Science, Education and Innovations in the Context of Modern Problems

Issue 12, Vol. 8, 2025

Title of research article

Governance, Foreign Direct Investment, and Economic Growth: An Institutional Approach to the Interaction in Emerging Economies

Serdouk Bellahouel
Doctor
University Mustapha Stambouli, Mascara
Algeria
E-mail: serdoukbellahouel@gmail.com
ORCID: https://orcid.org/0009-0007-2697-9340

Menad Mhammed
Doctor.
University Belhadj Bouchaib, Ain Temouchent
E-mail: mhammed.menad@univ-temouchent.edu.dz
ORCID: https://orcid.org/0009-0006-7769-0881

Issue web link https://imcra-az.org/archive/387-science-education-and-innovations-in-the-context-of-modern-problems-issue-12-vol-8-2025.html

Keywords Rule of Law, Supremacy of Law, Human Rights, Algeria, Constitutional Law

Abstract

This paper investigates the dynamic interaction between governance quality, foreign direct investment (FDI), and economic growth in a panel of 13 emerging countries during the period 1996–2023. Using panel econometric models, the study assesses both the direct and interactive effects of governance and FDI on GDP per capita growth, while incorporating trade openness and public expenditure as additional determinants.

The findings reveal three major insights. First, governance plays a decisive role in fostering economic growth: a 1% improvement in governance indicators is associated with a 0.5156% increase in per capita GDP, underscoring the centrality of institutional quality in growth dynamics. Second, FDI by itself exhibits a negative standalone effect on growth (−0.1736%), often explained by profit repatriation, market dominance of multinational firms, and limited technology spillovers. Third, the interaction between governance and FDI significantly reverses this negative effect, leading to a 0.6194% positive impact on growth. This demonstrates that only under conditions of transparency, rule of law, and institutional accountability can FDI be transformed into a driver of sustainable development.

Additional results confirm that trade openness contributes positively to economic growth (+0.2091%), consistent with modernization and technology transfer theories. Conversely, excessive public expenditure hinders economic performance, with a 1.2568% decrease in per capita GDP when national spending is inefficiently allocated toward consumption rather than productive investment.

The study concludes that strong governance acts as a catalyst, converting FDI into a sustainable growth engine. Without institutional quality, foreign investment risks exacerbating dependency and capital flight. This research contributes to policy debates by emphasizing that governance reform is a prerequisite for maximizing the developmental benefits of FDI in emerging economies.

Citation. Serdouk, B., & Menad, M. (2025). Governance, Foreign Direct Investment, and Economic Growth: An Institutional Approach to the Interaction in Emerging Economies. *Science, Education and Innovations in the Context of Modern Problems*, 8(12), 154–170. https://doi.org/10.56352/sei/8.12.13

Received: 12.01.2025	Accepted: 17.05.2025	Published: 19.09.2025 (available online)

Introduction

The relationship between foreign direct investment (FDI) and economic growth has prompted numerous empirical studies across various countries, both industrialized and developing. Neoclassical as well as subjective growth models provide the basis for most empirical work. this relationship has been addressed from four primary perspectives determinants of economic growth; determinants of FDI ;The role of Multi National Enterprises in host countries; causation trend between FDI and economic growth .

Despite consistent theoretical arguments, empirical evidence regarding the impact of FDI on economic growth remains inconclusive. a recent survey by BRUNO and CAMPOS (2013) found that 50% of empirical studies indicate that foreign direct investment (FDI)has a positive impact on growth and 11% of studies found a negative impact, while 39% suggest that economic growth is independent of FDI (Bruno & Campos, 2013, p. 24). Consequently FDI appears to play an ambiguous role in fostering economic growth (Jude & Levieuge, 2013, p. 4).

Explanations for these conflicting results have pointed to a methodological issue about the role of different absorptive capacities of host countries, that the impact of FDI on economic growth depends on several local conditions, such as market size in the business openness; many studies have documented a positive correlation between the exchange rate and FDI . MAKTOUF (2015) pointed out that infrastructure and human capital significantly enhance FDI. Most recently studies reveal that there is a good set of conditions (Adhikary, 2017, p. 28).

At the same time, most of the focus has shifted in favor of the role of governance as an intermediate link between FDI growth and economic growth, and this relatively new focus has a number of advantages. First, the foundations of good governance seem to suit the motives of foreign investors, as they are manifested in the promotion and protection of their property. both local and foreign investors need to appreciate the institutional quality and know the indicators that provide information about compliance with the freedoms of practicing their activity, including respect for contracts and private property for the purpose of maximizing their interests. second, governance avoids the costs associated with uncertainty (lack of information and transparency , the degree of corruption and expropriation of property rights, which leads to the imposition of costs of disputes).

Emerging economies are constantly facing issues of violations of property rights, contracts and misuse of the contributions of small investors, and many cases of poor governance are still a common feature in the social, economic and political scene of these countries, due to the lack of agreement in the previous results on the nature of the relationship between economic growth and foreign direct investment flows or the absence of a relationship in the first place and with the lack of studies that did not take into account the governance factor and the relative importance of their indicators, this study raises the following questions :

Does governance moderate the relationship between FDI and growth economic in emergent countries?

In light of raising the above problem, we identify the following two hypotheses:

-Foreign direct investment is not independent of economic growth in emerging countries?

-Governance positively changes the impact of FDI on economic growth in emerging countries?

