

Journal of Economics, Business, and Commerce

ISSN: 3007-9705 (Online)

Volume 3 Issue 2, (2026)

https://doi.org/10.69739/jebc.v3i2.2470

https://journals.stecab.com/jebc

Published by
Stecab Publishing

Research Article

Does Institutional Quality Condition the Contribution of Foreign Direct Investment to Economic Growth in the ECCAS?

Dunia Mastaki Jean[1], Ngouhouo Ibrahim[1]

ABSTRACT

This study analyzes the effect of foreign direct investment (FDI) on the economic growth of the eleven ECCAS (Economic Community of Central African States) countries between 2000 and 2023, examining the moderating role of four institutional dimensions: the rule of law, government effectiveness, political stability, and the control of corruption. Using panel data, estimates are generated through ordinary least squares (OLS), fixed effects (FE), random effects (RE), and generalized least squares (GLS) models. The results show that FDI has a positive and statistically significant effect on economic growth when the analysis accounts for the rule of law (interaction coefficient: −0.0423; p = 0.007, based on GLS), government effectiveness (−0.0327; p = 0.002), and political stability (−0.0197; p = 0.001). These negative interaction coefficients indicate that the marginal effect of FDI decreases as these institutional dimensions improve. Conversely, the interaction between FDI and the control of corruption is not statistically significant (0.00279; p = 0.859), and the direct effect of FDI also becomes non-significant in this specification. Furthermore, gross fixed capital formation and natural resources contribute positively to growth, while trade openness and financial development generally show negative effects. These findings underscore the need to strengthen institutions, infrastructure, human capital, and local productive capacities to enhance the economic benefits derived from FDI.

Keywords: *Economic Growth, Foreign Direct Investment (FDI), Institutional Quality, Jel: F21, F23, O55*

Submission: September 8, 2026 **Acceptance:** October 25, 2026 **Publication:** November 3, 2026

[1] Faculty of Economics and Management, University of Dschang, Cameroon

Contact: Dunia Mastaki Jean @ mastakidunia151@gmail.com

Citation Style: Dunia, M. J., & Ibrahim, N. (2026). Does Institutional Quality Condition the Contribution of Foreign Direct Investment to Economic Growth in the ECCAS?. *Journal of Economics, Business, and Commerce*, *3*(2), 251-266. https://doi.org/10.69739/jebc.v3i2.2470

Copyright: © 2026 by the authors. Licensed Stecab Publishing. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license.

1. INTRODUCTION

Foreign direct investment (FDI) is widely recognized as a potential driver of economic growth in developing countries through capital accumulation, technology transfer, skills development, access to international markets, and productivity improvements. From a theoretical perspective, FDI can complement domestic investment and accelerate economic development by introducing new technologies and facilitating knowledge spillovers (Borensztein *et al.*, 1998). Nevertheless, the contribution of FDI to growth is not automatic. Its effectiveness depends on the host country's capacity to absorb foreign technologies, mobilize domestic financial resources, develop human capital, and provide a predictable institutional environment. Alfaro *et al.* (2004) demonstrate that financial market development conditions the growth effects of FDI, while Durham (2004) emphasizes the importance of absorptive capacity and institutional characteristics. Similarly, Borensztein *et al.* (1998) show that the benefits of FDI depend on a sufficient level of human capital, and Balasubramanyam *et al.* (1996) highlight the role of trade openness in determining its contribution to economic growth. These findings suggest that understanding the growth effects of FDI requires examining not only its direct contribution but also the institutional and structural conditions under which foreign capital is invested and absorbed.

This issue is particularly relevant to the Economic Community of Central African States (ECCAS), whose member countries exhibit substantial differences in economic structures, investment patterns, political stability, and institutional performance. Despite the region's considerable natural resources and potential for attracting foreign capital, the capacity to transform investment inflows into sustained and inclusive economic growth remains uneven. Recent evidence illustrates the magnitude of this challenge. According to UN Trade and Development (UNCTAD, 2023), net FDI flows to the ECCAS region amounted to approximately –US$0.1 billion in 2022, compared with around US$2 billion in 2017, indicating a marked deterioration in regional investment flows. The subsequent recovery was uneven: UNCTAD's World Investment Report 2025 reports that inward FDI flows to Central Africa increased from US$7.017 billion in 2023 to US$7.907 billion in 2024, an increase of 12.7% (UNCTAD, 2025). These regional aggregates should be interpreted cautiously because they do not represent the ECCAS countries exclusively and may conceal substantial differences between national economies. Nevertheless, they illustrate the volatility of investment flows and the need to investigate whether the volume of foreign capital translates into stronger economic performance. Economic growth has also remained uneven. In the Central African Economic and Monetary Community (CEMAC), which comprises six ECCAS members, the World Bank (2024) reported that economic growth slowed from 3.1% in 2022 to 1.7% in 2023, partly because of declining oil activity in Equatorial Guinea and slower growth in Gabon. This divergence between investment potential, capital flows, and economic performance raises a central question: why does foreign investment generate stronger growth in some country contexts than in others?

Institutional heterogeneity provides a plausible explanation for these differences. The rule of law, government effectiveness, political stability, and control of corruption can influence investor confidence, contractual security, transaction costs, public resource allocation, and the capacity of domestic firms to benefit from foreign technologies. Daude and Stein (2007) show that institutional quality is an important determinant of FDI, while Méon and Sekkat (2005) examine the implications of corruption for economic performance. Jude and Levieuge (2017) further demonstrate that institutional quality conditions the growth effects of FDI in developing economies. More recent research continues to emphasize the relationship between institutions, foreign investment, and economic performance (Li *et al.*, 2023; Khan *et al.*, 2024). Regional evidence reinforces the relevance of this institutional dimension. According to the 2024 Ibrahim Index of African Governance, the ECCAS regional average for overall governance stood at 42.0 out of 100 in 2023, with an improvement of only 1.0 point between 2014 and 2023 (Mo Ibrahim Foundation, 2024). Although this regional average indicates limited progress, it does not capture the full diversity of institutional conditions among member states. Differences in the enforcement of laws, administrative effectiveness, political stability, and corruption control may alter the extent to which foreign investors contribute to domestic production, employment, and productivity. Consequently, treating institutional quality as a single, uniform characteristic risks overlooking the distinct mechanisms through which governance influences the relationship between FDI and economic growth.

The empirical literature confirms that the growth effects of FDI vary across countries, periods, and economic structures. Gui-Diby (2014) identifies changes over time in the relationship between FDI and economic growth in Africa, while Odhiambo (2022) finds differences in the strength of this relationship across income groups in sub-Saharan Africa. Asafo-Agyei and Kodongo (2022) identify a nonlinear relationship between FDI and growth, suggesting that investment may become more beneficial after a certain threshold. At the same time Nair-Reichert and Weinhold (2001) emphasize the importance of accounting for cross-country heterogeneity when examining the FDI–growth relationship. Evidence from Central Africa is similarly mixed. Ngouhouo (2008) highlights the importance of institutional quality in determining the economic effects of FDI, while Ongo Nkoa (2013, 2014) examines the relationship between foreign investment and growth in the Central African Economic and Monetary Community. Sindze *et al.* (2021) report heterogeneous effects across Central African countries, with positive effects on GDP per capita in Cameroon, Chad, the Central African Republic, and Equatorial Guinea, but negative effects in the Republic of Congo and Gabon. Furthermore, Chukwu *et al.* (2022) and Chukwu and Adewuyi (2024) show that the effects of FDI differ according to the sectors

receiving foreign investment. Ekodo *et al.* (2020), in their analysis of CEMAC countries, find a positive but statistically insignificant relationship involving FDI and corruption control. Taken together, these studies indicate that neither the presence of FDI nor the improvement of a single institutional indicator necessarily guarantees higher economic growth.

Despite these contributions, an important empirical gap remains. First, much of the existing evidence focuses on individual countries, the CEMAC subregion, or broader African samples, making it difficult to establish whether the findings apply consistently to all eleven ECCAS member countries. Second, although previous studies recognize the importance of institutions, fewer analyses distinguish systematically between the moderating effects of the rule of law, government effectiveness, political stability and absence of violence, and control of corruption within a common regional framework. These dimensions are related but not interchangeable: an improvement in administrative effectiveness, for example, may affect investment transmission differently from stronger legal enforcement or reduced political instability. Third, the region's heterogeneous economic structures and volatile investment flows raise the possibility that institutional improvements may strengthen the direct contribution of FDI in some contexts but reduce its marginal contribution in others. The unresolved problem is therefore not simply whether FDI promotes economic growth in Central Africa, but which institutional dimensions condition this relationship, in what direction, and with what degree of statistical significance. Addressing this question requires a comparative analysis that explicitly incorporates interaction terms between FDI and separate institutional indicators rather than relying exclusively on the estimated direct effects of investment and governance.

