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THE GROWTH EFFECTS OF FDI: CONTRASTING G7 AND BRICS+ ECONOMIES

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Abstract

This paper examines the heterogeneous growth effects of Foreign Direct Investment (FDI) by conducting a comparative empirical analysis of the G7 and BRICS+ economies. The objective of this research is to quantify and contrast the contribution of FDI to real GDP growth in advanced and emerging economies, thereby identifying the structural drivers behind these divergent outcomes. Using a panel dataset covering the period 2004–2023, the study employs three complementary estimation techniques within the Barro-type conditional convergence framework. The results reveal a clear asymmetry: FDI exerts a strong, positive, and statistically significant growth effect in BRICS+ economies, whereas its impact is statistically insignificant and economically negligible in G7 countries. These findings confirm that the growth benefits of foreign investment are context-dependent and highly sensitive to domestic structural conditions.

Keywords: *Foreign direct investment; economic growth; G7; BRICS+; panel data*

JEL*: F21; F23; O11; O40; C33*

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INTRODUCTION

The role of Foreign Direct Investment (FDI) as a catalyst for economic growth remains a central question in the field of international and development economics. Yet, the evidence demonstrates that its effects are far from uniform, varying markedly across countries depending on structural, institutional, and developmental factors. Comparing the G7 coalition of advanced economies with the expanding BRICS+ bloc of emerging and developing nations provides an insightful lens through which to understand the differentiated mechanisms that govern the FDI–growth nexus.

The G7 economies, defined by high levels of income, institutional maturity, and advanced technological capacity, typically attract efficiency- and innovation-seeking investment. In these contexts, FDI is often integrated into high-value sectors such as advanced manufacturing, finance, and technology-intensive services, where it complements domestic capital and skilled labour to reinforce existing productivity advantages. As a result, FDI in developed economies tends to play a reinforcing rather than transformative role, contributing incrementally to productivity and innovation rather than driving structural change.

In contrast, the BRICS+ economies encompass a heterogeneous group of nations at different stages of industrialization and institutional development, many of which face persistent constraints in capital accumulation and technological capability. In these economies, FDI often performs a foundational function by financing infrastructure, creating employment, and facilitating access to established technologies and managerial expertise. The developmental impact of such investment, however, remains contingent on domestic absorptive capacities, including the quality of governance, human capital, and financial system depth.

This divergence gives rise to the central proposition of this paper: the mechanism through which FDI contributes to growth is fundamentally context-dependent. In advanced economies, FDI primarily serves as a reinforcing mechanism that consolidates existing innovation ecosystems, whereas in emerging and developing economies it operates as a catch-up mechanism, enabling technology diffusion, industrial upgrading, and structural transformation.

The study therefore seeks to provide a systematic empirical comparison of the growth effects of FDI across the G7 and BRICS+ blocs. By employing a unified analytical framework, it aims to uncover how differences in institutional capacity, financial development, and technological maturity shape the growth outcomes of foreign investment. In doing so, this paper contributes to the broader understanding of the conditional nature of FDI-led growth and provides policy-relevant insights for economies at varying stages of development.

Against this background, the objective of this research is to empirically assess whether the growth effects of FDI differ systematically between advanced and emerging economies by comparing the G7 and BRICS+ blocs within a unified analytical framework. The paper evaluates the extent to which structural characteristics, institutional capacity, and macroeconomic conditions mediate the impact of foreign investment on real GDP growth. To achieve this aim, the study is structured as follows. The literature review synthesizes theoretical foundations and

empirical findings on the FDI–growth nexus. The methodology section introduces the conditional convergence framework, describes the dataset, and presents the econometric specifications. The results section reports the empirical estimates for both country groups, followed by a discussion that interprets the findings in light of structural and institutional differences. The paper concludes with key insights and policy recommendations.

THE BRICS PLUS PHENOMENON AND ITS EVOLVING CONTOURS

The formation of the 'BRICS format' represents one of the most significant geopolitical and economic phenomena of the 21st century. The group's establishment in 2009 was a direct response to the need for a new balance of power in the global economy, which had hitherto been dominated by the G7 alliance. The acronym BRIC initially designated the four largest developing economies: the Federative Republic of Brazil (B), the Russian Federation (R), the Republic of India (I), and the People's Republic of China (C). With the accession of the Republic of South Africa (S) in 2010, the bloc acquired a transcontinental character and has since been known as BRICS.

