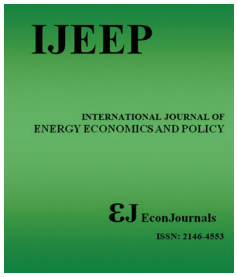

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Foreign Direct Investment and Macroeconomic Stability in Resource-Dependent Emerging Economies

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ABSTRACT

This paper investigates the impact of foreign direct investment (FDI) on long-term growth and macroeconomic stability in 24 emerging economies dependent on natural resources, namely current and previous members of OPEC+, from 1996 to 2023. Using fixed-effects and dynamic Difference GMM estimators, the analysis shows that FDI's growth effects are not immediate but materialise with a 1-year lag, reflecting the time required for capital absorption and technology diffusion. A major contribution is the examination of the interaction between FDI and natural resource rents. Results reveal that this interaction strengthens as resource dependence increases, indicating that resource abundance amplifies the productivity of foreign capital. Economically, this suggests that in highly resource-dependent economies, FDI complements resource revenues by financing diversification, enhancing absorptive capacity, and supporting long-run growth. Strong government effectiveness further magnifies these gains and conditions the stability outcomes. The macroeconomic stability analysis reveals an important asymmetry: While FDI promotes growth, it does not directly stabilise inflation, unemployment, or the current account balance; instead, prior macroeconomic stability and institutional quality attract FDI. These findings offer policy-relevant insights into leveraging FDI for sustainable growth in resource-rich emerging markets and suggest that institutions and macroeconomic discipline should be treated as preconditions rather than expected by-products of foreign investment.

Keywords: Foreign Direct Investment, Natural Resource Rents, Resource Curse, Economic Growth, Macroeconomic Stability, Dynamic Panel GMM, OPEC+
JEL Classifications: F21, F43, O13, O43, Q32, Q33

1. INTRODUCTION

Foreign Direct Investment (FDI) has long been viewed as one of the most powerful channels through which globalisation translates into growth and development opportunities. For emerging economies, FDI brings not only financial resources but also technology transfer, managerial know-how, and integration into global value chains. At the same time, the role of natural resources has been central to debates about economic development. While resource abundance can generate revenues and attract foreign investors, the resource-curse literature highlights how dependence on volatile commodity prices can undermine long-term growth, distort incentives, and weaken institutions. Against this backdrop, emerging economies that are heavily dependent on natural resources face both unique opportunities and acute challenges in leveraging FDI for sustainable development.

The existing literature provides no consensus on whether FDI unambiguously supports growth in such settings. Early contributions such as Borensztein et al. (1998) suggested that FDI contributes positively to growth when host countries possess sufficient absorptive capacity. Later studies, however, questioned whether this relationship is robust once endogeneity and institutional weaknesses are taken into account (Carkovic and Levine, 2005). At the same time, the natural-resource–growth nexus remains contested. While some studies emphasise resource rents as a driver of fiscal revenues and investment (van der Ploeg, 2011), others argue that dependence on resources exposes

economies to volatility and governance challenges (Sachs and Warner, 2001; Mehlum et al., 2006). Very few contributions analyse these dynamics together, that is, whether FDI enhances growth in resource-dependent emerging economies, and whether this effect is conditioned by institutional quality and macroeconomic stability.

This lack of consensus provides the starting point for this paper. By focusing explicitly on natural-resource-dependent emerging economies, I evaluate whether FDI inflows promote long-run growth and stability, or whether their effects are weakened by volatility and institutional constraints. This focus is not only of academic interest but also of pressing policy relevance. Many resource exporters, from Saudi Arabia and Nigeria to Angola and Venezuela, struggle with the dual challenge of diversifying their economies while sustaining growth in the face of volatile commodity prices. For such countries, understanding whether and how FDI supports growth and stability is essential for designing effective development strategies.

FDI is broadly understood as a cross-border investment aimed at establishing a lasting interest and exerting a significant degree of influence over a foreign enterprise. The International Monetary Fund (2009), in its Balance of Payments and International Investment Position Manual (BPM6), defines FDI as an investment where a resident of one economy acquires at least 10% of the voting power in a foreign enterprise. This definition covers equity capital, reinvested earnings, and intra-company loans. The OECD (2008) Benchmark Definition of FDI (BD4) takes a similar stance, while UNCTAD (2023) and the World Bank (2023) align with these frameworks. Multinational enterprises typically engage in FDI for four main purposes: Natural-resource-seeking, market-seeking, efficiency-seeking, and strategic-asset-seeking (Dunning and Lundan, 2008). Beyond capital, FDI brings benefits to host countries through knowledge and technology transfer (Wang, 1992), employment effects and wage premia (Saurav et al., 2020), and contributions to government revenues (Camara, 2023).

The definition of a natural-resource-dependent country varies across international organisations. According to the IMF, a country is considered resource-dependent if revenues from natural resources exceed 20% of total fiscal revenue or if natural resource exports account for more than 20% of total exports. The World Bank classifies economies with natural resource rents above 10% of GDP as resource dependent, while UNCTAD identifies resource-dependent economies as those where at least 60% of total exports consist of commodities such as fuels, minerals, or agricultural raw materials. The UNDP (2017) sets its threshold at natural resources representing more than 25% of exports or fiscal revenues. The IMF, World Bank, OECD, and academic literature similarly use the term "emerging economies" to describe countries with lower per capita income, limited export diversification, and weaker integration into global financial systems, but undergoing structural transformation, industrialisation, and increasing integration into global markets.