Against this background, this study investigates whether institutional quality conditions the contribution of FDI to economic growth in the eleven ECCAS member countries over the period 2000–2023. Using panel data from the World Development Indicators (WDI) and the Worldwide Governance Indicators (WGI), both provided by the World Bank, the analysis considers real GDP growth as the dependent variable and net FDI inflows as a percentage of GDP as the principal explanatory variable. Gross fixed capital formation, natural resource rents, trade openness, financial development, the labour force, and unemployment are included as control variables. The institutional dimensions examined are the rule of law, government effectiveness, political stability and absence of violence, and control of corruption. Their moderating roles are assessed through separate interaction terms between FDI and each institutional indicator. The empirical analysis employs ordinary least squares (OLS), fixed-effects (FE), random-effects (RE), and generalized least squares (GLS) estimators to examine the relationship under alternative specifications and account for country-level heterogeneity and potential error-structure problems.

The contribution of this study is threefold. First, it provides evidence specifically for the eleven ECCAS member countries over a recent 24-year period, thereby addressing the limited regional coverage of much of the existing literature. Second, it distinguishes four institutional dimensions and evaluates their moderating effects separately, allowing for a more precise assessment of how institutional conditions influence the marginal contribution of FDI to economic growth. Third, by combining institutional interactions with economic and structural control variables, the study seeks to distinguish the direct association between FDI and growth from the conditions under which this association changes. This approach builds on previous research emphasizing the conditional nature of FDI benefits (Borensztein *et al.*, 1998; Durham, 2004; Alfaro *et al.*, 2004; Jude & Levieuge, 2017; Hayat, 2019).

The central research question is therefore: *"Does institutional quality condition the contribution of foreign direct investment to economic growth in the ECCAS?"* More specifically, the study examines whether the rule of law, government effectiveness, political stability, and control of corruption strengthen or weaken the marginal effect of FDI on economic growth. By answering this question, the research aims to provide evidence that can inform policies designed to improve institutional performance, strengthen domestic absorptive capacity, and direct foreign investment towards productive activities capable of generating sustained economic growth across the ECCAS region.

2. LITERATURE REVIEW

2.1. Theories on the Effect of FDI on Economic Growth

Traditional and modern theories emphasize several mechanisms by which FDI can stimulate the economic growth of the host country. In Solow's (1956) neoclassical approach, FDI increases the capital stock and, consequently, the productive capacity of the host economy. Similarly, the models of Harrod (1939) and Domar (1946) consider FDI as a source of external financing that can compensate for insufficient domestic savings. Beyond capital accumulation, the endogenous growth theories of Romer (1986) and Lucas (1988) highlight that FDI can promote technology transfer, knowledge accumulation, human capital development, and improved productivity in the host country. These assertions are also supported by Blomstrom and Kokko (1998), Borensztein *et al.* (1998), Markusen and Venables (1999), and De Mello (1999), who highlight technological externalities, learning effects, links with local firms, and the complementarity of FDI with domestic investment. Similarly, OLI paradigm of Dunning (1977, 1988, 1993) shows that location advantages, including economic openness, infrastructure, natural resources, and factors of production, can enhance the impact of FDI on productive transformation and growth.

However, these positive effects are neither automatic nor uniform; they depend on the economic, financial, human, and especially institutional characteristics of the host country. Borensztein *et al.* (1998) show, in particular, that the technological benefits of FDI are contingent upon a minimum level of human capital, while Alfaro *et al.* (2004) emphasize the importance of financial development in transmitting the effects of FDI to economic growth. From this perspective, the quality of institutions can strengthen absorptive capacity and transform FDI into sustainable productivity gains (Jude & Levieuge, 2017; Hayat, 2019). Conversely, crowding-out and market power theories show that direct investors can compete with or crowd out domestic firms and reduce productivity (Aitken & Harrison, 1999). Dependency theory also highlights the risks associated with foreign domination, profit repatriation, and weak integration of subsidiaries into the local economy (Chase-Dunn, 1975). Finally, enclave effects theory reminds us that when technological absorptive capacity, infrastructure, human capital, and institutions are weak, FDI can generate few positive externalities and produce limited or even adverse effects on growth (Javorcik, 2004). Thus, the theoretical literature leads us to consider the effect of FDI on economic growth as an essentially conditional phenomenon, which justifies our analysis of the moderating role of institutional quality in our case of the ECCAS countries.

2.2. Empirical Review of the Effect of FDI on Economic Growth

The empirical literature on the effect of FDI on economic growth yields heterogeneous results depending on the country, the period, the economic structures, and the absorption capacity of the host economy. Borensztein *et al.* (1998), using a panel of 69 developing countries, show that FDI can promote growth more than domestic investment through technology and knowledge transfers, but that this effect depends on the level of human capital. In the case of Africa, the author Gui-Diby (2014) emphasized a temporal evolution of the effect of FDI on economic growth. According to his study, FDI had a negative effect on economic growth from 1980 to 1994, then positively influenced economic growth from 1995 to 2009. Odhiambo (2022), in a study of 27 sub-Saharan African countries, shows that the positive effect of FDI is more pronounced in low-income countries than in middle-income countries. From a non-linear perspective *et al.* (2022) identify a threshold of approximately $44.67 of FDI per capita beyond which FDI becomes beneficial to growth. These results are consistent with those of Alfaro *et al.* (2024). Durham (2004) and Nair-Reichert and Weinhold (2001) demonstrate that financial development, institutional quality, and structural characteristics play a significant role in converting FDI into economic growth. Balasubramanyam *et al.* (1996), for their part, emphasize the role of trade openness. In a study on Central Africa, Ngouhouo (2008) also highlights the importance of institutional quality in the relationship between FDI and economic growth.

Empirical research on Central Africa confirms the heterogeneity we noted above. Chukwu *et al.* (2022) and Chukwu and Adewuyi (2024) showed that the effects of FDI on economic growth vary depending on the sectors to which FDI is directed. They noted that FDI has a favorable effect on economic growth when directed towards manufacturing and services, and a less favorable effect when directed towards agriculture. Sindze *et al.* (2021) found positive effects of FDI on GDP per capita in Cameroon, Chad, the Central African Republic, and Equatorial Guinea, but negative effects in Congo and Gabon. This result confirms those of Ongo (2013, 2014), illustrating regional heterogeneity. Ekodo *et al.* (2020), using a GMM model applied to the CEMAC region, found a positive but not statistically significant effect of FDI and corruption control. This relationship also extends to productivity: Iheonu *et al.* (2026) show that Chinese FDI significantly improves labor productivity in 22 sub-Saharan African countries, while Emako *et al.* (2022) and Orji *et al.* (2021) also found positive effects on labor productivity. Le *et al.* (2024) confirm a positive relationship between FDI and growth in 90 middle-income countries, highlighting the role of factor productivity. Finally, Idun *et al.* (2024) show that FDI can support growth when directed towards productive sectors such as agriculture, industry, manufacturing, and services. Asongu and Odhiambo (2023) further emphasize the importance of digital technologies in transmitting the effects of FDI to productivity.

However, some research has yielded negative or even insignificant results, challenging the notion of an automatically positive effect of FDI on economic growth. For example *et al.* (2021) found a negative effect of FDI on economic growth in 25 sub-Saharan African countries. Benzaim *et al.* (2023) added to this finding, finding a negative effect of US investment on the economic growth of 61 developing countries. Herzer *et al.* (2008) explain these results by the crowding-out effect on domestic investment, a claim also supported by Magbondé *et al.* (2025), who show that FDI can increase total investment while reducing domestic private investment. Similar results are reported by Ndikumana and Verick (2008) and Johnston and Ramirez (2015). On the other hand, Zakaria (2009), Adedeji and Ahuru (2016), Barugahara and Munyambonera (2024), and Yimer (2023) did not find a statistically significant effect of FDI on growth in their different African samples or in developing countries.

This diversity of results highlights three main gaps, which we will address in this work: first, the limited focus of previous research on the eleven member countries of the ECCAS, countries that exhibit institutional and structural heterogeneity; second, the limited use of approaches that explicitly consider the quality of institutions as a factor likely to modify the impact of FDI on economic growth; and third, this study will simultaneously employ four estimation methods OLS, fixed effects, random effects, and CGM to ensure a robust and effective combination of results.

3. METHODOLOGY

3.1. Presentation of the Theoretical Model

Our analysis is based on the assumption that FDI constitutes an additional source of investment financing for host countries, promoting capital accumulation, facilitating the transfer of technology and knowledge, and potentially contributing to improved economic growth (Borensztein *et al.*, 1998). This assertion is supported by the Solow and Swan (1956) models, which express economic growth through the accumulation of physical capital, an increase in the labor force, and technological progress. Our approach is structured around Cobb-Douglas growth enriched by FDI and institutional quality, then estimated using OLS, fixed effects, random effects, and GMM. We specify the general model as follows:

$$Y_{it} = A_{it}K_{it}^{\alpha}L_{it}^{\beta}IDE_{it}^{\gamma} \quad \dots(4)$$

With Y_{it} the production or level of economic growth of country i in period t, K_{it} the stock of physical capital of country i in period t, L_i the quantity of labor of country i in period t, IDE_{it} the flow of foreign direct investment of country i in period t, and A_{it} the total factor productivity.