Motivations Of The Study

The motivation for this research stems from the following perspectives: The assessment of governance in the countries of the world by international organizations has been of great importance for many years. governance has become more than an analytical tool or approach but rather a transformation of society as a whole and a normative indication of what should be in society, secondly, the dramatic increase in global FDI flows to these countries . Finally to understand the nature of the relationship between governance, foreign direct investment and economic growth in these countries.

Literature Review

There have been many empirical contributions to the study of the relationship between FDI and growth. among them, a study conducted by PAUS and GALLAGHER (2008) examining the missing link between foreign direct investment and economic growth in Costa Rica and Mexico, the results were the weakness of the government's strategy in developing the policies necessary to advance national capacities, overcome market failures, and support the integration of national producers into the global production networks of transnational corporations. they stressed that institutional variables contribute to expanding the absorptive capacity of the country, which in turn benefits from foreign direct investment (Paus & Gallagher, 2008, pp. 75-77).

BAYRAKTAR (2013) examined the relationship between FDI indicators and Ease of Doing Business indicators for a set of developing countries from 2004 to 2010 and came to the conclusion that countries with stronger business records typically draw more FDI. Improvements in the Ease of Doing Business indicators in the countries under study were also found to have partial explanatory power in identifying higher flows of FDI (Bayraktar, 2013, p. 83).

ADELEKE'S (2014) study also looked at the effects of governance on the relationship between FDI and growth in Africa at the macro level and adopted panal data to examine the interrelationship. the results showed that governance in many African countries was very weak and thus hampered economic growth (Adeleke, 2014, p. 111).

AJIDE and al (2014) also addressed the following question: what is the impact of enterprise quality on the relationship between FDI and economic growth?. using macroeconomic data for 27 sub-Saharan African countries and three world bank governance indicators in analyzing corruption, political stability and government effectiveness. it was found that the main result was strong in cases where the three governance indicators interacted with FDI. in addition, the threshold method was used from countries with a good level of governance. There was a positive impact of FDI on growth of a larger size compared to countries with weak governance indicators (Ajide, Adeniyi, & Raheem, 2014, p. 71).

In another study by MALIKANE and CHITAMBARA (2017) on the link between FDI, democracy and economic growth on a group of eight countries in southern Africa for the period 1980-2014, using a generalized estimation system (GMM), it was found that countries with strong democratic institutions are better able to absorb the positive effects of FDI. (Malikane & Chitambara, 2017, p. 92).

HUSSEIN and ZAYED (2017) also focused on exploring the relationship between governance and FDI in emerging economies. for this purpose, they used a set ofdata for 48 countries between 1999 and 2014 , with the main result being a positive and significant relationship between governance and FDI. furthermore, host country governments should undertake clear and substantial policies and programmes that stimulate FDI inflows (Hossain & Zayed, 2017, p. 164).

The Plan Research

The first section discusses the major schools of thought on FDI. The second section examines the theoretical foundations of the triangular relationship between governance and FDI and economic growth. the third section presents empirical study and discusses the results.

The Foreign Direct Investment

First, the most important economic schools explaining FDI there are many reasons why FDI can have a positive or negative impact on a country's economic growth and these reasons are often discussed under three main theoretical perspectives to be the basis for empirical studies on the relationship of FDI and growth: the school of modernization , the school of dependency and the integrative school.

The School Of Modernization

According to the modernization school, nations progress into several stages according to a natural system. One of the most well-known modernization thinkers is ROSTOW (1960). It is believed that nations must go through several stages to transition from traditional to modern society, and that industrialization will help them get past the internal

obstacles preventing progress. liberalization and opening up the economy (external factors). removing these barriers is how to enable these countries from factors of production such as labor, capital and natural resources (Thaha & Galib, 2022, p. 24).

One of the central issues raised by the SOLOW model (1956) and widely discussed within the economic community is the catch-up of the southern countries with the northern industrialized countries. the growth model of SOLOW (1956) assumes that convergence will be automatic, that the wealth of countries is an increasing function of saving rates and a decrease in the rate of demographic growth, and that the weak growth rates of developing countries are due to the lack of internal financial sources and weak savings rates (Jones, 2016, p. 7).

In the middle of the 1980s, the idea of internal growth was developed, highlighting the fact that internal factors are primarily responsible for economic growth. Economists like ROMER (1986), LUCAS (1988), BARRO (1991), REBELO (1995), HELPMAN and GROSSMAN (1991), HOWITT and AGHION (1992), and others have contributed to the idea. According to SALA-I-MARTIN and BARRO (1992) and BORENSZTEIN (1998), the spread of knowledge and technology as well as the accumulation of capital are important drivers of economic progress. ROMER (1986) conducted an analysis by putting out a model based on external phenomena among businesses, wherein each firm has the ability to enhance its output while simultaneously enhancing the interests of other enterprises through the diffusion of technology among them. Because private capital accumulation produces beneficial technical impacts, this model views it as the primary driver of economic progress. Although the growth process depends heavily on human capital, one of the most well-known works in the internal growth model was that of Lucas (1988), who demonstrated that human capital is essential to production levels over the long run and that growth is only sustainable if it continues to grow unchecked (Thaalbi, 2013, p. 70)

BARRO (1991) introduced the external factor of public expenditure into the production function starting from the simple idea that public utilities increase the productivity of the private sector, which also leads to an increase in the return on investment. the main features of this model is that it first generates subjective growth due to the presence of fixed returns and the possibility of accumulation of private capital and public capital by production factors) and then proves that the tax rate has a positive impact on growth.