Against this background, this paper asks four research questions:

1. Does FDI promote GDP growth in resource-dependent emerging economies, and is the effect immediate or lagged?
2. Do natural resources condition the productivity of FDI, acting as either a catalyst or a constraint for growth?
3. Does government effectiveness enhance the ability of FDI to generate growth in those economies?
4. Does FDI contribute to macroeconomic stability, particularly in relation to inflation, unemployment, and the current account balance?

The main contribution of this paper lies in combining three strands of literature — the FDI–growth nexus, the resource-curse debate, and macroeconomic stability in emerging economies — into a unified empirical framework. By applying panel data techniques, including Fixed Effects (FE) and dynamic Generalized Method of Moments (GMM) estimation, I provide evidence that bridges both the optimistic and sceptical views of FDI. The results suggest that FDI supports growth, but primarily with a lag, and that its productivity is magnified in the presence of strong institutions and resource abundance. At the same time, FDI is not inherently stabilising: its effects on inflation, unemployment, and the external balance depend heavily on the broader macro-institutional environment.

The remainder of the paper is organised as follows. Section 2 reviews the main literature on FDI, natural resources, and growth in emerging economies. Section 3 outlines the data, variables, and econometric framework. Section 4 presents the empirical results, including robustness checks and extensions. Section 5 concludes with policy implications, limitations, and avenues for future research.

2. LITERATURE REVIEW

This section reviews the theoretical and empirical foundations that underpin the relationship between FDI, natural-resource dependence, and macroeconomic stability in emerging economies. The discussion proceeds in two stages. First, it outlines the theoretical underpinnings of FDI and output growth, the dynamics of natural-resource dependence, and the implications for stability. Second, it reviews the empirical literature, mapping the evidence into three strands: Studies that find positive effects, those that identify negative effects, and those that stress conditional outcomes.

2.1. Theoretical Foundation

2.1.1. FDI and output growth

According to Solow (1956), output depends mainly on capital accumulation, labour growth, and technological change. Within this framework, FDI can affect output through two channels. First, it contributes directly to capital accumulation by increasing the investment stock. Second, it facilitates technology transfer, since in the Solow model sustained growth arises only from technological progress, treated as exogenous. A key limitation of Solow's framework is that it oversimplifies reality: İt assumes homogenous capital and labour, abstracts from institutional differences, and treats technology as exogenous. In practice, growth is influenced by human capital, governance, innovation, and integration into the global economy.

Endogenous growth theories advanced by Romer (1986) and Lucas (1988) overcome this limitation by endogenising technological change and human capital. Romer (1986) stresses knowledge spillovers embodied in capital investment; these externalities allow for sustained growth at the aggregate level. Lucas (1988) places human capital at the centre, arguing that sustained long-run growth is possible through continuous investment in education and learning. These theories imply that FDI can support growth if host economies possess the absorptive capacity to translate foreign capital into knowledge and skills. Wang (1992) highlights that this channel is stronger where domestic firms are capable of absorbing and adapting external technologies. In resource-rich emerging economies, where domestic capital formation is often constrained by volatile revenues, FDI represents a crucial external source of capital and technology.

2.1.2. Resource dependence and macroeconomic stability

The resource curse literature, pioneered by Sachs and Warner (2001), argues that resource-abundant countries grow more slowly than resource-scarce ones. Their cross-country regressions for 1970-1990 found a negative coefficient on resource exports, supporting the "curse" hypothesis. Auty (2001) expanded this, emphasising Dutch disease, where booming resource sectors crowd out tradables, and chronic underinvestment in education limits long-term growth. Mehlum et al. (2006) reframed the debate by highlighting institutions: They conclude that resources harm growth only in "grabber-friendly" institutional environments, but support prosperity in "producer-friendly" ones. Tornell and Lane (1999) introduce the "voracity effect," showing how windfalls generate procyclical redistribution that lowers growth. Van der Ploeg (2011) further stresses that commodity price volatility worsens macroeconomic instability, undermining governments' ability to pursue countercyclical policies.

Taken together, these theories suggest that while FDI promises capital, technology, and jobs, resource rents generate volatility and procyclicality. The question is whether FDI behaves like resource rents, exacerbating instability, or whether it offers a stabilising inflow that can anchor long-term prosperity in resource-dependent emerging economies.