This function is subsequently enriched by the introduction of several variables likely to influence an economy's capacity to transform FDI into economic growth. These are primarily gross fixed capital formation (GFCF), natural resources, trade openness, financial development, labor force size, and the unemployment rate. Institutional indicators are added to these economic and structural variables to verify whether the quality of institutions influences the impact of FDI on economic growth. This approach is consistent with the work of Alfaro *et al.* (2004) and Durham (2004), Gui-Diby (2014), Nair-Reichert and Weinhold (2001) and Ngouhouo (2008)... show that the impact of FDES on the economic growth of the host country depends on the latter's absorption capacities, in particular financial development, human capital, infrastructure, and the quality of institutions.

3.2. Specification of the Empirical Model

To make the theoretical model estimable from the data available in our ECCAS context, the production function is transformed into a panel data econometric equation. The basic specification is written as follows:

$$CPIB_{it} = \beta_0 + +\beta_1 IDE_{it} + \beta_2 FBCF_{it} + \beta_3 RESNAT_{it} + \beta_4 OUVC_{it} + \beta_5 DFIN_{it} + \beta_6 POPACT_{it} + \beta_7 CHOM_{it} + \mu_i + \varepsilon_i \dots(5)$$

With IDE_{it} which represents the level of economic growth of country i in period t, DE_{it} which represents the net inward foreign direct investment of country i at time t, $FBCF_{it}$ which captures the degree of domestic investment of country i at time t, $RESNAT_{it}$ which represents the natural resources of country i at time t, $OUVC_{it}$ which represents the trade openness of countries at time t, $DFIN_{it}$. This is an indicator of the financial development of countries at time t, $POPACT_{it}, POPACT_{it}$, which captures the human capital of country i at time t, $CHOM_{it}$ which represents the unemployment rate or macroeconomic equilibrium of country i at time t. Furthermore, ε_{it} represents the error term with $i = 1, 2, ..., 11$ representing the sample size and t = 2000,...,2023 the time horizon; μ_i is the unobserved individual-specific effect, while δ_t represents the unobserved specific time effect. This specification makes it possible to identify the specific effect of FDI on growth while taking into account other economic and structural factors likely to influence GDP.

3.3. Taking Into Account the Quality of Institutions

One distinctive feature of our research is that we are not only seeking to measure the effect of FDI on economic growth, but also to determine whether this effect depends on the quality of institutions. This approach is highly relevant in our ECCAS context, given the institutional heterogeneity observed in this region. To test this hypothesis, we considered institutional variables such as the rule of law (RL), governance effectiveness (GE), political stability and absence of violence (PV), and control of corruption (CC). The model considered will be:

$$CPIB_{it} = \beta_0 + \beta_1 IDE_{it} + \beta_2 INST_{it} + \beta_3 (IDE_{it}\ X\ INST_{it}) + \sum_{j=4}^{k} \beta_j X_{jit} + \mu_i + \varepsilon_i \ \dots(6)$$

With INST, $_{it}$ represents RL, GE, PV, and CC, while X represents the set of control variables. The coefficient ß3 $_{thus}$ allows us to determine whether the quality of institutions modifies the effect of FDI on economic growth. The marginal effect of FDI on growth is given by:

$$\frac{\partial CPIB_{it}}{\partial IDE_{it}} = \beta_1 + \beta_3 INST_{it} ...(7)$$

This formula is very important in our study since it allows us to move beyond the assumption of an automatic and uniform effect of FDI on economic growth.

3.4. Data and Variables

The aim here is to present the nature and source of data on the one hand, and the choice and discussion of variables on the other.

3.5. Nature and Source of Data

To examine the second hypothesis of this research, secondary data from various sources are used. Information was gathered for 11 ECCAS countries over the period 2000 to 2023, taking into account data quality and availability. Information was also drawn from the World Bank's Global Governance Index. In addition, macroeconomic indicators were developed using data from the World Development Indicators (WDI, 2024), also provided by the World Bank.

3.6. Choice and Discussion of Variables

This section briefly presents the dependent variable, the independent variable, and the explanatory control variables used in this study.

3.6.1. The Dependent Variable: Economic Growth

The indicator of economic growth is measured here by the growth rate of real Gross Domestic Product (GDP), calculated based on GDP in constant 2010 dollars. This variable was chosen because it captures the level of real growth, as it is adjusted for price levels. Furthermore, it is the first dimension of the sustainable development indicators and will allow us to assess the economic performance of nations.

3.6.2. The Independent Variable

The explanatory variable of interest in this study is Foreign Direct Investment (FDI) as a percentage of GDP. The corresponding data for its measurement come from World Bank indicators. Regarding Foreign Direct Investment (FDI), the World Bank defines FDI as a net investment flow that allows for the acquisition of at least 10% of the capital of a firm of a different nationality than that of the investor. Most studies show that, with appropriate policies in host countries and a minimum level of development, FDI has technological spin-offs, contributes to human capital development, facilitates integration into international trade, fosters a more competitive environment for businesses, and improves business development and, consequently, economic growth.

3.7. The Control Variables

First, we considered *the quality of institutions* by measuring it according to the rule of law, governance effectiveness, political stability, and control of corruption. Data were obtained from the *Worldwide* Governance Indicators database from the World Bank. Furthermore, data from the World Development Indicators (WDI, 2024) from the World Bank were used for macroeconomic indicators.

Next, financial *development* captured by domestic credit refers to the financial resources provided to the private sector by financial institutions, such as loans, equity purchases, trade credit, and other debits that establish the right to repayment. The recognized advantage of this indicator is that it allows for the separation of credit allocated to the private sector from credit allocated to governments, public enterprises, and the central bank. It is the main indicator of financial development used in the literature because it directly measures the size of financial intermediation. Thus, a significant proportion of private credit in GDP indicates intense activity (financial development) among financial intermediaries.

Moreover, *the unemployment rate* is used to capture macroeconomic imbalances that can arise in an economy, caused, for example, by a decrease in aggregate demand or by labor disputes. The most widely used method for measuring unemployment was developed in the United States in the 1930s and adopted by the International Labour Organization (ILO). It consists of collecting information about the employment status of each working-age person through a survey conducted on a representative sample of the labor force.

The other control variable is *natural resources.* The exploitation of oil, gas, or metallic ores can motivate economic growth. However, a substantial body of literature shows that natural wealth does not automatically guarantee economic growth, especially if institutions are weak. Van der Ploeg (2011) documents that resources can reduce institutional quality (corruption, conflict), which discourages economic growth. Sachs and Warner (1995) identify a relationship where resources, combined with poor institutions, reduce growth.

Gross fixed capital formation (GFCF) is used to capture the level of domestic investment. Authors such as Hwang (2008), Samir & Hammam (2016), Donaubauer *et al.* (2014), Glickman and Woodward (1988), Kumar (2006), Seetanah and Khadaroo (2009), Ibrahim *et al.* (2019), Justice and Nouhoum (2023), show that transport infrastructure, telecommunications infrastructure, information and energy infrastructure, technologies (ICT), access to electricity and road connectivity, access to broadband Internet, and the length of paved roads per square kilometer (TRANS) significantly enhance the attractiveness of foreign direct investment (FDI) and facilitate its impact on economic growth by substantially reducing transaction costs.

Regarding Trade *openness, it* has been measured in various ways in the literature. Among these measures, the degree of openness is the most widely used classic indicator. It measures the external level of constraint and is obtained by dividing the value of foreign trade by the gross domestic product. Mathematically, the degree of openness (also called the openness ratio) is equal to the sum of imports and exports divided by the gross domestic product. Furthermore, the Van der Ploeg (2011) openness index is also widely used as an indicator of international trade. Moreover, according to Ekodo *et al.* (2020), openness to the international economy is the best way to encourage growth in developing countries. Many developing countries are small; therefore, inward-looking economic strategies can suffer in the short term from weak demand.

Finally, regarding *human capital*, Becker (1964) defines it as "*the sum of productive capacities that an individual acquires through the accumulation of general or specific knowledge, skills, etc.*" Each worker possesses their own "capital," comprised of their personal qualities and training. Like any asset or wealth, this capital is a stock that can generate resources, deplete, or grow if it is invested. For this variable, we have captured it by the active population.

Table 1. Sign Chart of the Effect of FDI on Economic Growth.

