematic comparison of prior West African PMG studies and a clear explanation of what the present specification adds beyond the extension of the sample period.

Although several studies have investigated the impact of FDI on economic growth, their sample periods and country coverage differ. This study re-examines the relationship using the latest available observations in the assembled dataset, covering 1990–2024. The analysis uses a PMG-ARDL framework to distinguish the long-run association from short-run dynamics. The empirical contribution is conditional on the adequacy of the panel diagnostics, the evidence of cointegration and the robustness of the estimates reported below.

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MATERIALS AND METHOD

Model Specification

The empirical model examines whether foreign direct investment is associated with economic growth after controlling for inflation and merchandise trade. The specification is motivated by the neoclassical view that capital accumulation can expand productive capacity and by endogenous growth arguments that the realised gains from FDI depend on domestic absorptive capacity and the diffusion of technology.

The functional relationship is specified as:

$GDPGR_{it} = f(FDI_{it}, INF_{it}, MT_{it})$

The corresponding long-run panel relationship is expressed as:

$GDPGR_{it} = \alpha_i + \beta_1 FDI_{it} + \beta_2 INF_{it} + \beta_3 MT_{it} + \varepsilon_{it}$

where i denotes country and t denotes year. GDPGR is the annual GDP growth rate; FDI is foreign direct investment inflows measured as a percentage of GDP; INF is the annual inflation rate; and MT is merchandise trade measured as a percentage of GDP. The subscripts identify country-year observations. Under the PMG restriction, long-run slope coefficients are constrained to be common across countries, while short-run coefficients, intercepts and error variances may differ.

α_i = country-specific intercept; β_1, β_2 and β_3 = long-run coefficients on FDI, INF and MT, respectively; ε_{it} = disturbance term. The PMG estimator imposes common long-run slope coefficients while allowing short-run dynamics and adjustment parameters to vary across countries.

i = Cross-sectional units

t = Time period

Apriori expectations

Based on economic theory and empirical literature, the expected signs of the coefficients are as follows:

- β_1(FDI) > 0: Foreign direct investment is expected to positively influence economic growth through capital inflow, technology transfer, and job creation.
- β_2 (INF) < 0: Inflation is expected to negatively affect economic growth due to macroeconomic instability.
- β_3 (MT) > 0: Merchandise Trade is expected to positively influence economic growth through increased trade

Data and variables

The study uses secondary annual panel data for ten West African countries over 1990–2024. The countries are Nigeria, Ghana, Côte d'Ivoire, Sierra Leone, Mali, Burkina Faso, Senegal, Liberia, Benin and The Gambia. Data availability determines the reason for selecting these countries. This is a purposive, data-availability-based sample rather than a probability sample of all West African economies. Data on GDP growth, FDI inflows, inflation and merchandise trade were obtained from the World Development Indicators (WDI). The ten-country restriction reflects the availability of a sufficiently long series for the selected variables. Table shows the variables and the measurement.

Table 1. Variables and Measurements

Variable	Description	Measurement	Source
GDP growth (GDPGR)	Annual growth rate of real gross domestic product. It measures the year on year change in the total value of goods and services produced in the economy, adjusted for inflation. It is the dependent variable and proxied for economic growth.	Annual % growth	WDI (2024)
Foreign direct investment (FDI)	Net inflows of foreign direct investment. It captures investment by a foreign investor who acquires a lasting management interest. It is the main the independent variable.	% of GDP	WDI (2024)
Inflation (INF)	Annual change in general price level, measured by consumer price index. It is used as a control for macroeconomic instability	Annual % growth	WDI (2024)
Merchandise trade (MT)	Total merchandise trade comprises the sum of merchandise export and merchandise imports of goods. It captures the degree of openness to trade in physical goods. It is used as a control for trade integration.	% of GDP	WDI (2024)

Estimation Technique

The empirical strategy proceeds in stages. First, the panel structure and data coverage are documented, followed by descriptive statistics and tests of cross-sectional dependence. Cross-sectional dependence matters because West African economies may be exposed to common regional, global and commodity price shocks. The IPS panel unit root test is reported in the original analysis. however, IPS is a first-generation test whose conventional implementation relies on cross-sectional independence.