2.2. Empirical Literature

2.2.1. FDI and economic growth

A large body of empirical work highlights the potential of FDI to stimulate long-run economic growth in developing and emerging economies. Borensztein et al. (1998) provide one of the most influential contributions, using cross-country data for 69 developing countries from 1970 to 1989. They find that FDI enhances growth by transferring technology and capital, but only when host economies possess a threshold level of human capital. Alfaro et al. (2004), using panel data and interaction terms, showed that FDI contributes positively to growth when domestic financial markets are well developed. Hansen and Rand (2006), applying a panel Vector Autoregression (VAR) to 31 developing countries, documented strong bi-directional causality between FDI and GDP, with FDI playing a role similar to domestic investment in raising income levels. Sahu (2020) confirmed that FDI inflows have a statistically significant and positive effect on GDP, particularly in Asian and African economies, while Udi et al. (2020) find for South Africa that FDI both directly stimulates growth and indirectly supports it through industrialisation and resource rents.

Other studies reach more cautious or even adverse conclusions. Majumder and Roy (2023) examine 45 developing economies over 1991-2019 and find that FDI supported growth during 1991-2004, but the relationship turned negative thereafter. Michael (2018), focusing on Sub-Saharan Africa, reports that FDI inflows are associated with lower per capita GDP growth, attributing this to weak absorptive capacity, poor infrastructure, and governance challenges. Demir and Lee (2022) study a broad panel of countries and find that while FDI can raise income levels in the short term, it does not generate lasting improvements in growth rates. Wu et al. (2020), using Chinese city-level data, identify a non-linear, inverted U-shaped relationship: moderate inflows promote growth, but excessive FDI undermines fiscal sustainability.

A third strand of literature emphasises that the growth impact of FDI is highly conditional on structural and institutional factors. Shittu et al. (2021) analyse Middle East and North Africa (MENA) economies and find that FDI contributes to growth only in the short run unless complemented by human capital and institutional quality. Yimer (2022) offers a comparative analysis of resource-rich and resource-scarce African economies, showing that FDI fosters growth only in the latter. Bergougui and Murshed (2023), examining 13 MENA countries, highlight the importance of sectoral composition: service-sector FDI generates positive spillovers, while primary-sector inflows often harm growth. Sabir et al. (2019) underline the role of governance, showing that institutional quality strongly determines the volume and productivity of FDI inflows. Methodologically, many of these studies employ fixed or random effects models, or VAR frameworks, which are vulnerable to endogeneity bias. By contrast, this paper applies Difference GMM (Arellano and Bond, 1991), which explicitly addresses simultaneity between FDI and growth using lagged instruments.

2.2.2. Natural resources and economic growth

Empirical studies often confirm the predictions of the resource-curse literature. Sachs and Warner (2001) show that resource-rich countries grew more slowly between 1970 and 1990, controlling for openness, investment, and institutions. Dramani et al. (2022) focus on Sub-Saharan Africa and find that resource rents below 6% of GDP reduce growth, with forest rents particularly harmful. Hayat and Tahir (2021) and Kirat (2024) stress that volatility in natural resource rents undermines long-run growth, especially in economies lacking fiscal buffers. These results echo the theoretical channels of Dutch disease and the voracity effect.

Other studies emphasise the potential of resource wealth to support development when well managed. Topçu et al. (2020) show that natural resources contribute positively to growth in middle- and high-income countries. Aljarallah (2020) highlights how Gulf countries have leveraged resource rents to finance infrastructure and social spending. Aslan and Altinoz (2021), Yang et al. (2021), and Li and Du (2024) provide evidence that globalisation, financial innovation, and sound policy frameworks

can convert natural resources into a source of resilience rather than vulnerability. Institutions again emerge as the decisive factor: Mehlum et al. (2006) demonstrate that resources harm growth under weak institutions but support it under strong ones, while Moshiri and Hayati (2017) and Nzié and Pepeah (2022) confirm that institutional quality determines whether resources become a curse or a blessing. Tabash et al. (2022) add that economic complexity also matters.

2.2.3. FDI, resources, and stability

While FDI and resources have been widely studied in relation to growth, their impact on macroeconomic stability remains underexplored. Tornell and Lane (1999) show that resource booms trigger procyclical redistribution, destabilising growth. Van der Ploeg (2011) documents how dependence on volatile resource revenues translates into fluctuations in inflation, fiscal balances, and exchange rates. The International Monetary Fund (2012) emphasises that stability is a precondition for sustainable development in resource-rich economies. Evidence on FDI and stability is more fragmented. Saurav et al. (2020) demonstrate that FDI can improve employment and wages, but only when governance is supportive. Camara (2023) finds that FDI inflows boost tax revenues, though mainly in non-resource exporters. UNCTAD (2021) warns that FDI inflows often involve reinvested earnings and intra-company debt that generate future outflows, posing risks for the current account balance. Few studies bring these dimensions together systematically — the gap this paper seeks to fill.

2.3. Gaps in the Literature

The review highlights three gaps. First, studies on FDI and growth produce mixed results, often due to differences in absorptive capacity and methodology. Second, the resource curse debate remains unresolved, with outcomes conditional on institutions, policy, and resource type. Third, little work integrates FDI, resources, and macroeconomic stability in one framework. Few studies examine whether FDI acts as a stabiliser or destabiliser in resource-dependent emerging economies. This paper builds on these debates by jointly analysing FDI, natural resources, and macroeconomic stability in a panel of 24 resource-dependent emerging economies from 1996 to 2023, applying dynamic panel GMM to address endogeneity.