Variable	**Symbol**	**Measurement/Definition**	**Expected signs**
Economic growth	CPIB	Real GDP growth rate	Dependent variable
Foreign Direct Investment	IDE	Net FDI inflows as a percentage of GDP	+
Gross fixed capital formation	FBCF	Gross fixed capital formation (GFCF) as a percentage of GDP	+
Natural resource	RESNAT	Natural resource rent as a percentage of GDP	+/-
Commercial opening	OPEN	Total Imports and Exports as a Percentage of GDP	+
Financial development	FIN	Credit to the private sector as a percentage of GDP	+
Labor force	POPACT	Labor force	+
Unemployment	CHOM	Unemployment rate	-
Rule of law	RL	Institutional quality indicator	+
Governance effectiveness	GE	Indicator of public action	+
Political stability	PV	Political stability and absence of violence	+
Control of corruption	CC	Corruption control indicator	-

The choice of these variables stems from the theoretical framework developed in this work. In particular, gross fixed capital formation represents the accumulation of physical capital, natural resources reflect the extractive specialization of several ECCAS economies, while trade openness and financial development represent factors likely to facilitate or limit the effects of FDI. Financial development constitutes an important dimension of the absorptive capacity of host economies.

4. RESULTS AND DISCUSSION

Assessing the impact of Foreign Direct Investment (FDI) on Gross Domestic Product Growth (GDPG) is a central issue in development macroeconomics. Contemporary literature repeatedly emphasizes that the effectiveness of foreign capital flows depends fundamentally on the absorption capacity of the host country, as reflected in the quality of its institutional framework and governance.

To rigorously test this hypothesis of institutional conditionality, this section presents the empirical results of sixteen (16) econometric specifications. The moderating effect of governance is captured through four fundamental World Bank indicators: the rule of law (RL), governance effectiveness (GE), political stability and absence of violence (PV), and control of corruption (CC).

To protect the analysis against specification bias and capture the longitudinal structure of the panel data, four econometric estimation methods are applied to each indicator. The first is Ordinary Least Squares (OLS), used as the reference model. The second is based on fixed effects (FE), which allow for controlling for unobserved heterogeneity that is constant over time and specific to individuals. The third method corresponds to Random Effects (RA/RE – Random). Effects), which model individual effects as a stochastic component of the error. Finally, the fourth method is Generalized Least Squares (GLS), which corrects for potential problems of heteroscedasticity and residual cross-correlation.

Thus, the set of estimated specifications allows us to examine the robustness of the moderating effect of governance on the relationship between foreign direct investment and gross domestic product growth, while taking into account other factors that may influence this relationship.

Table 2. Effect of Foreign Direct Investment on Economic Growth in the ECCAS.

Variables	Rule of law (RL)				Governance effectiveness (GE)				Political stability (pv)				Corruption control (cc)			
	MCO	FE	D	MCG	MCO	FE	D	MCG	MCO	FE	D	MCG	MCO	FE	D	MCG
IDE	0.980	0.351	0.980	1,570***	0.786*	0.166	0.786*	1.022***	0.981***	0.648*	0.981***	0.981***	-0.0604	-0.0843	-0.0604	-0.0170
	(0.743)	(0.734)	(0.743)	(0.560)	(0.422)	(0.405)	(0.422)	(0.324)	(0.342)	(0.342)	(0.342)	(0.308)	(0.430)	(0.425)	(0.430)	(0.347)
Governance	0.410***	0.240	0.410***	0.382***	0.215***	-0.00682	0.215***	0.235***	0.105*	0.0385	0.105*	0.0620	0.223***	-0.108	0.223***	0.166***
	(0.107)	(0.156)	(0.107)	(0.0841)	(0.0756)	(0.120)	(0.0756)	(0.0574)	(0.0546)	(0.0817)	(0.0546)	(0.0468)	(0.0766)	(0.130)	(0.0766)	(0.0576)
IDE* Gov	-0.0260	-0.00910	-0.0260	-0.0423***	-0.0251*	-0.00494	-0.0251*	-0.0327***	-0.0196***	-0.0127*	-0.0196***	-0.0197***	0.00487	0.00450	0.00487	0.00279
	(0.0206)	(0.0204)	(0.0206)	(0.0157)	(0.0137)	(0.0131)	(0.0137)	(0.0107)	(0.00673)	(0.00669)	(0.00673)	(0.00603)	(0.0200)	(0.0200)	(0.0200)	(0.0157)
RESNAT	0.255***	0.265***	0.255***	0.173***	0.235***	0.258***	0.235***	0.134**	0.178**	0.293***	0.178**	0.0804	0.274***	0.252***	0.274***	0.190***
	(0.0707)	(0.0787)	(0.0707)	(0.0593)	(0.0762)	(0.0815)	(0.0762)	(0.0597)	(0.0692)	(0.0810)	(0.0692)	(0.0576)	(0.0728)	(0.0792)	(0.0728)	(0.0603)
FBCF	0.158**	0.140**	0.158**	0.131**	0.173***	0.146**	0.173***	0.132**	0.185***	0.159**	0.185***	0.157**	0.168***	0.147**	0.168***	0.133**
	(0.0643)	(0.0641)	(0.0643)	(0.0593)	(0.0650)	(0.0643)	(0.0650)	(0.0600)	(0.0649)	(0.0650)	(0.0649)	(0.0619)	(0.0637)	(0.0639)	(0.0637)	(0.0599)
CHOM	-0.253*	0.931	-0.253*	-0.168*	-0.0513	0.865	-0.0513	-0.0217	0.0207	0.859	0.0207	0.00738	-0.229*	0.824	-0.229*	-0.205**
	(0.130)	(0.633)	(0.130)	(0.0959)	(0.120)	(0.639)	(0.120)	(0.0830)	(0.116)	(0.629)	(0.116)	(0.0925)	(0.126)	(0.643)	(0.126)	(0.103)
OPEN	-0.0981***	0.0168	-0.0981***	-0.0800***	-0.121***	0.0257	-0.121***	-0.0827***	-0.114***	0.00597	-0.114***	-0.0698**	-0.0932***	0.0378	-0.0932***	-0.0738**
	(0.0356)	(0.0440)	(0.0356)	(0.0304)	(0.0367)	(0.0456)	(0.0367)	(0.0315)	(0.0368)	(0.0451)	(0.0368)	(0.0323)	(0.0356)	(0.0458)	(0.0356)	(0.0312)
FIN	-0.160*	-0.352***	-0.160*	-0.150**	-0.243***	-0.331***	-0.243***	-0.223***	-0.282***	-0.327***	-0.282***	-0.194***	-0.167*	-0.350***	-0.167*	-0.128
	(0.0959)	(0.110)	(0.0959)	(0.0713)	(0.0933)	(0.120)	(0.0933)	(0.0731)	(0.0922)	(0.110)	(0.0922)	(0.0743)	(0.0954)	(0.109)	(0.0954)	(0.0791)
POPACT	2.12e-06	-2.83e-06	2.12e-06	1.13e-06	3.06e-07	-2.27e-06	3.06e-07	5.77e-07	-3.18e-07	-1.50e-06	-3.18e-07	-1.11e-06	1.77e-06	-1.87e-06	1.77e-06	4.08e-07
	(2.38e-06)	(4.31e-06)	(2.38e-06)	(1.51e-06)	(2.36e-06)	(4.35e-06)	(2.36e-06)	(1.44e-06)	(2.47e-06)	(4.30e-06)	(2.47e-06)	(1.79e-06)	(2.34e-06)	(4.41e-06)	(2.34e-06)	(1.57e-06)
Constant	-15.66***	-17.26*	-15.66***	-12.80***	-7.349**	-7,980	-7.349**	-5,330*	-4.893	-11.31	-4.893	-0.920	-7.297**	-4.604	-7.297**	-3.444
	(4.918)	(9.415)	(4.918)	(4.017)	(3.718)	(8.334)	(3.718)	(2.941)	(3.798)	(8.043)	(3.798)	(3.414)	(3.395)	(8,248)	(3.395)	(2.749)
Observations	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169
R-squared	0.229	0.298	0.5672		0.193	0.287	0.5794		0.196	0.303	0.477		0.228	0.290	0.6381	
F/Wald	5.24	7.11	47.17	44.69	4.23	6.76	38.05	40.85	4.31	7.29	38.8	35.24	5.22	6.85	46.97	39.58
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*

The overall assessment of the impact of foreign direct investment on economic growth through different governance indicators highlights an empirical regularity: the effect of foreign capital depends on the institutional pillar considered.

On the one hand, the results confirm that the direct effect of foreign direct investment is fundamentally positive and statistically significant for growth when moderated by political stability, effective governance, and the rule of law. Foreign capital thus constitutes a major driver of economic catch-up and technology transfer in recipient countries. On the other hand, when the model considers corruption control, the direct effect of foreign direct investment loses its significance, suggesting that the impact of FDI is not uniformly expressed across all institutional dimensions.