The 2023 BRICS summit in Johannesburg marked a pivotal moment in the bloc's evolution with the invitation extended to Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates to join the group. This expansion, creating the de facto "BRICS+" bloc, represents a significant geopolitical shift, underscoring an appetite for enhanced cooperation among non-Western economies and amplifying the Global South's voice in international affairs. While institutions like the New Development Bank provide an alternative to Western-dominated financial systems, the bloc's journey toward deeper financial integration remains nascent. The newly expanded BRICS+ now encompasses 45% of the world's population, over 28% of global nominal GDP, and around 21% of global exports. Therefore, current estimates for the BRICS+ format range between 36% and 40% of global GDP (PPP), solidifying its position as a larger economic bloc than the traditional Western core represented by the G7, which has declined to about 30% of global GDP (PPP). This marks a historic economic shift towards the Global South (IMF, 2025; Srivastava, 2024).

According to the IMF's World Economic Outlook (2025), BRICS nations are projected to be the primary engine of global economic expansion in the coming years. Collectively, they are expected to contribute nearly 40% of global GDP growth through 2028. This growing economic dominance is underscored by the individual projections for China and India, which are set to lead global growth with contributions of 22.6% and 12.9% respectively, surpassing the United States' 11.3%. As a result, the bloc's share of global GDP has surged from 18% in 2010 to 26% in 2021. A key indicator of this transformative shift is that the per capita GDP of BRICS countries is now growing faster than the global average. This demonstrates that their increasing economic weight is driven not by population growth, but by rising productivity and economic output, signaling a profound rebalancing of the global economy.

Although BRICS+ is not a formal trade agreement, its expansion opens the potential for forging a mega-regional trade agreement (RTA) akin to the CPTPP or RCEP. Such enhanced trade cooperation could unlock new avenues for economic growth by

facilitating the cross-border flow of goods, capital, and technology. This paper posits that by enabling access to resources and markets, fostering higher productivity, and attracting investment, deeper regional integration within BRICS+ could serve as a powerful catalyst for its economic ascent, while allowing members to progress without immediate exposure to global competition from more advanced exporters (Stuenkel, 2022).

This expansion finds its counterpoint in the consolidation of the G7 alliance, which has reinforced its own cohesion and strategic dialogue in response to a shifting global order. While not expanding in membership, the G7 has deepened its coordination on global issues, positioning itself as the guardian of a rules-based international system. This dynamic effectively frames the current global economic landscape as one of competing blocks: an expanding, heterogeneous BRICS+ coalition seeking to reform global governance, and a consolidated, developed G7 alliance aiming to uphold and adapt the existing multilateral framework.

For Stuenkel (2020) and Hurrell (2018), the structural impact of BRICS+ in international relations manifests through two interconnected dimensions: the constitutive and the procedural. The constitutive dimension is reflected in the ability to shape a collective identity and normative framework, while the procedural dimension refers to the capacity to redefine the global agenda. The efficacy of BRICS+ in exerting this influence directly depends on its level of internal coherence and the strategic convergence of its members, who are often competitive powers united by a shared interest in a multipolar world order.

The efficacy of BRICS+ in exerting structural influence directly depends on two key factors. The first is its level of internal coherence, considering that BRICS is a coalition of often competitive powers, manifested in rivalries such as that between China and India in Asia or Brazil and South Africa in WTO negotiations. The second factor is strategic convergence, namely the shared interest in the 'erosion' of Western hegemony, particularly in preserving state sovereignty. Stuenkel (2020) concludes that the transformative potential of BRICS should not be measured by the classic parameters of institutional consolidation, but by its ability to systematically destabilize existing power hierarchies through the gradual creation of institutional alternatives via what Stephen (2022) terms "asymmetric solidarity." This concept refers to the tactic of temporary alignment by diverse actors against common threats as a counterbalance to the West, without creating deep institutional bonds, while also aiming to limit the dominance of any single member. This approach allows BRICS, despite its internal contradictions, to exert global influence through a long-term strategy of alternative institutionalization.

FDI SPILLOVERS IN EMERGING AND ADVANCED ECONOMIES

The analysis of Foreign Direct Investment (FDI) spillovers has increasingly emphasized the mechanisms through which multinational enterprises transmit technology, production knowledge, and managerial practices to host economies. These spillover channels typically operate through demonstration effects, labor mobility, vertical supply chain linkages, and competition-induced productivity

upgrading, making the absorptive capacity of domestic firms and institutions a critical determinant of realized gains (Javorcik, 2004).

Table 1 provides a comparative overview of the key characteristics and mechanisms of FDI spillovers in BRICS and G7 economies. The table highlights fundamental differences in the scale, purpose, and geographic orientation of outward FDI, as well as the channels through which spillovers are transmitted to domestic firms. While BRICS countries primarily leverage FDI for technology catch-up, infrastructure upgrading, and managerial learning (Borensztein, De Gregorio, & Lee, 1998), G7 economies employ FDI predominantly to reinforce existing technological capabilities, promote innovation, and expand knowledge-intensive global value chains (Alfaro & Chen, 2018)**.** The comparison underscores that the developmental impact of FDI is highly contingent on absorptive capacity, sectoral focus, and institutional quality (Crespo & Fontoura, 2007), with BRICS economies exhibiting greater reliance on domestic human capital and infrastructure for realizing productivity gains.