3. DATA AND EMPİRİCAL STRATEGY

This section sets out the data sources, sample, variables, and econometric strategy. The objective is to establish an identification approach that allows the effects of FDI on economic growth and macroeconomic stability in natural-resource-dependent emerging economies to be quantified credibly.

3.1. Data Sources

The dataset is drawn entirely from reputable international organisations to ensure comparability and reliability across countries and over time. The World Bank World Development Indicators (WDI, 2023) provide GDP growth, FDI inflows, inflation (CPI), natural resource rents, government consumption, unemployment, and official exchange rates. The IMF supplies current account balances and supplementary macro-financial data. Institutional quality is measured using the Worldwide Governance Indicators (Kaufmann et al., 2010) — specifically the government effectiveness index. These sources are widely adopted in the empirical literature, providing a strong foundation for robust analysis.

3.2. Sample and Coverage

The dataset is a balanced panel of 24 natural-resource-dependent emerging economies over the period 1996-2023, with a main focus on OPEC+ member states (both current and historical), which together represent the largest group of resource-rich countries globally (Table 1). Libya, South Sudan, and Venezuela are excluded due to the unavailability of consistent data. The OPEC+ sample also includes 8 of the 12 full members and 4 of the 8 observers of the Gas Exporting Countries Forum (GECF). Furthermore, all 24 countries are members of the Common Fund for Commodities (CFC), which underscores the breadth of resource coverage in the sample, ranging from oil and gas to other commodities. Data prior to 1996 could not be incorporated as several sample countries were undergoing political transitions or had not reported data to international organisations. Data for 2024 are excluded since most countries had not released their official statistics at the time of writing.

3.3. Variables

The dataset contains 10 variables. Table 2 provides definitions and justifications for inclusion.

Several adjustments were made to ensure data consistency. WGI governance data, available biennially until 2002, were linearly interpolated to generate values for 1997, 1999, and 2001 using the average of the preceding and following years. CPI values

Table 1: Membership of selected countries in OPEC+, GECF, and CFC

Country	OPEC+	GECF	CFC
Algeria	✓	✓ M	✓
Angola	✓	✓ O	✓
Azerbaijan	✓	✓ O	✓
Bahrain	✓	—	✓
Brazil	✓	—	✓
Brunei Darussalam	✓	—	✓
Congo, Rep.	✓	—	✓
Ecuador	Until 2020	—	✓
Equatorial Guinea	✓	✓ M	✓
Gabon	✓	—	✓
Indonesia	Until 2016	—	✓
Iran, Islamic Rep.	✓	✓ M	✓
Iraq	✓	✓ O	✓
Kazakhstan	✓	✓ O	✓
Kuwait	✓	—	✓
Malaysia	✓	✓ O	✓
Mexico	✓	—	✓
Nigeria	✓	✓ M	✓
Oman	✓	—	✓
Qatar	Until 2019	✓ M	✓
Russian federation	✓	✓ M	✓
Saudi Arabia	✓	—	✓
Sudan	✓	—	✓
United Arab Emirates	✓	✓ O	✓

M: Member, O: Observer in GECF; ✓: Member, —: Non-member or withdrawn (year of withdrawal indicated). Source: OPEC+, GECF, and CFC official membership lists

Table 2: Variable definitions, sources, and motivation

Variable	Source	Definition	Motivation
Natural resource rents (% of GDP)	WDI	Share of total GDP from natural resource rents (oil, gas, minerals).	Captures the level of dependence on natural resources within the selected economies.
GDP growth (annual %)	WDI	Annual percentage change in real GDP.	Main indicator of macroeconomic performance and economic expansion.
GDP per capita growth (annual %)	WDI	Annual percentage growth in GDP divided by population.	Reflects changes in living standards by adjusting GDP growth for population size.
Consumer price ındex (CPI, % annual change)	WDI	Measure of inflation based on average consumer prices.	Captures macroeconomic stability through price levels.
Net FDI ınflows (% of GDP)	WDI	Net foreign direct investment inflows relative to GDP.	Key independent variable for assessing the role of FDI in growth and stability.
General government final consumption (% of GDP)	WDI	Government expenditure on goods and services as % of GDP.	Represents fiscal policy stance and domestic demand contribution.
Current account balance (% of GDP)	IMF	Net exports of goods and services, income, and transfers relative to GDP.	Indicator of external balance and vulnerability to external shocks.
Unemployment (% of labour force)	IMF	Share of the total labour force that is unemployed.	Captures labour market conditions and socio-economic stability.
WGI – Government Effectiveness (index)	WGI	Perception-based governance indicator on quality of public services and policy.	Controls for institutional quality, affecting FDI absorption and macroeconomic performance.
Official exchange rate (LCU per US$)	WDI	Units of local currency per US dollar, period average.	Captures exchange rate regimes and competitiveness in international trade.

WDI: World development ındicators (world bank), IMF: International monetary fund, WGI: Worldwide governance ındicators

for the Republic of Congo (1997-1998) were interpolated due to conflict-related gaps by taking the average of the previous and following years, while UAE inflation (1996-2007) was proxied by the Gulf regional average (Bahrain, Kuwait, Oman, Qatar, and Saudi Arabia, which share comparable macroeconomic, political, and cultural characteristics). Exchange rates were log-transformed into changes to reflect annual depreciation rates. Finally, GDP per capita growth was dropped from the regressions due to near-perfect correlation with GDP growth (0.96).