Finally, despite the importance of these three models of ROMER (1986); LUCAS (1988); BARRO (1991) at the theoretical level, the subjective nature is manifested by the fact that it is not necessary to assume the existence of an external variable of growth variables. unlike the neoclassical model, the long-term growth rate of the economy is the function of increasing the investment rate. thus, it is assumed that foreign direct investment is a prerequisite for the process of growth and sustainable development by providing external capital that helps to supplement domestic savings and promote the accumulation of capital associated with the transfer of production and management skills. it also enhances the process of technology transfer externally or interchangeably (within sectors) that allows to enrich the economy of the host country through the relations that are formed between multinational companies and local companies, which would enable increasing the absorptive capacity of recipient developing countries (Thaalbi, 2013, p. 74).

The School Of Subordination

For theorists of subordination, underdevelopment, poverty, and political instability in the southern countries are the result of historical processes established by the northern countries that led to economic subordination to the countries of the south. The theory suggests that the richest countries require the poorest to ensure their continued growth. this dependency is historically explained by the so-called ancient colonies of Asia, Africa and Latin America and by the unequal trade between these countries. while recognizing that increased in FDI enable increased investment and consumption in the short term that directly create immediate southern economic growth, the accumulation of FDI and the continuation of foreign projects will have negative effects on the rest of the economy that reduce economic growth. this assumption is based on the view that a foreign-dominated economy does not develop organically or in a disproportionate manner (Arévalo, 2024, p. 78).

This school flourished between the 1960s and the 1980s with the goal of achieving a richer distribution of wealth, income, and power through independent and collective action by developing countries. it combines two main theories: neo-marxist theories with both theorists GUNDER FRANK ; SAMALA PIERRE and SAMIR AMIN. According to AMIN (1974), a foreign-dominated economy is unable to develop independently. Due to demand

shifting from the home economy to the global community and profit diversion by foreign investors, this can cause economic stagnation in emerging nations. Foreign investors typically just care about their own self-interest, even if the host nation may have many different economic and social objectives. At the same time, DUNN'S (1975) chase suggests that FDI may crowd out domestic investment and create distortions that can be detrimental to the development of the host economy (Salnave, 2004, pp. 21-22).

One of the tenets of Celso Furtado's; Cardozo; cordoba and al structural dependency theory was that multinational corporations exploit cheap labor and obtain raw materials at the lowest possible cost. The monopolistic industrial structure resulting from foreign investment leads to what bornschier (1985) referred to as under-profit from productive forces. According to this hypothesis, the advantages of foreign investment for recipient countries are illusory. The unequal trade between rich countries and formerly colonized countries, the former selling manufactured goods at high prices and the latter producing raw materials and selling them generally at low prices, is another basis for its analysis (Salnave, 2004, p. 22).

The Scholl Of Integrative

The integrative school attempts to change thinking about FDI by analyzing it from the perspective of host countries and investors. Wilhelms and Witter (1998) developed the term FDI fitness, which focuses on a country's ability to attract, absorb, and retain FDI. This school's approach integrates the concepts of dependency and modernization that apply to the analysis and treatment of current motivations for FDI by host countries. It also addresses eclectic modeling, internalization theory, industrial organization theory, and the determinants of FDI. It is consistent with neoclassical and ideal market theories from a free trade perspective. The integrative theory also examines the benefits of FDI without falling into the dependency trap (Makoni, 2015, p. 80).

The Tripartite Relationship Between Governance, Fdi And Economic Growth

Governance

Governance refers to a country's ability to establish institutions that promote economic growth by ensuring political and economic stability, implementing policies that encourage education, research, and development, and combating corruption. It also promotes equity, participation, pluralism, transparency, accountability, and the rule of law in a manner that is effective, efficient, and enduring . (Gisselquist, 2012, pp. 3-6)

Economic Growth

Economic growth is the increase in a country's gross domestic product (GDP) or gross national product (GNP), or the expansion of its productive capacity, reflecting a rise in income, employment, and overall living standards. This growth is often driven by investment in physical and human capital, technological innovation, efficient resource allocation, and sound economic policies. It serves as a key indicator of a nation's ability to generate wealth and improve the well-being of its population. For growth to be sustainable and inclusive, it must be accompanied by the equitable distribution of wealth among members of society, without compromising the well-being of future generations this requires environmental conservation and ongoing social progress.

Interrelationships

The attached figure (Figure 2.1) shows the conceptual framework for the relationship between governance, foreign direct investment (IDE) and economic growth. It can be formulated according to the following conceptual framework:

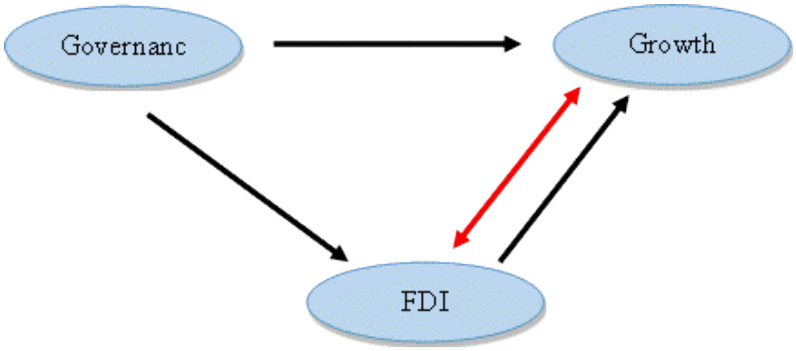


Figure 1: The Triangular Relationship Among Governance And Fdi And Economic Growth

(Penghuy, 2011, p. 3)

Governance and FDI: Governance affects FDI attraction by providing a safe and stable investment environment. In turn, FDI can improve governance by transferring knowledge and good practices.