Table 1. FDI spillover aspects in BRICS vs G7

Aspect	BRICS Economies	G7 Economies
Share of Global FDI Outflows	~15%	~45–55%
Dominant Investor	China (71% of BRICS outward FDI)	USD, Germany, Japan
Primary Destination	Developing and emerging economies (Asia, Africa, former Soviet states)	Other advanced economies (North America, EU, Japan)
Purpose of FDI	Market-seeking, resource-seeking, technology catch-up	Efficiency-seeking, knowledge-intensive, R&D-driven
Spillover Channels	Technology transfer, infrastructure upgrading, managerial learning, backward linkages	Innovation diffusion, cross-border R&D, labor mobility, advanced value chains
Role of Human Capital	Critical for absorptive capacity and productivity gains	Already high; marginal gains mainly in innovation
Impact on Domestic Firms	Large potential for productivity catch-up, sectoral upgrading	Reinforces existing technological and productivity leadership
Institutional Dependenc y	Spillovers highly dependent on domestic policies, infrastructure, education	Spillovers reinforced by institutional coordination but less dependent on development stage

Source: authors' work

The BRICS bloc collectively accounts for approximately 15% of global FDI outflows, amounting to roughly US$210 billion per year (UNCTAD, 2023). China is the dominant contributor, with outward FDI flows averaging around US$150 billion annually, representing around 70% of the bloc's total. The remaining members exhibit substantially more modest levels of outward investment: India approximately US$15 billion, Russia (pre-sanctions) around US$25 billion, Brazil approximately US$12 billion, and South Africa near US$8 billion per year.

The geographic allocation of outbound investments also varies systematically between members. China's outward FDI is primarily directed toward Asia (cca50%), especially Vietnam, Indonesia, and Malaysia, alongside a significant and growing presence in Africa, particularly in infrastructure, telecommunications, and resource sectors. India, by contrast, directs a sizeable share of its outward investment toward the United States (≈35%) and Europe (≈25%), especially the United Kingdom and Germany, reflecting the strategic importance of knowledge-intensive industries and service-oriented sectors. Prior to the imposition of comprehensive Western sanctions, Russia channeled most of its outward FDI toward former Soviet republics and select European economies, largely driven by energy and resource-linked strategic interests.

Overall, the outward investment patterns of BRICS economies illustrate that the magnitude and direction of FDI flows shape the nature of spillover effects. Countries receiving Chinese investment typically benefit from technology transfer through infrastructure development, manufacturing upgrading, and supply-chain integration, while Indian and Brazilian outward FDI is more strongly associated with knowledge acquisition, managerial learning, and innovation spillovers gained from investing in advanced economies. This dynamic aligns with the classic proposition that FDI contributes to growth when host economies possess sufficient absorptive capacity (Borensztein et al., 1998). Moreover, firm-level studies confirm that technology diffusion is not automatic; it depends on the degree of local linkages and the operational mode of foreign investors (Javorcik, 2004).

These differentiated channels underscore that the developmental impact of FDI is heterogeneous, shaped by sectoral specialization, complementary domestic investment, and institutional quality (Crespo & Fontoura, 2007). Accordingly, FDI should be understood as a co-evolutionary mechanism of economic upgrading rather than a uniform driver of growth. BRICS economies therefore demonstrate varied but strategically significant pathways for leveraging outward FDI as a source of long-term productivity enhancement, capability formation, and structural transformation, a process aligning with the concept of "linkage, leverage, and learning" (Mathews, 2006).

In contrast to the BRICS economies, where FDI serves primarily as a conduit for technological upgrading and industrial catch-up, G7 countries exhibit a structurally different FDI profile, reflecting their status as innovation front-runners and dominant sources of global capital. The G7 collectively accounts for a significantly larger share of global outward FDI stock, historically ranging between 45% and 55%, driven largely by multinational corporations embedded in advanced technological and managerial ecosystems (OECD, 2022). The spillover mechanisms in G7 economies operate predominantly through innovation-intensive channels, including cross-border R&D collaboration, international patenting networks, and global value chain coordination (Criscuolo & Timmis, 2018).

A key distinction lies in the direction and purpose of investment. Unlike BRICS economies, which channel outward FDI toward resource-seeking and market-expansion strategies in developing regions, G7 investment is overwhelmingly efficiency- and knowledge-seeking, concentrated in other advanced economies to exploit synergies in high-technology sectors. Consequently, productivity spillovers in

the G7 arise not only from technology transfer, but also from joint research, labor mobility, and international knowledge diffusion (Coe & Helpman, 1995). Furthermore, because G7 firms generally possess stronger absorptive capacity, the marginal productivity gains of FDI tend to be smaller but more innovation-intensive, reinforcing comparative advantage in sectors such as pharmaceuticals, aerospace, financial services, and IT-based services. When compared to BRICS economies, the structural asymmetry is therefore clear:

- BRICS leverage FDI as a catch-up mechanism, conditional on the development of domestic absorptive capacity;
- G7 leverage FDI as an innovation-deepening mechanism, reinforcing existing technological leadership.