3.4. Econometric Specification

The starting point is a Fixed-Effects (FE) model, which controls for unobserved country-specific heterogeneity. This is common practice in panel-data studies (Hayat, 2018; Majumder and Roy, 2023; Wu et al., 2020). The FE estimator suffers from two limitations, however. First, the inclusion of lagged dependent variables, needed to capture persistence in GDP growth and stability outcomes, produces biased estimates in short panels (Nickell, 1981). Second, FE cannot adequately address the endogeneity of FDI, which may be simultaneously influenced by growth and stability outcomes or by omitted shocks. To address these issues, I apply a dynamic panel approach using Difference GMM (Arellano and Bond, 1991). This estimator uses lagged levels as instruments for differenced variables, mitigating Nickell bias and simultaneity. It is well suited for the dataset (24 countries, 1996-2023), where N is large and T is moderate. To avoid instrument proliferation, I collapse instruments and restrict the lag depth (2-3), resulting in seven instruments — well below the number of countries (24), supporting credible inference (Roodman, 2009).

The FE (within) estimator (Mundlak, 1978; Hsiao, 2003; Wooldridge, 2010) is specified as:

$$y_{it} = \beta_1 FDI_{it} + \beta_2 NRR_{it} + \gamma' X_{it} + \mu_i + \tau_t + \varepsilon_{it},\ i = 1,\ldots,24;\ t = 1996,\ldots,2023$$

where y_{it} denotes real GDP growth for country i in year t, FDI_{it} is net FDI inflows (as % of GDP), NRR_{it} is natural resource rents (as % of GDP), X_{it} is a vector of control variables (trade openness, investment, CPI, etc.), μ_i are country fixed effects, τ_t are year fixed effects, and ε_{it} is the idiosyncratic error term.

The dynamic panel GMM specification (Arellano and Bond, 1991; Blundell and Bond, 1998) is:

$$y_{it} = \rho\, y_{i,t-1} + \beta_1 FDI_{it} + \beta_2 NRR_{it} + \gamma' X_{it} + \mu_i + \tau_t + \varepsilon_{it},$$

estimated in differences with lagged levels as instruments. The moment conditions are $E[y_{i,t-s}\ \Delta\varepsilon_{it}] = 0$ ($s \geq 2$) and analogously for other endogenous regressors. This specification accounts for persistence in growth (through lagged $y_{i,t-1}$) and corrects for simultaneity bias by using lagged levels of endogenous regressors as instruments. Instrument validity is evaluated using the Hansen J test, while AR(1) and AR(2) tests check for residual autocorrelation.

Several estimation issues are considered. First, heteroskedasticity and serial correlation would bias OLS standard errors, motivating the use of robust, clustered errors in FE models and the AR(1)/AR(2) tests in GMM. Second, endogeneity is addressed by treating FDI and lagged GDP growth as endogenous, instrumented by their own lags. Third, instrument proliferation is mitigated by collapsing instruments and restricting lag depth. Finally, non-stationarity is less of a concern in Difference GMM, as differencing removes unit roots; nevertheless, I restrict the use of lags to ensure stationarity in the instrument set.

3.5. Hypotheses

This specification directly aligns with the four research questions: FDI is treated as endogenous, growth is persistent, and natural resource rents and institutions are included as conditioning factors. The empirical framework therefore tests the following hypotheses:

- H_1: FDI inflows exert a positive effect on GDP growth in resource-dependent emerging economies

- H_2: The effect of FDI on growth is conditional on natural resource rents, with the growth payoff amplified in more resource-dependent economies
- H_3: The effect of FDI on growth is conditional on institutional quality, with stronger government effectiveness enhancing the productivity of FDI
- H_4: FDI influences macroeconomic stability (inflation, unemployment, and the current account balance), but its effects depend on the broader macro-institutional environment.

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics

Table 3 provides a first look at the data. On average, natural resource rents account for 23.9% of GDP in the sample, and even at the lower end most countries cross the World Bank's 10% threshold for resource dependence. The first quartile is 11.6%, meaning that even the least resource-dependent countries in the sample qualify as such. The only real outlier is Sudan in 1997, where reported rents dropped to 0.26%. GDP growth averages 4.2% annually, though the large standard deviation (9.0) underscores volatility, ranging from −36.7% to a peak of 149.97% in Equatorial Guinea in 1997. Inflation is relatively contained for most of the distribution (median 4.20%), but Angola in 1996 experienced hyperinflation of 4,145%. Net FDI inflows average 3.75% of GDP, though Equatorial Guinea in 1996 recorded 161.8% of GDP, reflecting a one-off oil-sector surge. Governance scores are generally negative (mean −0.30), consistent with the challenges facing resource-dependent emerging economies.