FDI and Economic Growth: FDI contributes to economic growth by increasing productivity and creating jobs. It can also stimulate domestic investment by increasing competition and transferring technology.

Governance and Economic Growth: Governance directly affects economic growth by providing effective institutions and supportive policies. It also indirectly affects it by enhancing FDI attraction and domestic investment.

The conceptual framework shows that governance plays a pivotal role in promoting economic growth and attracting FDI. The relationship between these elements is three-way and reciprocal, as each depends on the other to achieve sustainable economic development

The Empirical Study

the sample comprises thirteen (13) countries: Argentina, Brazil, Chile, China, Colombia, India, Malaysia, Mexico, Russia, Singapore, Thailand, Turkiye, and Uruguay. The study period spans from 1996 to 2023, coinciding with the World Bank's 1996 release of the six governance indicators, also known as the Kaufman indicators.

Model Specifications And Variables

This study uses an integrated database (cross-section and time series) where the number of cross-section units is k=5 represented in 13 countries, and each cross-section unit includes a time series t=21 covering the period 1996-2016, and thus the number of observations (T×N) is 364, and the equation that will be estimated according to the following mathematical formula:

$$LnGDPC_{it} = \beta_0 + \beta_1 lnGOV_{it} + \beta_2 lnFDI_{it} + \beta_3 LnTO_{it} + \beta_4 LnINF_{it} + \beta_5 LnTNE_{it} + \beta_6 (lnGOV_{it} + \beta_2 lnFDI_{it}) + \varepsilon_t \dots\dots\dots\dots (01)$$

the variables used in the study can be defined as follows

Table 1: study model variables

Variables	Code	Module	Source

Dependent Variable			
Gdp Per Capita	GDP C	GDP Per Capita (Current US$)	WDI database
explanatory variables			
Governance	GOV	The Governance Index is a composite index formulated using the Principal Component Analysis (PCA) method. It contains six sub-indicators according to World Bank data, -Control of Corruption :Estimate -Government Effectiveness :Estimate -Political Stability and Absence of Violence/Terrorism :Estimate -Regulatory Quality :Estimate -Rule of Law :Estimate -Voice and Accountability :Estimate	WDI database
Foreign Direct Investment	FDI	Foreign direct investment, net inflows (BoP, current US$)	WDI database
Trade	TO	Trade (% of GDP)	WDI database
Total National Expenditure	TNE	Total National Expenditure (% of GDP)	WDI database
Interactive Index between Governance and Foreign Direct Investment	GOV *FDI	Governance data multiplied by FDI data	

Source: prepared by the researcher based on world bank data.

Note : napierian logarithm symbol; all data converted using napierian logarithm; i is the number of countries and t is the number of years while like ; the β is Model parameters ; the ε_t residual code

Analysis framework for the pca of governance variables

The Governance Index consists of six partial indicators adopted by the World Bank. To facilitate the analysis and avoid issues related to multicollinearity among these six variables, we aim to construct a composite index using Principal Component Analysis (PCA). First, we compute the correlation matrix of the variables and perform the Kaiser-Meyer-Olkin (KMO) test to assess the suitability of applying PCA.

Table 2: Correlation Matrix of Institutional Variables

Variables	(1) CC	(2) GE	(3) PS	(4) RQ	(5) RL	(6) VA
(1) CC	1					

(2) GE	0,8850	1				
(3) PS	0,8133	0,7541	1			
(4) RQ	0,8969	0,8994	0,7021	1		
(5) RL	0,9115	0,8789	0,7701	0,8716	1	
(6) VA	0,4493	0,1805	0,4202	0,3324	0,4447	1

source : prepared by the researcher based on the outputs of stata 17

Table 3: The KMO Test for the Suitability of Institutional Variables

Variable	Kmo
(1) CC	0,8801
(2) GE	0,7762
(3) PS	0,9003
(4) RQ	0,8802
(5) RL	0,8961
(6) VA	0,536
Overall	0,8399

Source: prepared by the researcher based on the outputs of stata 17

From the correlation matrix, we observe that all indicators are positively and strongly correlated. Additionally, the kmo test result exceeds 83%, indicating that all necessary conditions for applying this method are met.