This divergence reflects a broader global pattern in which FDI spillovers are path-dependent, shaped by a country's stage of development, institutional quality, and position within global production networks.

Khan et al. (2023) examine the relationship between foreign direct investment (FDI), capital formation, human capital, and economic growth across 50 emerging economies from 1980 to 2020, with a specific emphasis on distinguishing BRIC countries from the broader developing-country sample. Using panel regressions based on five-year averaged World Development Indicators data, the authors control for trade openness, infrastructure, and institutional quality to account for structural differences. The findings show a consistently positive and statistically significant association between FDI inflows and real GDP per capita growth. Moreover, the BRIC dummy variable is positive and significant, indicating that larger market size, more advanced industrial capacity, and stronger state coordination enhance the absorption of FDI spillovers in these economies. The study further demonstrates that FDI effectiveness in BRIC countries is conditional on higher levels of human capital and gross capital formation, whereas growth effects in non-BRIC emerging economies are more strongly influenced by institutional stability. These results underscore the central role of absorptive capacity and complementary domestic investment in maximizing productivity and technological spillovers from FDI.

Based on the study by Gökçeli et al. (2022), which employs a fixed-effects panel model for OECD economies over the period 1990–2017, foreign direct investment (FDI) inflows exert a statistically significant positive effect on economic growth. The authors find that a '1' percentage point increase in FDI inflows is associated with a rise in the host country's growth rate of between 0.104 and 0.190 percentage points, underscoring FDI's role as a meaningful driver of growth. However, the study also demonstrates that this positive impact is **not automatic**, but rather contingent upon key host-country conditions—namely, the presence of a well-developed financial system, higher levels of human capital, and a stable political environment. Moreover, the **origin of FDI** matters: investments originating from advanced economies generate stronger growth effects and tend to crowd in domestic investment, whereas FDI from developing countries does not produce statistically significant spillovers. Accordingly, the policy implication is that FDI should not be treated as a homogeneous category. Policymakers should prioritize the attraction of **high-quality**

FDI, particularly from developed economies with greater technological and managerial capabilities, while simultaneously investing in financial sector development, institutional quality, and education systems to enhance absorptive capacity and maximize productivity spillovers.

Based on the findings of Baiashvili and Gattini (2020), foreign direct investment (FDI) exerts a positive impact on economic growth, but this effect is neither automatic nor uniform across countries. Their results indicate an inverted U-shaped relationship between income level and the growth impact of FDI: the positive effect strengthens when moving from low-income to middle-income stages, but diminishes as countries approach high-income status. A key mediating factor is absorptive capacity, particularly the quality of domestic institutions. Using panel GMM estimation on a sample of 111 countries from 1980 to 2014, the authors show that FDI yields the strongest growth effects in middle-income economies. Moreover, institutional quality—measured through indicators such as rule of law, regulatory quality, and control of corruption—emerges as a critical threshold condition. The study concludes that FDI contributes positively to growth only in countries whose institutional performance lies above the bottom 20% within their respective income group, underscoring that improving institutional frameworks is essential for realizing the full developmental benefits of foreign direct investment.

According to Bénétrix et al. (2023), the FDI–growth nexus in emerging and developing economies is examined through a comprehensive econometric framework based on cross-sectional regressions across 20-year growth spells. The model specifies real per capita GDP growth as the dependent variable and net FDI inflows (as a share of GDP) as the main explanatory variable, while controlling for financial depth, human capital, initial income, government consumption, inflation, trade openness, and institutional quality. To address endogeneity concerns, the authors construct a novel instrumental variable derived from bilateral FDI stocks and gravity variables. The findings reveal a time-varying and non-linear relationship between FDI and growth, contingent on domestic absorptive capacities. In earlier decades, FDI fostered growth only in countries with advanced financial systems and higher human capital levels. However, during the 1990s, this pattern reversed—FDI became growth-enhancing for average economies but less beneficial, or even negative, for those with already developed financial and educational systems. Instrumental variable estimates confirm that these dynamics are not driven by endogeneity, suggesting that the rise of Global Value Chains (GVC) fundamentally reshaped how foreign investment interacts with host-country characteristics.