The Pearson correlation matrix in Figure 1 highlights several important patterns. GDP growth is positively correlated with FDI inflows (0.36), while GDP growth and GDP per capita growth are nearly perfectly correlated (0.96). Natural resource rents display mixed associations: They correlate negatively with growth but positively with government consumption. FDI and inflation exhibit only a weak positive correlation (0.04). By contrast, the relationship between FDI inflows and the current account balance is moderately negative (−0.51). This can be understood in two ways: countries with persistent current account deficits often rely on FDI as a source of external financing, and FDI itself generates long-run outflows through profit repatriation, intra-company loans, and high import demand for capital goods, which place additional pressure on the current account.

Several stylised facts also stand out (Figures 2-4). FDI inflows in the 24 resource-dependent emerging economies surged in the early 2000s, slowed in the aftermath of the 2008 global financial crisis, recovered until 2014, and then weakened during the 2014-2016 oil price collapse and again with the COVID-19 shock in 2020-2021. GDP growth is consistently higher than per capita growth, reflecting demographic pressures in the sample. The sharpest contractions appear in 2009 and 2020, and in both cases the downturn materialises in the year following the crisis, confirming the presence of lagged transmission effects. Natural resource rents display strong cyclicality, rising during the 2000s commodity boom and falling during periods of global turbulence.

4.2. FDI and Growth: Fixed Effects Results

The analysis begins by examining the relationship between FDI inflows and GDP growth using both FE and dynamic GMM estimators. A clear temporal pattern emerges that has important implications for both theory and policy: FDI's impact on growth materialises with a 1-year lag rather than contemporaneously. This distinction is not merely technical but reflects fundamental economic processes — FDI does not typically translate into growth within the same year; it requires time for capital to be absorbed, new facilities to be built, and workers to adapt to new technologies.

Table 4 presents the FE estimates. The lagged specification demonstrates superior explanatory power, with an adjusted R^2 of 0.39 compared to 0.24 for the contemporaneous model. The coefficient magnitudes tell a compelling story about the gestation period of foreign investment: While the contemporaneous specification yields a positive and highly significant coefficient of 0.223, the lagged specification rises substantially to 0.462. The lagged FDI coefficient suggests that a 1% point increase in FDI inflows (as % of GDP) leads to approximately 0.46% points higher GDP growth in the following year. This magnitude is both economically significant and consistent with technology transfer and capital accumulation channels emphasised in the theoretical literature.

Government effectiveness reinforces this narrative. Across both FE and GMM specifications, the coefficient is positive — and statistically significant in several. The coefficient of 2.460 in the lagged FE specification suggests that moving from the 25th to 75th percentile of government effectiveness (approximately one standard deviation) is associated with 2.46% points higher growth. Bureaucratic efficiency, regulatory quality, and contract

Table 3: Statistics (1996-2023)

Variable	Obs.	Mean	Median	Standard deviation	Min.	Max.
Natural resource rents (% of GDP)	672	23.90	22.28	15.21	0.26	88.59
GDP growth (annual %)	672	4.24	3.72	9.04	−36.66	149.97
GDP per capita growth (annual %)	672	1.73	1.35	8.56	−38.54	140.49
Consumer price index (CPI, % annual change)	672	16.60	4.18	161.90	−16.12	4145.11
Net FDI inflows (% of GDP)	672	3.75	2.09	9.36	−17.29	161.82
Government consumption (% of GDP)	672	15.20	14.32	5.32	2.44	33.01
Current account balance (% of GDP)	672	4.13	3.05	13.98	−124.60	45.50
Unemployment (% of labour force)	672	8.09	5.77	6.34	0.10	47.60
WGI – government effectiveness (index)	672	−0.30	−0.39	0.77	−2.09	1.60
Official exchange rate (LCU per US$, log)	672	3.16	2.24	3.21	−2.06	10.60

Figure 1: Pearson correlation matrix

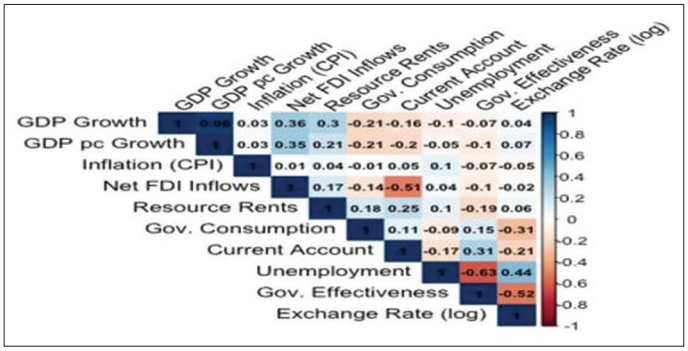


Figure 2: Average and median net FDI inflows (% of GDP), 1996-2023, across 24 resource-dependent emerging economies. Vertical markers indicate the 1997-1998 Asian financial crisis, the 2008–09 global financial crisis, the 2014-2016 oil price collapse, and the 2020 COVID-19 pandemic