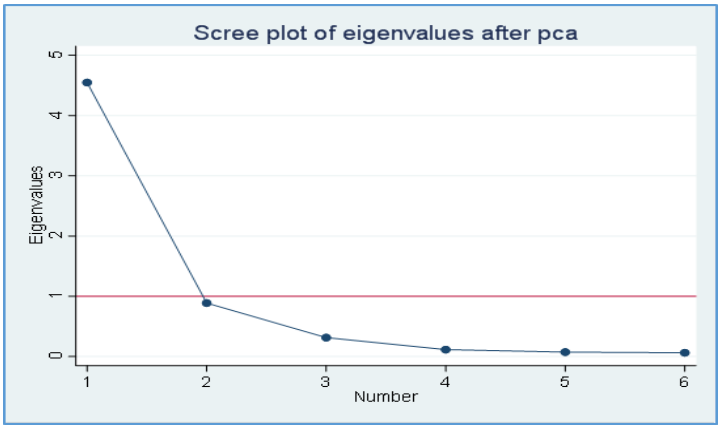
Table 4: covariance matrix

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	4,54759	3,65995	0,7579	0,7579
Comp2	0,887647	0,573666	0,1479	0,9059
Comp3	0,313981	0,19952	0,0523	0,9582
Comp4	0,114461	0,041019	0,0191	0,9773

Comp5	0,0734419	0,0105656	0,0122	0,9895
Comp6	0,0628763		0,0105	1

source: prepared by the researcher based on the outputs of stata 17

Figre 2: Scree plot of eigenvalues after PCA



Figre 2: Scree plot of eigenvalues after PCA

Source: prepared by the researcher based on the outputs of stata 17

Table 5: Determining the number of components using kaiser's criterion

Component	Variance	Difference	Proportion	Cumulative
Comp1	4.54759		0.7579	0.7579

Source: prepared by the researcher based on the outputs of stata 17

Table 6: Component matrix of variables after rotation

Variables	Comp1	Unexplained
CC	0,4548	0,05951
GE	0,4327	0,1487
PS	0,4063	0,2494
RQ	0,4361	0,1353

RL	0,4475	0,08919
VA	0,2247	0,7704

Source: prepared by the researcher based on the outputs of stata 17

Using the scree plot and Kaiser's method, we observe that the six indicators—Control of Corruption, Government Effectiveness, Political Stability, Regulatory Quality, Rule of Law, and Voice and Accountability—can be represented by a single principal component, which accounts for the largest proportion of variance, estimated at 75.79%.

Model Estimation In Panel Data Analysis

To estimate the model using Panel Models, the following steps must be followed:

-Studying the Stationarity of Time Series: The presence of unit roots in the time series of variables is examined using appropriate stationarity tests.

-Estimating Models: Three fundamental models are estimated: Pooled Regression Model ;Fixed Effects Model and Random Effects Model , the most appropriate model is then selected by comparing these models using a set of statistical tests, such as the F test, the Hausman test, and the Breusch-Pagan test.

-Testing the Validity of the Model: The suitability of the chosen model and the quality of its estimates are assessed using appropriate statistical diagnostic tests

Stationarity Study Of Time Series

To examine the presence of unit roots in the time series of variables, various tests can be employed. In this study, we focus on two specific tests: the Levin, Lin & Chu (LLC) test and the Im, Pesaran & Shin (IPS) test. The results are presented in the following table:

Table 7: The results of LLC and IPS Test

Variables	LLC		IPS	
LnGDPC	1st Difference	Level	1st Difference	Level
LnGOV	-7.8404 (0.0000)	-1.1505 (0.1250)	-7.8070 (0.0000)	2.7301 (0.9968)
LnFDI	-0.3688 (0.3501)	1.3028 (0.9037)	-4.8514 (0.0000)	3.3417 (0.9996)
LnTO	/	-2.1715 (0.0149)	/	-3.0719 (0.0011)
LnINF	-8.1874 (0.0000)	-1.4440 (0.0744)	-9.3166 (0.0000)	-1.0123 (0.1557)

LnTNE	/	-5.0536 (0.0000)	/	-6.4088 (0.0000)
LnGDPC	/	-3.4131 (0.0003)	/	-2.9921 (0.0014)

Source: prepared by the researcher based on the outputs of stata 17

In the table, the value in parentheses represents the p-value, while the value above it represents the test statistic. A time series is considered stationary if the p-value corresponding to the test statistic is less than 5%. Based on this criterion, we conclude the following:

-The series LnFDI, LnINF, and LnTNE are stationary at level.

-The series LnGDPC, LnGOV, and LnTO are stationary at the first difference.

Estimating Models

Table 8: Estimation Results of the Pooled, Fixed Effects, and Random Effects Regression Models.

Study period: (1996-2023)		**Total views: 364**		**Number of countries:13**	
Dependent variable: LnGDPC					
Explanatory variables	**Poold_model**		**Randome_model**		**Fixed_model**	
	P-value	Coef	P-value	Coef	P-value	Coef
LnGOV	0.000	0.5156837	0.000	0.315852	0.009	0.1613267
LnFDI	0.000	-0.1736919	0.000	0.1985084	0.000	0.2816021
LnTO	0.005	0.2091435	0.126	0.1291186	0.019	-0.2254991
LnINF	0.001	0.1655622	0.075	-0.0570173	0.015	-0.0688825
LnTNE	0.015	-1.0256822	0.169	0.5427553	0.025	0.7917817
Ln(GOV*FDI)	0.000	0.6194742	0.000	0.3327553	0.000	0.2926084
Constant	0.285	2.809576	0.028	-4.318225	0.024	-3.930771
R-squared	0.6119		0.7001		0.7209	
F-test	93.80		655.42		148.53	
Prob > F	0.0000		0.0000		0.0000	

Source: prepared by the researcher based on the outputs of stata 17

Table 9: Model selection tests.