On the other hand, the analysis of interaction terms sheds light on the institutional conditionality hypothesis. For political stability, governance effectiveness, and the rule of law, the interaction coefficients are negative when they are significant. This result demonstrates a non-linear interaction effect or macroeconomic substitutability: the marginal contribution of foreign capital to economic growth is particularly high when local institutions are weak or fragile, because foreign firms substitute their own technology and corporate governance for the deficient local framework. As national institutions strengthen and improve, the domestic private sector becomes more autonomous and efficient, thus reducing the dominant role of foreign investment as the sole driver of GDP growth.

4.1. Rule of Law (RL)

Analysis of the individual significance of the coefficients under the rule of law indicator reveals that control variables such as gross fixed capital formation and national resources are statistically significant at the 1% or 5% level in all methods. In contrast, the labor force remains non-significant in all specifications ($p = 0,373$ under OLS). For foreign direct investment, the coefficient is statistically non-significant under OLS $p = 0,186$, Fixed Effects $p = 0,632$ and Random Effects $p = 0,186$, becomes highly significant at the 1% level under Generalized Least Squares $p = 0,005$. The rule of law has a significant coefficient at the 1% level under OLS $p = 0,0001$, RE $p = 0,0001$, and CGM $p < 0,0001$, but is not significant under Fixed Effects $p = 0,124$. The interaction between FDI and the rule of law is not statistically significant under OLS ($p = 0,207$), FE ($p = 0,656$) and RE ($p = 0,207$), but is found to be negative and significantly different from zero at the 1% level under the Generalized Least Squares method ($p = 0,007$).

The direct effect of foreign direct investment on economic growth is positive ($\hat{\beta}$ = 1,570, = 1,570, p = 0,005 under CGM). At the macroeconomic level, this positive relationship reflects the fundamental role of foreign capital inflows as a driver of physical capital accumulation, technological accumulation, and the transfer of managerial skills. In accordance with endogenous growth theories, foreign direct investment flows stimulate total factor productivity in the host country through the modernization of production facilities, the creation of skilled jobs, and the integration of local firms into global value chains.

The rule of law has a positive effect on economic growth ($\hat{\beta}$ = 0,382, p<0,0001 under CGM; $\hat{\beta}$ = 0,410, p=0,0001 under OLS and RE). This result is economically explained by the fact that a transparent, fair, and predictable regulatory framework reduces market frictions, lowers transaction costs, and limits the risk of expropriation for private economic actors. Clear rules encourage free competition, protect property rights, and incentivize productive long-term investment.

The interaction effect between foreign direct investment and the rule of law shows a significant negative coefficient under the Generalized Least Squares estimator $\hat{\beta}$ = - 0,0423), p = 0,007. From a macroeconomic perspective, this negative sign suggests an institutional substitutability or saturation effect. When the domestic rule of law improves significantly, a country's dependence on foreign capital to structure its market decreases, as the domestic private sector gains competitiveness and investment capacity. Moreover, extremely strict or restrictive regulations can impose high compliance standards and administrative adaptation costs on foreign multinationals, thereby reducing the immediate marginal return on their investments in terms of GDP growth.

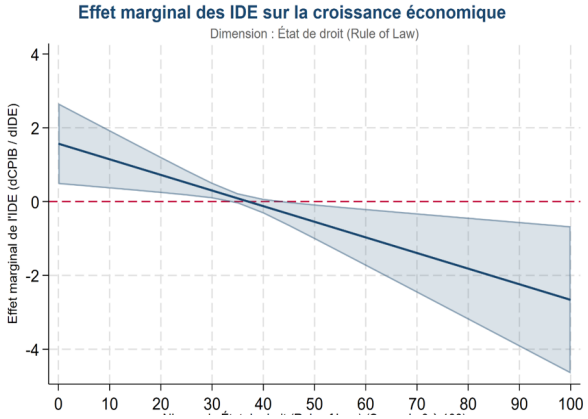


Figure 1. Marginal Effect of FDI on Economic Growth: Level of the Rule of Law.

Regarding the other control variables, gross fixed capital formation positively stimulates growth across all specifications ($\hat{\beta}$ = 0,131, p = 0, 027 under CGM; $\hat{\beta}$ = 0,158, p = 0, 014 under OLS/RE), which is consistent with the neoclassical model of physical capital accumulation. Domestic resources also exert a significant positive influence ($\hat{\beta}$ = 0,173, p = 0, 003 under CGM; $\hat{\beta}$ = 0,255, p = 0, 0003 under OLS/RE), indicating that natural resource rents finance public infrastructure investment and support aggregate demand. Conversely, financial development shows a significant negative coefficient ($\hat{\beta}$ = −0,150, p = 0, 035 under CGM; $\hat{\beta}$ =−0,352, p = 0, 001 under FE). This result is explained in development macroeconomics by the syndrome of financial overexpansion not accompanied by a strengthening of real intermediation, leading to a misallocation of bank credit towards consumption or unproductive speculative bubbles. Trade openness also has a significant negative effect ($\hat{\beta}$ = −0,080, p = 0, 008 under CGM), reflecting the vulnerability of economies to external shocks, deteriorations in the terms of trade, and the crowding out of nascent local industries by imports. Finally, the unemployment rate has a negative effect at a marginal threshold of 10% ($\hat{\beta}$ = −0,168, p = 0, 080 under CGM), which illustrates Okun's law that underutilization of human resources restricts the potential output of the economy.

4.2. Governance Effectiveness (GE)

The evaluation of estimates including governance effectiveness indicates that the significant variables are foreign direct investment (under OLS, RE, and CGM), governance effectiveness itself (under OLS, RE, and CGM), the interaction term (under OLS, RE, and CGM), as well as domestic resources, gross fixed capital formation, trade openness, and financial development. The non-significant variables are the labor force (p = 0, 897 under OLS) and the unemployment rate (p = 0, 669 under OLS). Under the Fixed Effects method, neither foreign direct investment (p = 0, 682), nor governance effectiveness (p = 0, 955), nor their interaction (p = 0, 706) are statistically significant.

Foreign direct investment has a significant and positive direct effect on economic growth under OLS ($\hat{\beta}$ = 0,786, p = 0, 063), Random Effects ($\hat{\beta}$ = 0,786, p = 0, 063), and Generalized Least Squares ($\hat{\beta}$ = 1,022, p = 0, 002). At the macroeconomic level, this result confirms that the injection of foreign capital closes the domestic savings gap and provides foreign currency to enable the import of high-tech capital goods, thereby stimulating the national production function.

Effective governance has a positive and highly significant impact on the expansion of gross domestic product (GDP) $\hat{\beta}$ = 0,235 (p < 0, 0001 under CGM; $\hat{\beta}$ = 0,215 under p = 0, 005 OLS and RE). This mechanism is explained by improvements in the quality of public services, efficiency in the execution of public spending, and the administration's capacity to design and implement coherent public policies. A high-performing bureaucracy reduces administrative bottlenecks, improves basic infrastructure, and ensures a business environment conducive to profitable investments.

The cross-term measuring the interaction between foreign direct investment and governance effectiveness has a negative and statistically significant coefficient ($\hat{\beta}$ = −0,0327, p = 0, 002 under CGM; $\hat{\beta}$ = −0,0251, p = 0, 067 under OLS and RE). From an economic perspective, this negative interaction relationship can be interpreted as a crowding-out effect or a limited catch-up phenomenon. When the state becomes highly efficient in its management and the provision of public services, the relative marginal profitability of foreign capital decreases compared to domestic investment. Furthermore, a highly efficient public administration implements rigorous fiscal and environmental monitoring of multinational activities, which can curb the rapid and opportunistic exploitation of resources, thus moderating the rate of short-term accumulation induced by foreign capital flows.

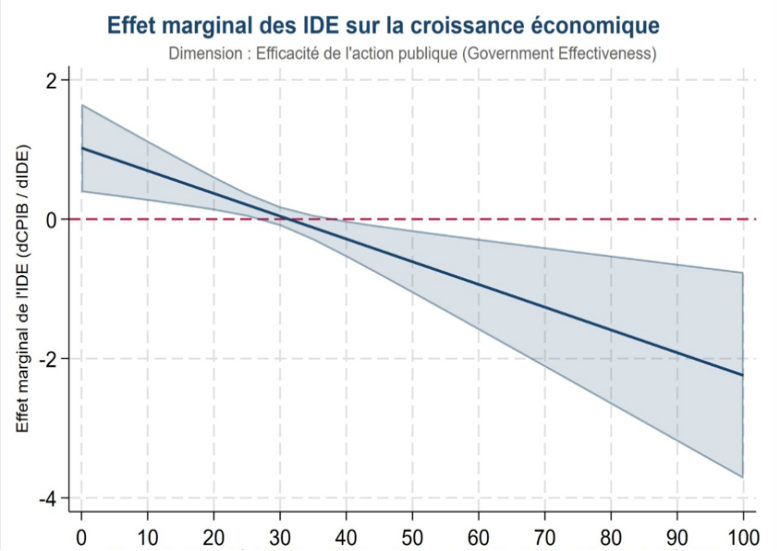


Figure 2. Marginal Effect of FDI on Economic Growth: Level of Effectiveness of Public Action.