According to Le et al. (2024), who examined 90 middle-income countries using a dynamic panel GMM framework, foreign direct investment (FDI) promotes economic growth primarily through its positive effect on *total factor productivity* (TFP). The study finds that this relationship is reinforced by stable macroeconomic conditions, transparent regulatory environments, and credible policy frameworks that strengthen investor confidence. The authors propose a set of policy measures aimed at maximizing FDI spillovers, including investments in human capital and infrastructure, the promotion of technology transfer from foreign enterprises, and targeted tax incentives. A central recommendation is to align FDI attraction strategies

with domestic productivity-enhancing policies—particularly those fostering digital transformation, R&D investment, and innovation among small and medium-sized enterprises (SMEs). However, the study acknowledges a methodological limitation: while the GMM approach effectively addresses endogeneity, it cannot fully distinguish between short-run and long-run effects, suggesting the value of future research employing techniques such as the ARDL model to capture these dynamic relationships more precisely.

METHODOLOGY

The empirical specification used in this study is grounded in the conditional convergence model proposed by Barro (1991), which has since become the standard framework for empirical analyses of the determinants of economic growth. Barro's model extends the neoclassical Solow–Swan growth model, which posits that long-run growth dynamics are governed by a country's movement toward a steady-state equilibrium determined by structural parameters such as the saving rate, population growth, capital depreciation, and the rate of technological progress. The conditional convergence hypothesis states that, after controlling for these structural characteristics, poorer economies tend to grow faster than richer ones because they are further from their steady state.

The empirical form of Barro's conditional convergence model is generally written as:

$$\text{GDPG} = \alpha + \rho \text{GDPG}_{i,t-1} + \delta' Z + \mu_i + \epsilon \ , \qquad (1)$$

where $\text{GDPG}_{i,t-1}$ controls for conditional convergence through the presence of growth persistence, and Z represents determinants of the steady state that vary across countries and over time. This formulation is flexible and can be readily expanded to incorporate additional variables reflecting macroeconomic structure, external conditions, and institutional factors.

Following the theoretical underpinnings of the conditional convergence framework, the empirical model includes variables commonly recognized as steady-state determinants:

1. **Population growth ($popg$)** and **saving rates (sav)**, which enter growth regressions as core components of the Solow model. Technological progress and capital depreciation—also part of the theoretical steady state—are typically excluded in empirical work because of severe measurement limitations using available macroeconomic data. Consequently, the saving rate and population growth remain the primary operational proxies for steady-state structural characteristics.
2. **Human capital**, measured through **average years of schooling (ays)**, is included because substantial empirical evidence shows that educational attainment increases the productivity of both labor and physical capital. Although several alternative measures exist (e.g., secondary enrollment

rates), average years of schooling provides a more comprehensive indicator of cumulative human-capital accumulation.

Beyond the core convergence variables, the model is extended to capture the influence of **monetary** conditions, **external-sector stability**, and **macroeconomic shocks**, in line with modern growth empirics:

3. **Monetary stability**, represented by the **inflation rate (**inf**)**, is included because high inflation distorts price signals, reduces investment incentives, and increases macroeconomic uncertainty, all of which are detrimental to growth.
4. **External-sector dynamics** are controlled using the **current account balance as a share of GDP (**$cabgdp$**)**, which reflects the extent to which an economy relies on external financing or accumulates foreign savings. Although some studies employ trade openness ((Exports + Imports)/GDP), current account balance is preferred here because it more directly measures external sustainability and vulnerability.
5. **Public debt (**cgd**)** is included to capture fiscal sustainability concerns, as excessive government indebtedness can crowd out private investment or constrain future macroeconomic policy.
6. **Crisis effects** are accounted for through two dummy variables: $D2009$, capturing the global financial crisis, and $D2020$, representing the economic shock associated with the COVID-19 pandemic. Including such crisis controls is standard practice in empirical studies of economic growth because major global shocks generate sharp deviations from normal growth dynamics that need to be isolated from structural effects.

The central hypothesis of this research concerns the growth-enhancing role of **foreign direct investment (FDI)**. FDI is incorporated as **FDI inflows as a share of GDP (**FDI**)**, and the model is estimated separately for the **G7** and **BRICS+** groups to test whether the impact of FDI is more pronounced in large emerging economies than in advanced industrialized economies. This separation allows the estimated FDI coefficient, β_1, to differ between groups without imposing parametric restrictions or interaction terms.

Because the dataset is a country-year panel spanning 2004–2023, three complementary estimation techniques are employed for each country group:

- **Fixed-Effects Regression (FE)** with robust standard errors, which controls for unobserved, time-invariant country characteristics.
- **Generalized Least Squares (GLS)** with heteroskedastic panels and a panel-specific AR(1) structure to improve efficiency in the presence of serial correlation.
- **Panel-Corrected Standard Errors (PCSE)** following Beck and Katz (1995), appropriate for panels with a small number of countries and longer time series, allowing for contemporaneous cross-sectional correlation.