Model Selection Criteria	Prob	calculated value	Test
Fixed effects	91.86	0.0000	Ficher
Random effects	832.49	0.0000	Breusch and Pagan
Fixed effects	22.85	0.0008	Hausman

Source: prepared by the researcher based on the outputs of stata 17

To select the optimal statistical model, we followed the following steps:

Comparing the Pooled Model with the Fixed Effects Model:
We used the Fisher Test, and the results showed that the probability associated with the

test statistic was less than 5%, indicating that the fixed effects model was superior.
Comparing the Pooled Model with the Random Effects Model:
We used the Breusch-Pagan Test, and the probability was also less than 5%, indicating

that the random effects model was appropriate.
Distinguishing between the Fixed Effects Model and the Random Effects Model:
We used the Hausman Test, and the results showed that the probability was less than 5%, confirming that the fixed effects model is the best (as shown in Table 9).

Model Validity Test

The following table summarizes the various tests that are performed to establish the model's validity :

Table 10: Model validity tests

Test	S-value	P-value
Wooldridge test for autocorrelation	134.835	0.000
Test for groupwise heteroskedasticity	305.41	0.000
Pesaran's test of cross sectional independence	13.735	0.000

Source: prepared by the researcher based on the outputs of stata 17

-Wooldridge Test for Autocorrelation:

P-value: 0.000 (less than 5%), indicating the presence of autocorrelation in the data.
This suggests that the errors in the model are correlated, which could lead to biased and inconsistent estimates.

- Test for Groupwise Heteroskedasticity:

P-value: 0.000 (also less than 5%), indicating the presence of heteroskedasticity (non-constant variance across

groups).

This suggests that the variance of the error terms varies across different groups or observations, which could affect the efficiency and reliability of the estimates.

- Pesaran's Test of Cross-Sectional Independence:

P-value: Greater than 5%, indicating no correlation between the cross-sections (i.e., the samples are independent).

This result suggests that there is no mutual influence between the cross-sectional units in the model, which is generally a positive indication for model specification.

Panel Corrected Errors

Based on the results of the previous tests, we conclude that the estimated model (fixed effects model) suffers from autocorrelation and heteroskedasticity. To address these issues, we correct for the panel data errors by estimating panel-corrected standard errors (PCSE). This method accounts for both autocorrelation in the error terms and heteroskedasticity, thereby improving the reliability of the standard errors of the estimated parameters. By applying this correction, we mitigate the standard econometric issues in the model, leading to the final model, which is specified as follows:

$$\text{LnGDPC} = 2.8095 + 0.5156\ \text{LnGOV} - 0.1736\ \text{LnFDI} + 0.2091\ \text{LnTO} + 0.1655\ \text{LnINF} - 1.2568\ \text{LnTNE} + 0.6194\ \ln(\text{GOV} * \text{FDI}) \ldots (2)$$

Interpretation Of Results

Analysis of Equation (2): the interprets of this results based on the three major economic schools that have examined the role of foreign direct investment (FDI): the Modernization School, the Dependency School, and the Integrative School.

-The Impact of Governance (lnGOV) on Economic Growth , a 1% increase in the governance index leads to a 0.5156% increase in GDP per capita.

This finding aligns with the Modernization School, which argues that improved governance enhances the business environment, reduces corruption, and ensures efficient resource allocation—factors that collectively foster economic growth.
Strong governance increases investor confidence, strengthens legal institutions, and promotes fair competition, all of which are essential for sustained economic development.

-The Impact of Foreign Direct Investment (lnFDI) on Economic Growth , a 1% increase in FDI flows leads to a 0.1736% decrease in GDP per capita.

This result supports the views of Jones (1975) and Samir Amin (1974), who argue that foreign investment can lead to resource exploitation without generating real economic value.
Multinational corporations may repatriate profits instead of reinvesting locally, which limits their contribution to domestic economic expansion.
FDI can also result in monopolization, where foreign firms dominate key industries, hindering the growth of local enterprises.
This perspective aligns with the Dependency School, which views FDI as a mechanism that maintains economic subordination rather than fostering sustainable development.

- The Impact of Trade Openness (lnTO) on Economic Growth , a 1% increase in trade openness leads to a 0.2091% increase in GDP per capita.

This outcome is consistent with modernization theories, which argue that trade liberalization enhances economic growth by increasing productive efficiency and facilitating technology transfer.

This finding is consistent with endogenous growth theories, such as Romer (1986), which argue that trade openness facilitates technological progress and knowledge transfer, thereby driving economic growth. It also supports the theory of comparative advantage, which explains how trade enhances the efficiency of resource allocation and boosts productivity.

Additionally, the positive relationship suggests that countries that negotiate fair trade agreements benefit more from trade liberalization.

4-The Impact of Inflation (lnINF) on Economic Growth ,a 1% increase in inflation leads to a 0.1655% increase in GDP per capita.

This result is somewhat unexpected, as traditional economic theories often associate high inflation with negative effects on growth.

However, a possible explanation is that moderate inflation can stimulate economic activity by encouraging spending and investment.

There may also be a short-term link between rising prices and increased nominal revenues in certain sectors, leading to an apparent GDP increase without necessarily improving the standard of living.

-The Impact of Total National Expenditure (lnTNE) on Economic Growth , a 1% increase in national expenditure leads to a 1.2568% decrease in GDP per capita.

The Barro Model (1991) suggests that government spending can enhance productivity if directed toward infrastructure, education, and healthcare.

However, if public spending is allocated inefficiently—toward consumption rather than investment—it can reduce economic efficiency.