Among the control variables, gross fixed capital formation confirms its significant positive impact ($\hat{\beta}$ = 0,132, p = 0, 028 under CGM; $\hat{\beta}$ = 0,173, p = 0, 008 under OLS/RE), supporting the role of domestic capital accumulation in long-term growth dynamics. Domestic resources also support growth ($\hat{\beta}$ = 0,134, p = 0, 025 under CGM; $\hat{\beta}$ = 0,235, p = 0, 002 under OLS/RE), confirming the multiplier effect of natural rents on overall economic activity. Financial development retains a negative and highly significant coefficient ($\hat{\beta}$ = −0,223, p = 0, 002 under CGM; $\hat{\beta}$ = −0,331, p = 0, 006 under FE), reflecting the fragility of local financial systems often characterized by information asymmetry, very high lending interest rates, and exclusion of financing for productive small and medium-sized enterprises. Trade openness weighs negatively on growth ($\hat{\beta}$ = −0,0827, p = 0, 009 under CGM; $\hat{\beta}$ = −0,121, p = 0, 001 under OLS/RE), reflecting the fact that premature trade integration without a diversified productive base exposes the economy to recurring current account deficits and destructive competition from imported goods.

4.3. Political Stability and Absence of Violence (PV)

Analysis of the political stability specification reveals a set of statistically significant variables: foreign direct investment is significant in all four estimators, political stability is significant under OLS and RE, the interaction term is significant under all four methods, while national resources, gross fixed capital formation, trade openness, and financial development show significant coefficients. Non-significant variables include the unemployment rate (p = 0, 858 under OLS) and the labor force (under OLS), as well as political stability under the FE (p = 0, 898) and CGM;) p = 0, 185 methods p = 0, 638.

Foreign direct investment has a strong, st atistically significant, and posiive direct effect on the economy's growth rate across all four estimation methods ($\hat{\beta}$ = =0,981 CGM p = 0, 001; OLS $\hat{\beta}$ = =0,981 and p = 0, 004, RE $\hat{\beta}$ = 0,648 and p = 0, 058 FE). This consistent result demonstrates that foreign capital inflows are a powerful driver of economic development, facilitating the transfer of advanced technologies and the modernization of infrastructure.

Political stability and the absence of violence have a direct positive influence on economic growth, significantly established under Ordinary Least Squares ($\hat{\beta}$ = 0,105, p = 0, 055) and Random Effects ($\hat{\beta}$ = 0,105, p = 0, 055). At the macroeconomic level, civil peace and the absence of armed conflict or governmental instability reduce the country risk premium, protect physical infrastructure from destruction, and create the time visibility essential for planning large-scale corporate investments.

The moderating effect of political stability on the relationship between foreign direct investment and growth is reflected in a negative and highly significant interaction coefficient across all four estimation methods ($\hat{\beta}$ = −0,0197, p = 0, 001 under CGM; $\hat{\beta}$ = −0,0196, p = 0, 004 under OLS and RE; $\hat{\beta}$ = −0,0127, p = 0, 058 under FE). This theoretically crucial result highlights the paradox of "enclave investment," or the behavior of multinational corporations under uncertainty. In unstable or conflictual political environments, foreign investors demand extremely high rates of return and concentrate in highly capital-intensive extractive sectors with high immediate returns, generating strong but uneven growth. Conversely, when a country becomes politically stable, foreign investment flows shift toward more conventional service or manufacturing sectors where direct profit margins are more moderate and competition from domestic private investment increases, thus mitigating the relative marginal effect of FDI on the aggregate growth rate.

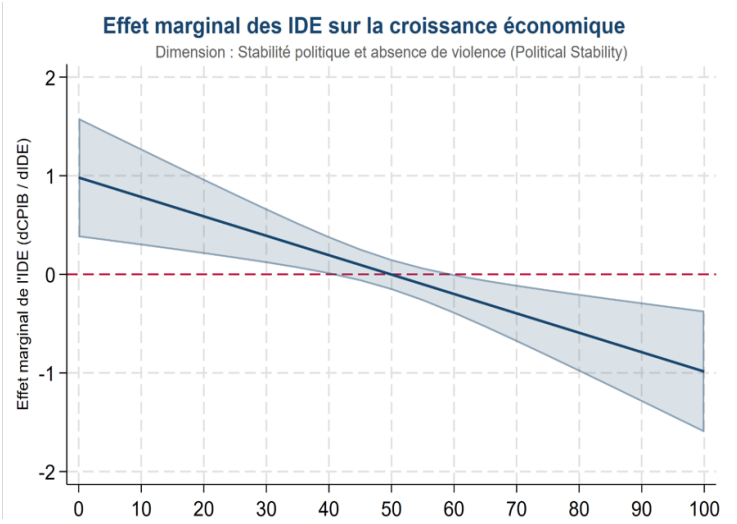


Figure 3. Marginal Effect of FDI on Economic Growth: Political Stability and Absence of Violence.

Regarding the other determinants of growth, gross fixed capital formation significantly supports economic expansion ($\hat{\beta}$ = 0,157, p = 0, 011 under CGM; $\hat{\beta}$ = 0,185, p = 0, 004 under OLS/RE; $\hat{\beta}$ = 0,159, p = 0, 015 under FE). Domestic resources also contribute positively ($\hat{\beta}$ = 0,178, p = 0, 010 under OLS/RE; $\hat{\beta}$ = 0,293, p < 0, 0001 under FE), reinforcing the hypothesis of the positive impact of natural rent on fixed capital financing. Financial development shows a consistently negative and significant coefficient ($\hat{\beta}$ = −0,194, p = 0, 009 under CGM; $\hat{\beta}$ = −0,282, p = 0, 002 under OLS/RE; $\hat{\beta}$ = −0,327, p = 0, 003 under FE), illustrating that the quantitative development of credit without adequate prudential oversight diverts financial resources away from high-productivity projects. Trade openness negatively affects GDP ($\hat{\beta}$ = −0,0698, p = 0, 031 under CGM; $\hat{\beta}$ = −0,114, p = 0, 002 under OLS/RE), reflecting increased exposure to global price volatility and a deteriorating external trade balance.

4.4. Corruption Control (CC)

Empirical analysis of the model based on corruption control shows that corruption control itself (under OLS, RE, and CGM), domestic resources, gross fixed capital formation, unemployment, trade openness, and financial development are statistically significant. In contrast, foreign direct investment (p = 0, 888 under OLS; p = 0, 961 under CGM), the interaction term between FDI and corruption control (p = 0, 807 under OLS; p = 0, 859 under CGM), and the labor force (p = 0, 449 under OLS) are not significant in any of the four econometric specifications.

The direct effect of foreign direct investment on economic growth is statistically insignificant when controlled for corruption ($\hat{\beta}$ = −0, 0170, p = 0, 961 under CGM; $\hat{\beta}$ = −0, 0604, p = 0, 888 under OLS and RE). This result suggests that, in the presence of integrity or corruption dynamics, the mere quantity of foreign capital flows received is insufficient to generate autonomous growth dynamics if these flows are not accompanied by structural transformations in the local productive fabric.

Controlling corruption has a direct, positive, and highly significant influence on economic growth ($\hat{\beta}$ = 0, 166see p = 0, 004CGM; $\hat{\beta}$ = 0, 223; see p = 0, 004 OLS and RE). In economic theory, combating corruption eliminates a form of illegal and arbitrary taxation that burdens businesses. Reducing rent-seeking behavior reallocates capital and talent within the economy toward genuinely productive activities rather than predatory ones. Furthermore, a corruption-free environment ensures transparency in public procurement and the quality of infrastructure investments.

The interaction term between foreign direct investment and corruption control is statistically insignificant across all estimators (e.g. $\hat{\beta}$ = 0, 00279, p = 0, 859 under CGM; e.g. $\hat{\beta}$ = 0, 00487, p = 0, 807 under OLS and RE). Macroeconomically, the lack of significance indicates that there is no measurable cross-conditionality effect between corruption control and FDI flows on growth within this sample. Corruption control acts as an intrinsic and autonomous institutional determinant of GDP, without marginally altering the direct efficiency of foreign capital.