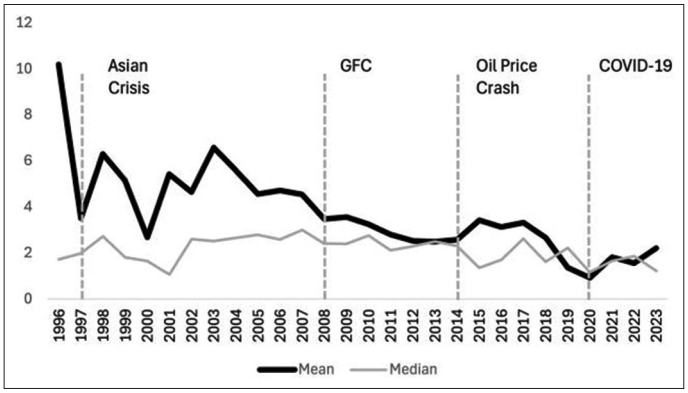


Figure 3: Average GDP growth and GDP per capita growth (%), 1996-2023, across 24 resource-dependent emerging economies. Shaded areas denote major crises

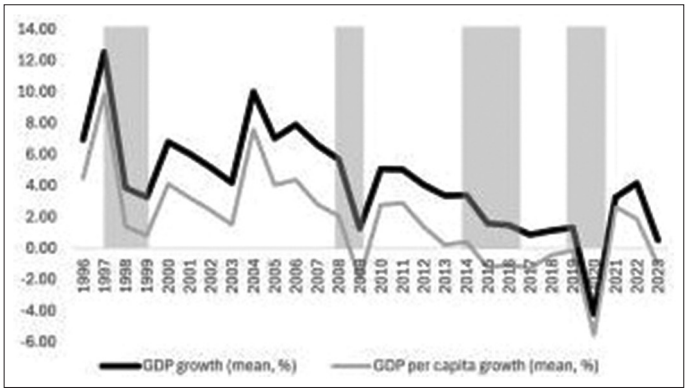


Figure 4: Average natural resource rents (% of GDP), 1996-2023, across 24 resource-dependent emerging economies. The dotted horizontal line marks the World Bank's 10% threshold for identifying resource-dependent economies

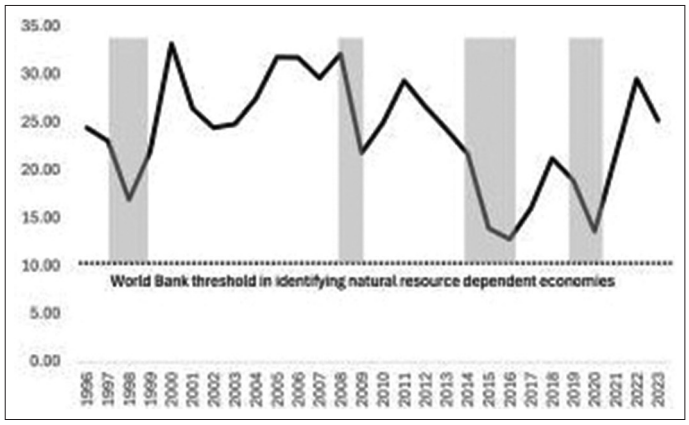


Figure 6: FDI → GDP growth (lagged FDI): Coefficients across specifications. Points show estimates and vertical bars are 95% confidence intervals for FE (solo), GMM (full), and GMM (solo)

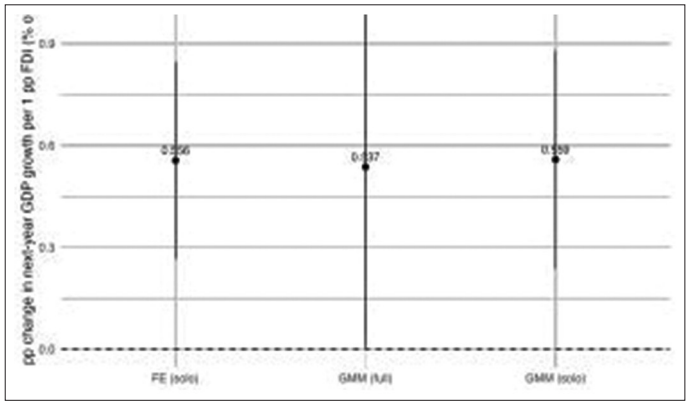
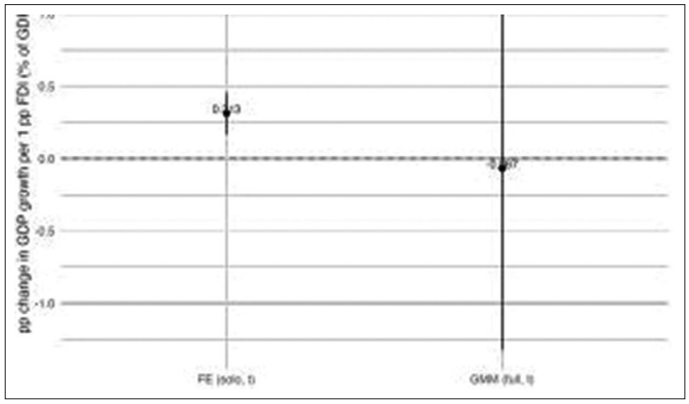


Figure 5: FDI → GDP growth (contemporaneous FDI): Coefficients across specifications. Points show estimates and vertical bars are 95% confidence intervals for FE (solo, t) and GMM (full, t)



enforcement reduce frictions, allowing foreign investors to integrate more rapidly and local firms to absorb spillovers more effectively.