This result supports the hypothesis that excessive reliance on public expenditures, without productivity improvements, leads to fiscal deficits that slow economic growth.

-The Impact of the Interaction Between Governance and Foreign Investment (lnGOV * lnFDI) on Economic Growth, a1% increase in the interaction between governance and FDI leads to a 0.6194% increase in GDP per capita.

This finding highlights the crucial role of governance in enhancing the benefits of foreign direct investment.

In emerging economies, where institutions are often weak or in transition, governance serves as a key mediating factor that maximizes the positive effects of FDI by:

Enhancing transparency and political stability, which boosts investor confidence and attracts larger investments.

Providing a secure investment environment by strengthening the rule of law and protecting property rights, ensuring that FDI contributes to sustainable growth.

Reducing institutional risks such as corruption and policy instability, which otherwise discourage long-term foreign investment.

Lowering transaction costs and uncertainty, making the economy more attractive to foreign investors.

Conclusion

In conclusion, this study emphasizes the vital role that governance plays in strengthening the relationship between foreign direct investment (FDI) and economic growth in emerging countries. While the results show that FDI alone can have a negative impact on economic growth, the interaction between strong governance and FDI significantly reverses this effect, leading to a notable increase in growth. This interaction highlights the importance of governance in creating a secure and stable investment environment, enhancing investor confidence, and reducing institutional risks such as corruption and political instability.

Good governance not only attracts foreign investment but also ensures that these investments contribute to sustainable economic development. By enhancing transparency, protecting property rights, and strengthening the rule of law, governance can transform FDI from mere financial flows into a true engine of economic growth. This transformation allows emerging countries to benefit from the technology and know-how brought by foreign firms, boosting productivity and creating new job opportunities.

In addition, the study supports the idea that trade openness promotes economic growth by increasing productivity and facilitating technology transfer. Opening up to global markets allows emerging countries to access advanced technologies and new market opportunities, enhancing their international competitiveness. However, excessive national spending can hinder growth if not directed effectively, suggesting that fiscal policies should focus on investing in infrastructure and education rather than unproductive consumer spending.

For emerging countries, significant challenges remain in reforming governance systems to achieve sustainable economic growth. Weak institutions, a lack of transparency, and widespread corruption are major obstacles to their ability to attract foreign investment and foster growth. These challenges require deep and comprehensive reforms in their political and economic systems. For example, accountability mechanisms must be strengthened, and judicial independence must be ensured to build investor and community trust.

Therefore, policymakers in these countries must prioritize governance reforms that enhance transparency, strengthen institutions, and combat corruption. Additionally, these countries must focus on building the infrastructure needed to support economic growth, such as roads, energy, and telecommunications, which are essential for attracting foreign investment. Investment in education and vocational training also plays a crucial role in enhancing human capital, increasing the economy's ability to absorb the technology and knowledge brought by foreign investment.

Ultimately, this study confirms that the interplay between governance and foreign direct investment is key to achieving sustainable economic growth in emerging countries. Strong governance not only maximizes the benefits of FDI but also contributes to building more resilient economies better able to face future challenges. Through comprehensive governance reforms, emerging countries can narrow the gap with advanced economies and achieve inclusive and sustainable growth that benefits all segments of society.

Actuality of the Study

The debate over whether FDI promotes or hinders growth has long been controversial. While some studies highlight positive spillovers, others demonstrate negligible or negative outcomes. This divergence stems from differences in absorptive capacity, institutional strength, and macroeconomic stability of host countries.

For emerging economies—often characterized by weak institutions, governance challenges, and structural dependence on external capital—understanding how governance mediates the FDI–growth nexus is highly relevant. The Algerian and broader emerging economy context illustrates the urgent need for institutional reform to ensure that FDI translates into technology transfer, job creation, and long-term growth.

Thus, this study is timely as it aligns with global discussions on sustainable development, investment governance, and economic diversification strategies in the Global South.

Method and Methodology

The study employs a panel econometric approach covering 13 emerging countries between 1996 and 2023.

1. Data Sources: Governance indicators from the World Bank (Worldwide Governance Indicators), FDI and GDP

data from UNCTAD and World Development Indicators (WDI).
2. Variables:
- Dependent variable: GDP per capita growth.
- Independent variables: governance index, FDI inflows (% of GDP), interaction term (governance × FDI), trade openness, and public expenditure.
3. Econometric Models: Fixed-effects and random-effects panel regressions, complemented by robustness checks using Generalized Method of Moments (GMM) to address potential endogeneity.
4. Analytical Strategy: Assessment of both direct effects (governance, FDI, openness, spending) and interaction effects (governance × FDI) on economic growth.

This mixed methodological approach ensures robust conclusions and accounts for heterogeneity across countries and over time.

Findings

- Governance matters for growth: A 1% increase in the governance index enhances per capita GDP by 0.5156%.
- FDI in isolation hinders growth: A −0.1736% impact suggests risks of capital flight, profit repatriation, and market dependency when governance is weak.
- Interaction effect is decisive: Governance × FDI yields a +0.6194% impact, proving that institutional quality transforms FDI into a growth-enhancing factor.
- Trade openness fosters growth: A 1% rise in openness leads to a +0.2091% increase in GDP per capita, supporting liberalization and modernization theories.
- Public spending inefficiency: A 1% rise in unproductive expenditure decreases GDP per capita by −1.2568%, stressing the importance of fiscal discipline.