Regarding the control variables, gross fixed capital formation retains a crucial positive role in wealth creation ($\hat{\beta}$ = 0, 133, p = 0, 026under CGM; $\hat{\beta}$ = 0,168, p = 0, 009under OLS/RE). Similarly, domestic resources exert a significant stimulatory effect at 1% ($\hat{\beta}$ = 0, 190, p = 0, 002 under CGM; $\hat{\beta}$ = 0, 274, p = 0, 0002 under OLS/RE). The unemployment rate has a significant negative effect on the level of activity ($\hat{\beta}$ = −0, 205, p = 0, 046 under CGM ; $\hat{\beta}$ = −0, 229, p = 0, 069 under OLS/RE), reflecting the production shortfall linked to labor underemployment. Trade openness negatively affects

growth ($\hat{\beta} = -0,0738$, $p = 0,018$ under CGM; $\hat{\beta} = -0,0932$, $p = 0,009$ under OLS/RE), highlighting macroeconomic vulnerability to external competitiveness shocks. Finally, financial development maintains a significant negative coefficient under OLS and RE ($\hat{\beta} = -0,167$, $p = 0,080$) and under Fixed Effects ($\hat{\beta} = -0,350$, $p = 0,001$), illustrating once again the inefficiency of the financial sector in financing the real economy.

5. CONCLUSION

This study examined whether institutional quality conditions the contribution of foreign direct investment (FDI) to economic growth in the eleven member countries of the Economic Community of Central African States (ECCAS) over the period 2000–2023. Using panel data and four estimation methods—ordinary least squares (OLS), fixed effects (FE), random effects (RE), and generalized least squares (GLS)—the analysis assessed the moderating roles of the rule of law, government effectiveness, political stability and absence of violence, and control of corruption.

- *The findings provide a qualified answer to the research question:* Institutional quality conditions the relationship between FDI and economic growth, but the evidence differs across institutional *dimensions*. In the preferred GLS specifications, the interaction between FDI and the rule of law is negative and statistically significant ($\hat{\beta} = -0.0423$, $p < 0.01$), as is the interaction between FDI and government effectiveness ($\hat{\beta} = -0.0327$, $p < 0.01$). The interaction between FDI and political stability is also negative and statistically significant ($\hat{\beta} = -0.0197$, $p < 0.01$). These findings indicate that the marginal association between FDI and economic growth decreases as these institutional indicators improve, conditional on the other variables included in the models. However, this negative moderation should not be interpreted as evidence that stronger institutions reduce economic growth or that institutional weaknesses are desirable. Rather, it suggests that the marginal contribution of FDI varies with institutional conditions and that the mechanisms underlying this relationship require further investigation.

By contrast, the interaction between FDI and control of corruption is positive but statistically insignificant in the GLS specification ($\hat{\beta} = 0.00279$, $p = 0.859$). Consequently, the analysis does not provide evidence that corruption control significantly moderates the relationship between FDI and economic growth in the sample. Nevertheless, corruption control itself has a positive and statistically significant coefficient ($\hat{\beta} = 0.166$, $p < 0.01$), suggesting that it may contribute directly to economic growth, independently of any measurable interaction with FDI. It is therefore essential to distinguish the direct contribution of an institutional indicator from its moderating role.

The results also show that the direct coefficient of FDI is positive and statistically significant in the GLS specifications incorporating the rule of law ($\hat{\beta} = 1.570$, $p < 0.01$), government effectiveness ($\hat{\beta} = 1.022$, $p < 0.01$), and political stability ($\hat{\beta} = 0.981$, $p < 0.01$). However, this direct coefficient is not statistically significant in the specification incorporating control for corruption ($\hat{\beta} = -0.0170$, $p = 0.961$). These findings reinforce the conclusion that the growth contribution of FDI is not uniform across institutional specifications. Furthermore, the positive and statistically significant coefficients associated with gross fixed capital formation and natural resource rents in most specifications highlight the importance of domestic investment and the economic structure of ECCAS countries. Conversely, trade openness and financial development generally exhibit negative coefficients, indicating that their contribution to growth may depend on the quality of productive integration and the efficiency of domestic financial intermediation.

The study contributes to the literature by examining four institutional dimensions separately within a common panel framework covering all eleven ECCAS member countries. Nevertheless, the findings should be interpreted in light of the differences between estimators and the limitations of the empirical design. Although GLS provides statistically significant interaction estimates for three institutional dimensions, the corresponding results are not equally robust across all estimation methods. In particular, the interactions involving the rule of law and government effectiveness are not statistically significant under fixed effects, whereas the interaction involving political stability remains significant across the four reported specifications, although its significance under fixed effects is weaker ($p < 0.10$). Moreover, the reported estimates establish conditional associations rather than definitive causal effects. Accordingly, the negative interaction coefficients should not be interpreted as proof of institutional substitutability without further testing of marginal effects and alternative specifications.

From a policy perspective, ECCAS countries should continue to strengthen the rule of law, improve public administration, promote political stability, and reinforce anti-corruption institutions. The absence of a significant interaction for corruption control does not diminish the importance of fighting corruption; it simply indicates that this study does not establish a statistically significant moderating effect for that dimension. Policymakers should also promote productive domestic investment, improve infrastructure and human capital, strengthen financial intermediation, and encourage FDI into sectors capable of generating local employment, technological spillovers, and value addition. Future research could investigate sector-specific investment flows, country-level institutional differences, nonlinear relationships, and alternative estimators designed to address potential endogeneity. Such extensions would help determine more precisely under which conditions FDI contributes to sustainable and inclusive economic growth in the ECCAS region.

REFERENCES

Adedeji, D. G., & Ahuru, R. R. (2016). Foreign direct investment and economic growth in developing countries: Panel estimation for Sub-Saharan African countries. *International Journal of Development and Management Review, 11*, 39–50.

Aitken, B. J., & Harrison, A. E. (1999). Do domestic firms benefit from direct foreign investment? Evidence from Venezuela. *American Economic Review, 89*(3), 605–618. https://doi.org/10.1257/aer.89.3.605

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: The role of local financial markets. *Journal of International Economics, 64*(1), 89–112. https://doi.org/10.1016/S0022-1996(03)00081-3

Alfaro, L., Bahaj, S. A., Czech, R., Hazell, J., & Neamtu, I. (2024). *Lash risk and interest rates* (No. w33241). National Bureau of Economic Research.

Asafo-Agyei, G., & Kodongo, O. (2022). Foreign direct investment and economic growth in Sub-Saharan Africa: A nonlinear analysis. *Economic Systems, 46*(4). https://doi.org/10.1016/j.ecosys.2022.101003

Asongu, S. A., & Odhiambo, N. M. (2023). Foreign direct investment, information technology, and total factor productivity dynamics in Saharan Africa. *World Affairs, 186*(2), 469–506.

Balasubramanyam, V. N., Salisu, M., & Sapsford, D. (1996). Foreign direct investment and growth in EP and IS countries. *The Economic Journal, 106*(434), 92–105. https://doi.org/10.2307/2234933

Barugahara, F., & Munyambonera, E. (2024). Economic growth and foreign direct investment in Africa: The mediating role of state fragility and natural resources. *Kabale University Interdisciplinary Research Journal, 2*(3), 4–18.

Becker, G. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.

Benzaim, S., Ftiti, Z., Khedhaouria, A., & Djermane, R. (2023). US foreign investments: Technology transfer, relative backwardness, and the productivity growth of host countries. *The Quarterly Review of Economics and Finance, 87*, 275–295. https://doi.org/10.1016/j.qref.2021.03.012

Blomström, M., & Kokko, A. (1998). Multinational corporations and spillovers. *Journal of Economic surveys, 12*(3), 247-277.

Borensztein, E., De Gregorio, J., & Lee, J.-W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics, 45*(1), 115–135. https://doi.org/10.1016/S0022-1996(97)00033-0

Chase-Dunn, C. (1975). The effects of international economic dependence on development and inequality: A cross-national study. *American Sociological Review, 40*(6), 720–738. https://doi.org/10.2307/2094176

Chukwu, C. L., Aroh, P. N., Ozor, T. O., Ugwoezuonu, A. U., & Ezema, L. C. (2022). Influence of social media usage on time management of social science education students in Nigerian Tertiary Institutions. *Webology, 19*(3), 1077-1095.

Chukwu, A. B., & Adewuyi, A. O. (2024). Foreign direct investment, sectoral output performance and poverty in Africa: Evidence from panel structural vector autoregressive and threshold regression models. *International Journal of Finance & Economics, 29*(3), 2665–2698. https://doi.org/10.1002/ijfe.2799

Daude, C., & Stein, E. (2007). The quality of institutions and foreign direct investment. *Economics & Politics, 19*(3), 317–344. https://doi.org/10.1111/j.1468-0343.2007.00318.x

De Mello, L. R. (1999). Foreign direct investment-led growth: Evidence from time series and panel data. *Oxford Economic Papers, 51*(1), 133–151.