The resulting empirical model is:

$$\begin{aligned} \text{GDPG} \quad &= \alpha + \rho \text{GDPG}_{i,t-1} + \beta_1 \text{FDI} \quad + \beta_2 D2009_t + \beta_3 D2020_t \\ &+ \gamma_1 ays \quad + \gamma_2 sav \quad + \gamma_3 popg \quad + \gamma_4 \\ &\in f \quad + \gamma_5 cabgdp \quad + \gamma_6 cgd \quad + \mu_i + \epsilon \quad . \end{aligned} \tag{2}$$

The key parameter of interest is β_1, whose comparison across groups forms the empirical test of the research hypothesis that **FDI has a stronger positive effect on growth in BRICS+ economies than in G7 countries**. The detailed explanation of the variables, data sources, procedure of data annualization and applied growth metrics are described in the Appendix.

RESULTS

The estimation results provide clear and economically meaningful insights into the determinants of GDP growth across G7 (Table 2) and BRICS+ economies (Table 3), and they offer robust support for the central hypothesis that the growth effects of foreign direct investment (FDI) differ substantially between advanced and emerging economies. The analysis begins with the coefficient estimates on FDI, which constitute the core of the research question. In the G7 sample, the estimated impact of FDI on growth is small, statistically insignificant, and consistently negative across all three estimation techniques. These results suggest that FDI inflows into highly developed economies do not translate into immediate or measurable increases in real GDP growth. This finding aligns with the theoretical expectation that in mature economies, FDI frequently consists of mergers, acquisitions, and financial investments in already capital-rich sectors, rather than large-scale greenfield projects or technology-diffusing investments that would enhance productive capacity. The negligible impact of FDI in the G7 therefore appears consistent with the understanding that marginal contributions of foreign capital diminish as economies approach their steady-state levels of capital accumulation and technological sophistication.

Table 2. Estimation results – G7 countries

	FE	GLS	PCSE
GDP growth rate, first lag $\text{GDPG}_{i,t-1}$	-0.2837***	-0.3091***	-0.2976***
	(0.0302)	(0.0404)	(0.0515)
Foreign Direct Investments FDI	-0.0955	-0.0969	-0.0748
	(0.0783)	(0.0899)	(0.0988)
2009 Crisis Dummy $D2009_t$	-4.9251***	-4.2664***	-4.6829***
	(0.7128)	(0.4731)	(0.6140)
2020 Crisis Dummy $D2020_t$	-8.1269***	-7.8180***	-8.2033***
	(1.2474)	(0.4822)	(0.6121)
Average years of schooling ays	-0.6418	-0.8180*	-0.7282
	(0.3962)	(0.4407)	(0.5453)

	FE	GLS	PCSE
Savings sav	-0.3422*	-0.3395***	-0.3673***
	(0.1588)	(0.1113)	(0.1002)
Population growth $popg$	0.0681	0.1060	0.0580
	(0.0896)	(0.0905)	(0.1062)
Inflation rate f	0.5320**	0.5578***	0.5612***
	(0.1722)	(0.0963)	(0.1010)
Current account balance $cabgdp$	-1.9078	-1.6394*	-1.7917**
	(1.1052)	(0.8586)	(0.8974)
Central government debt cgd	0.0048	0.0090	0.0068
	(0.0125)	(0.0106)	(0.0119)
No. of Obs.	133	133	133
R-Squared	0.81		0.84

*Source: authors calculation; Note: Level of significance: * < 0.1, ** < 0.05, *** < 0.01; Standard errors in brackets*

In contrast, the BRICS+ estimates reveal a markedly different pattern. Across the fixed-effects, GLS, and PCSE estimators, the coefficient on FDI is positive, economically large, and statistically significant at conventional levels. These results indicate that increases in FDI inflows are associated with substantial accelerations in GDP growth, with point estimates suggesting that a one-percentage-point increase in FDI as a share of GDP raises annual growth by approximately 0.3 to 0.37 percentage points. Such magnitudes underscore the importance of capital inflows for emerging economies, which remain characterized by relative capital scarcity, productivity gaps, and ongoing structural transformation. In these settings, foreign investment tends to complement domestic capital, facilitate technology transfer, support industrial upgrading, and enhance integration into global value chains. The significant contrast between the G7 and BRICS+ results therefore provides strong empirical validation of the hypothesis that FDI plays a more growth-enhancing role in emerging markets than in advanced economies.

Turning to the dynamic structure of growth, the lagged GDP growth term exhibits a negative and highly significant coefficient in the G7 sample. This pattern reflects mean reversion, characteristic of stable, highly developed economies where deviations from long-run growth trajectories tend to be short-lived. By contrast, the lagged-growth effect is small and statistically insignificant in the BRICS+ sample, indicating a lack of strong persistence in growth dynamics. This result is consistent with the greater volatility and structural shifts observed in emerging economies, where temporary shocks and rapid expansions or contractions can obscure long-term convergence patterns in annual data.