Funding

This research was conducted without any specific external funding. The study was supported by the authors' affiliated institutions, University Mustapha Stambouli, Mascara, and University Belhadj Bouchaib, Ain Temouchent, which provided access to academic resources and databases.

Ethical Considerations

The research relies solely on secondary macroeconomic data obtained from internationally recognized sources. No human participants or experimental interventions were involved. Ethical integrity has been maintained by:

- Ensuring accuracy of data and transparency in methods.
- Respecting intellectual property through proper citation.
- Maintaining neutrality and avoiding policy bias.

Acknowledgment

The authors extend their gratitude to the faculties of economics at both University Mustapha Stambouli and University Belhadj Bouchaib for academic and logistical support. They also acknowledge the valuable feedback from colleagues during seminar discussions that shaped the empirical strategy of this study.

Conflict of Interest

The authors declare no conflict of interest. The study was carried out independently and free from institutional, financial, or political influence.

References

1. Adeleke, A. I. (2014). FDI-growth nexus in Africa: does governance matter? Journal of Economic Development, 39(1), 111-135.
2. https://doi.org/10.35866/caujed.2014.39.1.005
3. Adhikary, B. K. (2017). Factors influencing foreign direct investment in South Asian economies: A comparative analysis. South Asian Journal of Business Studies, 6(1), 8-37.
4. https://doi.org/10.1108/SAJBS-10-2015-0070

5. Ajide, K., Adeniyi, O., & Raheem, I. (2014). Does Governance Impact on the Foreign Direct Investment-Growth Nexus in Sub-Saharan Africa? Zagreb international Review of Economics & Business, 17(2), 71-81.
6. https://hrcak.srce.hr/en/129469
7. Arévalo, E. E. (2024). Towards a theory of dependent democracy. Thesis Eleven, 180(1), 72-91.
8. https://doi.org/10.1177/07255136231202057
9. Bayraktar, N. (2013). Foreign direct investment and investment climate. Procedia Economics and Finance, 5, 83-92.
10. https://doi.org/10.1016/S2212-5671(13)00013-0
11. Bruno, R., & Campos, N. F. (2013). Reexamining the conditional effect of foreign direct investment. (No. 7458). IZA Discussion Papers., 1-60.
12. https://doi.org/10.2139/ssrn.2287068
13. Deng, P. (2004). Outward investment by Chinese MNCs: Motivations and implications. Business horizons, 47(3), 8-16.
14. https://doi.org/10.1016/S0007-6813(04)00023-0
15. Ferguene, A., & Coissard, s. (2010). Institutions, Gouvernance et Développement. les cahiers du cread, 91, 5-32.
16. https://www.asjp.cerist.dz/en/article/2091
17. Gisselquist, R. M. (2012). Good governance as a concept, and why this matters for development policy . (No. 2012/30). WIDER Working Paper.
18. https://hdl 10419/81039
19. Hossain, M. S., & Zayed, N. M. (2016). Corporate Governance and Foreign Direct Investment: Evidence from Emerging Economies. Australian Academy of Accounting and Finance Review, 2(2), 136-165.
20. https://journalshosting.com/aabljournals/index.php/aaafr/article/view/18
21. Jones, C. I. (2016). The facts of economic growth. In Handbook of macroeconomics (Vol. 2) Elsevier., 3-69.
22. https://doi.org/10.1016/bs.hesmac.2016.03.002
23. Jude, C., & Levieuge, G. (2013). Growth Effect of FDI in Developing Economies: The Role of Institutional Quality. Available at SSRN 2409656., 1-35.
24. https://dx.doi.org/10.2139/ssrn.2620698
25. Makoni, P. L. (2015). An extensive exploration of theories of foreign direct investment. RISK GOVERNANCE & CONTROL. Financial markets and institutions, 5(2), 77-83.
26. https://doi.org/10.22495/rgcv5i2c1art1
27. Malikane, C., & Chitambara, P. (2017). Foreign Direct Investment, Democracy and Economic Growth in Southern Africa. African Development Review, 29(1), 92-112.
28. https://doi.org/10.1111/1467-8268.12242
29. Paus, E. A., & Gallagher, K. P. (2008). Missing links: Foreign investment and industrial development in Costa Rica and Mexico. Studies in Comparative International Development, 43(1), 53-80.
30. http://doi.org/10.1007/s12116-007-9016-2
31. SALNAVE, M. (2004). Déterminants et impacts de l'investissement direct étranger sur la croissance économique en Haïti (1970-2000). Montréal, Qc, Canada: Université de Montréal .
32. http://hdl.handle.net/1866/248
33. Temple, J. (2001). Effets de l'éducation et du capital social sur la croissance dans les pays de l'OCD. Revue économique de l OCDE 2001(2) 59-110.
34. http://doi.org/10.1787/eco_studies-v2001-art11-fr
35. Thaalbi, I. (2013). Déterminants et impacts des IDE sur la croissance en Tunisie .Doctoral dissertation. ÉCOLE DOCTORALE Augustin Cournot/Université de Strasbourg.
36. https://theses.fr/2013STRAB016
37. Thaha, R., & Galib, W. K. (2022). Analysis of Modernization Theory in the Perspective of Rostow's Economic Growth Theory. Journal of Judikaltura, 1(1), 24-30.
38. http://dx.doi.org/10.61963/jkt.v1i1.24