Domar, E. D. (1946). Capital expansion, rate of growth, and employment. *Econometrica, 14*(2), 137–147. https://doi.org/10.2307/1905364

Donaubauer, J., Meyer, B., & Nunnenkamp, P. (2014). *The crucial role of infrastructure in attracting FDI*. Référence à compléter : source de publication à vérifier.

Dunning, J. H. (1977). Trade, location of economic activity and the MNE: A search for an eclectic approach. In B. Ohlin, P.-O. Hesselborn, & P. M. Wijkman (Eds.), *The international allocation of economic activity* (pp. 395–418).

Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies, 19*(1), 1–31. https://doi.org/10.1057/palgrave.jibs.8490372

Dunning, J. H. (1993). *Multinational enterprises and the global economy*. Addison-Wesley.

Durham, J. B. (2004). Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth. *European Economic Review, 48*(2), 285–306. https://doi.org/10.1016/S0014-2921(02)00264-7

Ekodo, R., Ndam, M., & Ousmanou, K. (2020). Investissement direct étranger et croissance en zone CEMAC: Le rôle du capital humain [Foreign Direct Investment and Growth in the CEMAC Zone: The Role of Human Capital]. *Revue Marocaine d'économie, 3*, 1-18.

Emako, E., Nuru, S., & Menza, M. (2022). The effect of foreign direct investment on economic growth in developing countries. *Transnational Corporations Review, 14*(4), 382-401.

Glickman, N., & Woodward, D. (1988). The location of foreign direct investment in the United States: Patterns and determinants. *International Regional Science Review, 11*(2), 137–154. https://doi.org/10.1177/016001768801100203

Gui-Diby, S. L. (2014). Impact of foreign direct investments on economic growth in Africa: Evidence from three decades of panel data analyses. *Research in Economics, 68*(3), 248–256. https://doi.org/10.1016/j.rie.2014.04.003

Harrod, R. F. (1939). An essay in dynamic theory. *The Economic Journal, 49*(193), 14–33. https://doi.org/10.2307/2225181

Hayat, A. I. (2019). *Foreign Direct Investment and Economic Growth in Sub-Saharan Africa*. Munich Personal RePEc Archive.

Hwang, K.-S. (2008). Institutional reform and locational advantages of new EU member Central and Eastern European countries for foreign direct investment. *International Review of Public Administration, 13*(1), 97–116. https://doi.org/10.1080/12294659.2008.10805115

Ibrahim, M., Osman, I. A., & Awudu, Y. S. (2019). Networking for foreign direct investment in Africa: How important is the ICT environment and financial sector development? *Journal of Economic Integration, 34*(2), 346–369. https://doi.org/10.11130/JEI.2019.34.2.34

Idun, A. A. A., Efiinu, E. E., Adam, M. A., & Agyenim-Boateng, E. (2024). Sectoral channels of FDI into productivity growth in Africa. *Open Journal of Business and Management, 12*(4), 2824-2853.

Iheonu, C. O., Abia, B., Okwoche, P., & Ifelunini, I. A. (2026). Is FDI from China Goodfor Labour Productivity in Sub-Saharan Africa? A Panel Cointegration. *Foreign Trade Review, 61*(1), 31-52.

Javorcik, B. S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. *American Economic Review, 94*(3), 605–627.

Johnston, A. K., & Ramirez, M. D. (2015). Foreign direct investment and economic growth in Côte d'Ivoire: A time series analysis. *Business and Economic Research, 5*(2). https://doi.org/10.5296/ber.v5i2.7638

Jude, C., & Levieuge, G. (2017). Growth effect of foreign direct investment in developing economies: The role of institutional quality. *The World Economy, 40*(4), 715–742. https://doi.org/10.1111/twec.12402

Justice, T., & Nouhoum, T. (2023). *Infrastructure quality and FDI inflows: Evidence from the arrival of high-speed Internet in Africa*. The World Bank Economic Review. https://doi.org/10.1093/wber/lhad021

Khan, H., Dong, Y., & Bibi, R. (2024). Institutional quality and foreign direct investment: Global evidence. *Journal of the Knowledge Economy, 15*, 10547–10591. https://doi.org/10.1007/s13132-023-01508-1

Kumar, N. (2006). Infrastructure availability, foreign direct investment inflows and their export-orientation: A cross-country exploration. *The Indian Economic Journal, 54*(1), 125–144.

Le, K. D. R., Tay, S. B. P., Choy, K. T., Verjans, J., Sasanelli, N., & Kong, J. C. (2024). Applications of natural language processing tools in the surgical journey. *Frontiers in Surgery, 11*, 1403540.

Li, C., Tanna, S., & Nissah, B. (2023). The effect of institutions on the foreign direct investment-growth nexus: What matters most? *The World Economy, 46*(7), 1999–2031. https://doi.org/10.1111/twec.13349

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics, 22*(1), 3–42. https://doi.org/10.1016/0304-3932(88)90168-7

Magbondé, G. K., Thiam, R. D., & Konté, A. M. (2025). Foreign direct investment, institutions, and domestic investment in developing countries: Is there a crowding-out effect? *Comparative Economic Studies, 67*(1), 221–261. https://doi.org/10.1057/s41294-024-00239-9

Markusen, J. R., & Venables, A. J. (1999). Foreign direct investment as a catalyst for industrial development. *European Economic Review, 43*(2), 335–356. https://doi.org/10.1016/S0014-2921(98)00048-8

Méon, P.-G., & Sekkat, K. (2005). Does corruption grease or sand the wheels of growth? *Public Choice, 122*(1–2), 69–97. https://doi.org/10.1007/s11127-005-3988-0

Mo Ibrahim Foundation. (2024). *2024 Ibrahim Index of African Governance*. Mo Ibrahim Foundation.

Nair-Reichert, U., & Weinhold, D. (2001). *Causality tests for cross-country panels: A new look at FDI and economic growth in developing countries*. Oxford Bulletin of Economics and Statistics. https://doi.org/10.1111/1468-0084.00214

Ndikumana, L., & Verick, S. (2008). *The linkages between FDI and domestic investment: Unraveling the developmental impact of foreign investment in Sub-Saharan Africa*. Economics Department Working Paper.

Ngouhouo, I. (2008). *Foreign direct investment in Central Africa: Attractiveness and economic effects* [Thèse de doctorat, Université de Toulon-Var]. Unpublished Doctoral Thesis, 14.

Odhiambo, N. M. (2022). Does foreign direct investment spur economic growth? New empirical evidence from Sub-Saharan African countries. *Economic Annals, 70*(3), 306–321. https://doi.org/10.2298/EKA2233061O

Ongo Nkoa, B. E. (2013). Does foreign direct investment improve economic growth in CEMAC countries? *European Journal of Business and Economics, 8*(2), 43–49. https://doi.org/10.12955/ejbe.v8i2.407

Ongo Nkoa, B. E. (2014). Impact of foreign direct investment on economic growth in CEMAC region: An analysis of transmission mechanisms. *International Journal of Sustainable Economy, 6*(4), 303–326.

Orji, A., Ogbuabor, J. E., Mba, P. N., & Anthony-Orji, O. I. (2021). Are wealthy countries always healthy? Health outcomes and public health spending nexus in Nigeria. *Sage Open, 11*(3), 21582440211040793.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy, 94*(5), 1002–1037. https://doi.org/10.1086/261420

Sachs, J. D., & Warner, A. M. (1995). *Natural resource abundance and economic growth*. National Bureau of Economic Research Working Paper.

Samir, S., & Hammam, S. (2016). The place of transport infrastructures among the economic factors of foreign direct investment attractiveness in the Meda-10 region. *American Journal of Economics and Business Administration, 8*(1), 23–34.

Seetanah, B., & Khadaroo, J. (2009). *The role of transport infrastructure in attracting FDI in Africa*. African Development Bank.

Sindze, P., Nantharath, P., & Kang, E. (2021). FDI and economic growth in the central African economic and monetary community (CEMAC) Countries: An analysis of seven economic indicators. *International Journal of Financial Research, 12*(1), 1-11.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics, 70*(1), 65–94. https://doi.org/10.2307/1884513

UNCTAD. (2023). *World investment report 2023*. United Nations.

UNCTAD. (2025). *World investment report 2025*. United Nations.

Van der Ploeg, F. (2011). Natural resources: Curse or blessing? *Journal of Economic Literature, 49*(2), 366–420.

World Bank. (2024). *World development indicators*. World Bank.

Yimer, A. (2023). The effects of FDI on economic growth in Africa. *The Journal of International Trade & Economic Development, 32*(1), 2–36. https://doi.org/10.1080/09638199.2022.2079709

Zakaria, Z. (2009). Empirical evidence on the causality relationship between foreign direct investment and economic growth in the developing countries. *Journal Ekonomi Malaysia, 43*, 27–52.