Second, the integration order of each variable is assessed to establish that no variable is I(2), because the standard ARDL/PMG framework used is not valid when variables are integrated of order two. Third, panel cointegration should be tested and reported before interpreting the long-run PMG coefficients. The study reports a Hausman comparison between PMG and MG, but that test selects between estimators. It does not itself establish cointegration.

The PMG-ARDL model can be represented in error-correction form as:

$$\Delta GDPGR_{it} = \emptyset_i\left[GDPGR_{i,t-1} - \theta_1 FDI_{i,t-1} - \theta_2 INF_{i,t-1} - \theta_3 MT_{i,t-1}\right] + \sum_{j=1}^{p-1} \lambda_{ij}\Delta GDPGR_{i,t-j} + \sum_{j=0}^{q_1-1} \delta_{1ij}\Delta FDI_{i,t-j} + \sum_{j=0}^{q_2-1} \delta_{2ij}\Delta INF_{i,t-j} + \sum_{j=0}^{q_3-1} \delta_{3ij}\Delta MT_{i,t-j} + \mu_i + \varepsilon_{it}$$

α_i = country-specific intercept

θ_1, θ_2, θ_3 = long-run coefficients

ϕ_i = country-specific error correction coefficient

λ_{ij} = short-run coefficients of lagged GDP growth

δ_{1ij}, δ_{2ij}, δ_{3ij} = short-run coefficients of FDI, inflation, and merchandise trade

μ_i = country-specific fixed effect

ε_{it} = error term

p, q_1, q_2, q_3 = lag orders

RESULTS AND DISCUSSION

Descriptive Analysis

This section presents the descriptive statistics of the variables used in the study. The purpose is to provide a preliminary understanding of the distributional properties, central tendencies and variability of the data in the West Africa before proceeding for further econometric analysis.

Table 2. Descriptive Statistics

Variable	**Mean (Std. Dev.)**
GDPGR	4.15 (8.50)
FDI	3.86 (12.48)
INF	10.33 (18.50)
MT	51.67 (83.10)

Source: Author's computation from STATA output

From the descriptive analysis the key variables, Economic growth which is proxied by the GDP growth rate (GDPGR) has a positive mean value in West Africa 4.15 (8.50) which indicate that there was general growth during the period under investigation. Foreign direct investment (FDI) recorded an average 3.86 (12.48), it implies that West Africa maintains a modest baseline for investment, the distribution is as a result of spatial disparity and temporal volatility.

Unit Root Analysis

The Im, Pesaran and Shin (IPS) panel unit-root test was used to assess the stationarity properties of the variables. The reported table gives test statistics and p-values, but does not clearly distinguish the level and first-difference test results in a conventional presentation. The manuscript identify the deterministic specification, lag-selection procedure, and number of observations used in each test. The stated decision rule is based on the p-value (reject the unit-root null when $p < 0.05$) or the relevant critical value, rather than describing the statistic as "greater" without clarifying whether the comparison is in absolute terms.

Table 3. Unit root test

Variable	At Level – IPS statistic (p-value)	At First difference – IPS statistic (p-value)	Order	Remark
GDPGR	-9.8489 (0.0000)	-	I(0)	Stationary at level
FDI	-4.1818 (0.0000)	-	I(0)	Stationary at level
INF	-9.3630 (0.0000)	-	I(0)	Stationary at level
MT	-1.5644 (0.0589)	-10.9159 (0.0000)	I(1)	Stationary after first difference

Source: Author's computation from STATA output

As reported in Table 3, GDPGR, FDI and INF have IPS statistics of −9.8489, −4.1818 and −9.3630, respectively, with reported p-values of 0.0000. The table classifies these variables as I(0). Merchandise trade has a reported statistic of −10.9159 and is classified as I(1), but the table does not show the corresponding level and first-difference results needed to verify that classification. The reported p-value of 0.0000 for MT, without separate level and first-difference entries, is insufficient to establish that it is I(1). The unit-root table must therefore be reconstructed to show each variable's test result at level and first difference, with the integration order assigned from those two tests. Subject to verification that no variable is I(2), a mixture of I(0) and I(1) variables is compatible with the PMG-ARDL framework.