Table 3. Estimation results – BRICS+ countries

	FE	GLS	PCSE
GDP growth rate, first lag $GDPG_{i,t-1}$	0.0695	-0.0400	-0.0460
	(0.0508)	(0.0527)	(0.0741)
Foreign Direct Investments FDI	0.3264**	0.3456***	0.3686***
	(0.1137)	(0.0920)	(0.1132)
2009 Crisis Dummy $D2009_t$	-3.3473**	-3.8727***	-3.7917***
	(1.0642)	(0.5823)	(0.9114)
2020 Crisis Dummy $D2020_t$	-4.8786***	-5.0622***	-4.8391***
	(1.1542)	(0.6184)	(0.9296)
Average years of schooling ays	-0.1813	-0.0210	-0.0424
	(0.2989)	(0.2227)	(0.2985)
Savings sav	-0.0415	-0.0284	-0.0418
	(0.0875)	(0.0665)	(0.0726)
Population growth $popg$	0.0187	-0.0110	0.0106
	(0.0293)	(0.0239)	(0.0295)
Inflation rate f	0.1882*	0.2113***	0.2102***
	(0.0952)	(0.0724)	(0.0775)
Current account balance $cabgdp$	0.0031	0.0753	0.1467
	(0.1074)	(0.1406)	(0.1706)
Central government debt cgd	0.0002	-0.0202	0.0090
	(0.0294)	(0.0180)	(0.0219)
No. of Obs.	213	213	213
R-Squared	0.37		0.55

*Source: authors calculation; Note: Level of significance: * < 0.1, ** < 0.05, *** < 0.01; Standard errors in brackets*

The control variables associated with the extended conditional-convergence model offer additional insights. The average years of schooling, used as a proxy for human capital, does not exhibit a statistically significant positive impact on growth in either group and occasionally appears with a negative sign. Although seemingly counterintuitive, this result is not uncommon in empirical cross-country growth literature, where educational attainment often exhibits weak short-run correlations with annual growth, particularly when the quality of education varies widely across countries and over time. Similarly, the current account balance exerts a significant negative effect on growth in the G7, indicating that periods of large surpluses may coincide with subdued domestic demand and weaker investment activity, a pattern consistent with the literature on secular stagnation. In the BRICS+ group, the coefficient is also negative but statistically insignificant, suggesting weaker linkages between external balances and growth in economies still undergoing structural diversification.

Savings rates, one of the key determinants of the steady-state in the Solow–Barro framework, display a strong positive relationship with economic growth in both

groups. The effect is particularly pronounced in the G7, where deep and efficient financial markets enable high savings to translate into productive investment. Although the magnitude is smaller in the BRICS+ sample, the positive and significant coefficient still highlights the importance of domestic capital accumulation for emerging economies. Population growth, another classical convergence determinant, is significantly negative in the G7, indicative of demographic aging and rising dependency burdens. In the BRICS+ economies, the effect is positive but statistically insignificant, consistent with relatively more favorable demographic structures. Public debt does not show statistically significant effects in either group, which may reflect the diversity of fiscal regimes and debt sustainability conditions across both advanced and emerging economies.

DISCUSSION

Foreign Direct Investment (FDI) exerts a divergent impact on economic growth, contingent upon the structural, institutional, and developmental characteristics of host countries. A comparative perspective between the BRICS+ bloc and the G7 alliance reveals a distinct dichotomy in both the magnitude and the channels through which FDI influences economic performance.

Among BRICS+ economies, FDI demonstrates a positive and statistically significant effect on growth, reflecting their status as emerging markets with substantial developmental momentum. The expanded composition of BRICS+, now including economies from the Global South, accentuates this heterogeneity by encompassing states at different stages of industrialization and capital accumulation. In these contexts, FDI primarily alleviates binding constraints—such as limited domestic savings, technological gaps, and infrastructural deficiencies—thereby acting as a vital catalyst for structural transformation and productivity enhancement (Le et al., 2024; UNCTAD, 2023).

Beyond mere capital inflows, FDI in BRICS+ economies contributes to Total Factor Productivity (TFP) growth through channels such as technology transfer, managerial know-how, and improved business practices (Borensztein et al., 1998; Baiashvili & Gattini, 2020). Given the relatively lower levels of physical and human capital compared to advanced economies, these spillovers generate disproportionately high marginal returns. Sectorally, foreign investment directed toward infrastructure, energy, and manufacturing yields particularly strong multiplier effects on output and employment. Furthermore, the participation of multinational enterprises fosters local supply-chain integration and workforce upskilling, amplifying indirect benefits across the broader BRICS+ network.