Hausman Test

The Hausman specification test is used to determine which of the estimator is preferred between the Pooled Mean Group (PMG) and the Mean Group (MG). The results are presented in Table 4.

Table 4. Hausman test

Estimator	**Stat**	**DOF**	**p-Value**	**Decision**
Mean Group vs PMG	5.858072	4	0.2100	PMG preferred

Source: Author's computation from STATA output

The reported Hausman statistic is 5.858072 with four degrees of freedom and a p-value of 0.2100. Since the p-value exceeds the 5% significance level, the null hypothesis is not rejected. Under the standard PMG-versus-MG Hausman comparison, this result is consistent with the restriction that long-run coefficients are sufficiently homogeneous for PMG to be preferred on efficiency grounds. This conclusion is conditional on the validity of the test specification and should be considered alongside the economic plausibility of common long-run coefficients across countries with different structures.

Estimation test

The PMG-ARDL approach is employed to establish whether Foreign direct investment contribute to economic growth in West Africa, in both the long-run and short-run, while accounting for differences in short-run adjustment across countries. The results are presented in Table 5.

Table 5. PMG-ARDL Estimates

Variable	**Coefficient**
Long-run estimates	
FDI	0.2066 *** (0.001)
INF	-0.0247 (0.154)
MT	0.03128 *** (0.003)
Error correction term	-0.9507 *** (0.000)
Short-run estimates	
FDI	-0.0503 (0.641)
INF	-0.0050 (0.742)
MT	0.0101 (0.845)

Source: Author's computation from STATA output

Note: *** p<0.01, ** p<0.05, * p<0.10

The reported long-run PMG-ARDL estimates indicate a positive and statistically significant association between FDI and economic growth. The FDI coefficient is 0.2066 (p = 0.001). Inflation has a negative coefficient of −0.0247 but is statistically insignificant at conventional levels (p = 0.154). Merchandise trade has a positive coefficient of 0.03128 and is reported as statistically significant (p = 0.002). This indicates a positive conditional long-run association between the merchandise-trade measure and GDP growth, subject to confirmation of the exact trade indicator and its units.

In the short run, the FDI coefficient is negative (−0.0503) but statistically insignificant (p = 0.641). Inflation is also negative and insignificant (−0.0050; p = 0.742), while merchandise trade is positive and insignificant (0.0101; p = 0.845). Thus, the reported short-run estimates do not establish statistically significant contemporaneous effects for any of the three explanatory variables.

The reported error-correction coefficient is −0.9507 (p < 0.001). Its negative and statistically significant sign is consistent with adjustment towards the estimated long-run relationship. If the coefficient is indeed the pooled or representative adjustment parameter reported by the PMG output, its magnitude suggests relatively rapid adjustment within one annual period.

On the short-run FDI exerted a negative a statistically insignificant impact -0.0503(0.641) this may be due to absorptive capacities of host economies, crowding-out and time lag. Inflation was negative and statistically insignificant -0.0050(0.742), merchandise trade was positive but statistically insignificant 0.0101(0.845). The ECM was negative and statistically significant -0.9507(0.000), showing that there is a long-run equilibrium relationship among the variables and a fast speed of adjustment.

Table 6. Fully Modified Ordinary Least Squares

Variable	**Coefficient**
Foreign direct investment	0.32 *** (8.32)
Inflation	-0.05 *** (-4.65)
Merchandise trade	0.01 *** (3.20)

Source: Authors Computation 2026

Note: *t-values are reported in parentheses*. *** p<0.01

Table 6 reports the FMOLS estimates as follows: FDI = 0.32 (t = 8.32), inflation = −0.05 (t = −4.65), and merchandise trade = 0.01 (t = 3.20). Taken strictly as displayed, all three FMOLS coefficients are statistically distinguishable from zero at conventional levels, with FDI and merchandise trade positive and inflation negative. The direction of the FMOLS estimates displayed in Table 6 is broadly consistent with the reported PMG long-run signs: positive for FDI and merchandise trade and negative for inflation.

Merchandise trade has a positive coefficient of 0.01, with a t-value of 3.20, indicating a statistically significant positive relationship with growth. This reinforces the PMG-ARDL evidence that trade integration contributes positively to economic performance in the region.

DISCUSSION OF FINDINGS

The reported PMG estimates suggest that the association between FDI and economic growth in the ten-country sample is more clearly observed in the long run than in the short run. The long-run coefficient is positive and statistically significant (0.2066; p = 0.001), whereas the short-run coefficient is negative but statistically insignificant (−0.0503; p = 0.641). This pattern is consistent with the possibility that the growth effects of foreign investment may take time to emerge as investment projects become operational, domestic suppliers develop linkages with foreign firms, and knowledge or production practices diffuse.

The positive long-run association is broadly in line with Fofana, Xia and Traore (2018), who used PMG and causality analysis for West Africa and reported a positive contribution of FDI to growth. It is also consistent with the regional evidence summarised in the manuscript from Shitu (2018) and Njangang and Ndeffo (2018). Nevertheless, differences in periods, country coverage, variable definitions and estimation methods mean that these studies should be treated as contextual comparisons rather than exact replications.

Inflation has a negative but statistically insignificant long-run coefficient (−0.0247; p = 0.154) and a negative but statistically insignificant short-run coefficient (−0.0050; p = 0.742). The negative signs are consistent with the proposition that macroeconomic instability can weaken investment planning and purchasing power. Merchandise trade, by contrast, has a positive and statistically significant long-run coefficient (0.03128; p = 0.002), while its short-run coefficient is positive but insignificant (0.0101; p = 0.845). This suggests that the trade-growth association is also more evident over the long run.

SUMMARY, CONCLUSION AND RECOMMENDATION

This study examined the relationship between foreign direct investment and economic growth in ten West African countries using annual panel data from 1990–2024. The reported PMG-ARDL estimates show a positive and statistically significant long-run association between FDI and GDP growth, alongside a negative but statistically insignificant short-run coefficient. Merchandise trade is positively associated with growth in the long run but not in the short run, while inflation has negative but statistically insignificant coefficients in both horizons. The reported negative and statistically significant error correction term is consistent with adjustment towards a long-run relationship. The long-run FDI association is compatible with capital accumulation and technology diffusion explanations discussed in neoclassical and endogenous growth theories.

This study recommends that governments in the sample countries may strengthen the domestic conditions that help firms and workers benefit from foreign investment, including absorptive capacity, infrastructure, skills development, predictable regulation and business linkages. These measures are justified as enabling conditions in the theoretical literature, although their individual effects are not estimated in this model. Second, investment-promotion agencies may seek FDI projects with stronger domestic supplier, employment and value-addition linkages. Third, trade facilitation and productive capacity policies may help convert the positive long-run merchandise trade association into sustained growth.

The study has limitations. The sample is restricted to ten countries by data availability and may not represent all West African economies. The model includes only FDI, inflation and merchandise trade as explanatory variables, leaving out other potentially important growth determinants such as domestic investment, human capital, institutional quality, financial development and infrastructure. For future research, the analysis could be extended by examining whether the FDI–growth relationship differs across countries and sectors, and by testing the conditioning roles of human capital, institutional quality, financial development and domestic investment. Such extensions would require additional data and a revised empirical specification. The PMG estimator imposes a common long-run relationship, therefore findings represent regional outlook. Country specific short-run coefficients are not reported. Differences in institutions, FDI sector and absorptive capacity across the ten countries may be masked. Future research should estimate country-by-country ARDL models.

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