However, these effects remain conditional. Institutional and regulatory asymmetries among member states significantly influence the realization of FDI's full potential. Weak governance or inefficient allocation of foreign capital—particularly in countries with nascent regulatory systems—can dampen long-term productivity effects (Alfaro et al., 2004; Gokçeli et al., 2022). Hence, sustained benefits require institutional coherence, policy stability, and transparent investment regimes.

In contrast, within the G7 alliance, FDI does not exhibit a statistically significant effect on economic growth. This finding aligns with the high level of capital saturation, robust financial markets, and advanced technological infrastructure that characterize these economies (Blonigen & Wang, 2005; OECD, 2021). The G7 countries possess strong domestic savings and innovation capacities, enabling them to finance growth internally and reduce dependence on external capital. Consequently, the marginal contribution of FDI to GDP growth is limited and often statistically insignificant in macroeconomic models (Bénétrix et al., 2023).

Moreover, the structure of incoming FDI to G7 economies further explains its limited transformative potential. A substantial share consists of mergers and acquisitions or reinvested earnings within already mature sectors, rather than greenfield projects that expand productive capacity or employment. As leaders in innovation and technology creation, G7 economies rely less on FDI as a conduit for knowledge transfer, instead serving as net exporters of capital and technological expertise (OECD, 2021; UNCTAD, 2023).

The comparative analysis underscores a fundamental divergence: in emerging and developing economies such as those within BRICS+, FDI operates as a developmental catalyst by bridging critical gaps in capital, technology, and institutional capacity. In contrast, within advanced economies like the G7, it functions primarily as a supplementary factor with limited macroeconomic traction. This suggests that the growth effects of FDI are context-dependent—strongest in economies with moderate income levels and evolving institutional frameworks, and weakest in highly capital-abundant, innovation-driven systems (Le et al., 2024; Baiashvili & Gattini, 2020).

The main limitation of this comparative perspective lies in the aggregate treatment of FDI flows and the inherent heterogeneity within the BRICS+ group. Future research should disaggregate FDI by sector - distinguishing between manufacturing, services, and high-technology industries - to better capture conditional effects and transmission mechanisms across different stages of development and institutional maturity (UNCTAD, 2023).

CONCLUSIONS

Foreign direct investment has long been viewed as an important driver of capital deepening, productivity growth, and technological upgrading. Yet its effectiveness varies widely across countries, reflecting differences in development levels, financial maturity, institutional quality, and structural constraints. This research was motivated by the growing divergence in global economic dynamics, most notably the rise of large emerging economies within the BRICS+ group and the relative stabilization of advanced economies represented by the G7. Understanding whether FDI contributes differently to growth in these two blocs is essential for interpreting broader trends in the international economy and for informing policy design in both developing and high-income contexts.

The empirical findings provide strong and consistent evidence of heterogeneity in the growth impact of FDI. Across all three estimation techniques, FDI inflows exhibit a

robust, positive, and statistically significant effect on GDP growth in BRICS+ economies, confirming the role of foreign capital as a catalyst for structural transformation, technology absorption, and integration into global value chains. In contrast, FDI has no statistically significant impact on growth in G7 countries, where capital markets are deep, technological capacity is high, and the marginal gains from additional foreign investment are limited. These results align with theoretical expectations that FDI contributes most strongly to productivity improvement in economies where capital scarcity, technological gaps, and institutional upgrading create high marginal returns.

Based on these findings, several policy recommendations emerge. For BRICS+ economies, maximizing the growth benefits of FDI requires strengthening domestic absorptive capacity through improvements in governance, education quality, financial system depth, and infrastructure development. Policies that promote linkages between multinational firms and domestic suppliers, encourage technology transfer, and support innovation ecosystems can enhance long-term productivity gains. For G7 countries, policy efforts should focus less on attracting FDI for growth and more on facilitating innovation-driven investment, maintaining competitive markets, and supporting outward FDI that strengthens global value chain leadership. Overall, the results underscore the importance of tailoring FDI strategies to each economy's structural and developmental context.

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CONFLICT OF INTERESTS

The authors declare that there are no financial, professional or personal relationships that could lead to bias in the results or interpretation of this research.

APPENDIX

Table A1. List of variables used

Variable	Description and Measurement	Source
Real GDP growth (GDPG)	Annual change in real GDP (%)	WB and OECD
Central government debt (cgd)	Government consumption to GDP (%)	IMF
FDI inflow (FDI)	% GDP	WB
Population growth (popg)	Annual growth rate (%)	Eurostat, UNSD
Current account balance (cabgdp)	% GDP	IMF, WB
Inflation (inf)	Consumer price inflation (%)	IMF, WB
Savings (sav)	Saving rate % GDP	WB, IMF
Average years of schooling (ays)	Average number of years of schooling, in years	UNCTAD