Natural resources display a more nuanced role. In the contemporaneous FE model, rents have a positive and significant coefficient of 0.351, while in the lagged specification this drops to 0.244 but remains significant. This reflects the dual nature of natural resources: Rents can boost growth by providing revenues, financing infrastructure, and attracting complementary FDI (the "blessing" channel), but they are also volatile and prone to diminishing returns, and may crowd out diversification or expose growth to external shocks (the "curse" channel). Government consumption shows negative and significant coefficients (−0.350 contemporaneous, −0.304 lagged), consistent with crowding-out of private investment.

Figure 7: Marginal effect of FDI on GDP growth across levels of natural resource dependence. The solid line shows how the impact of FDI on growth varies with natural resource rents (% of GDP), while the shaded area represents 95% confidence intervals. Dotted vertical lines mark the 25th, 50th, and 75th percentiles of resource dependence in the sample

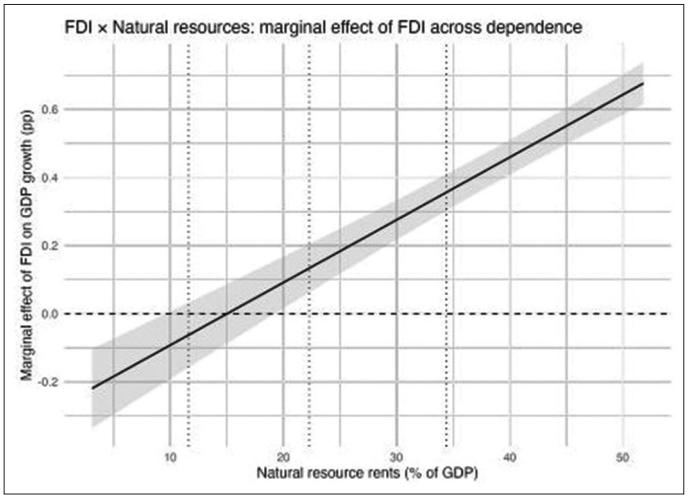
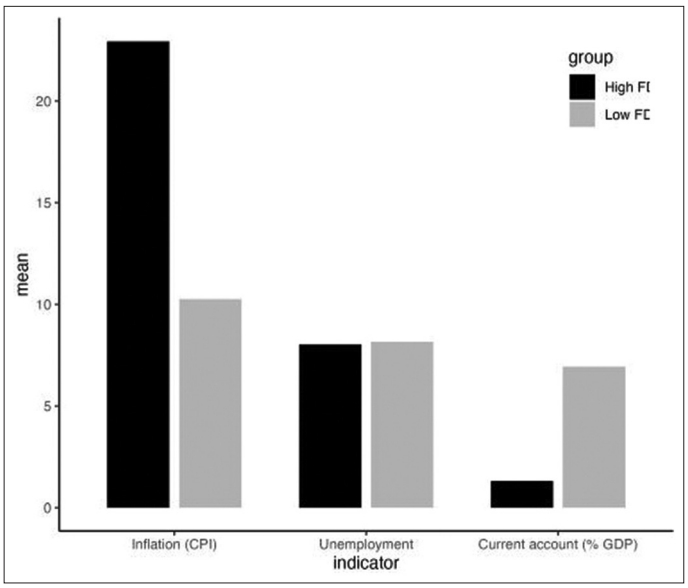


Figure 8: Macroeconomic stability indicators (average 1996–2023) by FDI intensity. High-FDI countries (black bars) and low-FDI countries (grey bars) are compared in terms of average inflation (CPI), unemployment, and current account balance (% GDP)



4.3. Dynamic GMM Results

Moving to Difference GMM to correct for potential endogeneity, the results become more cautious but ultimately more convincing (Table 5). The fundamental insight is that the contemporaneous FDI effect disappears once endogeneity is addressed, whereas the lagged effect survives and remains significant (Figure 5). Once endogeneity is addressed, the contemporaneous FDI coefficient becomes insignificant and even slightly negative (−0.067), while the lagged effect remains positive and significant (0.537, $P < 0.05$) (Figure 6). This dramatic shift confirms that simultaneity bias was indeed present in the FE estimates, where current growth might be attracting current FDI inflows, creating spurious correlation.

Table 4: Fixed effects estimates – FDI and GDP growth

Variable	Contemporaneous FDI	Lagged FDI
FDI inflows (t)	0.223*** (0.036)	—
FDI inflows (t−1)	—	0.462*** (0.033)
Natural resource rents	0.351*** (0.054)	0.244*** (0.049)
Government consumption	−0.350*** (0.092)	−0.304*** (0.083)
Government effectiveness	2.355* (1.287)	2.460** (1.158)
Year dummies	Mixed effects	Mixed effects
R^2 (Adjusted)	0.30 (0.24)	0.44 (0.39)
F-statistic	8.67***	15.62***
Observations	648	624

Country fixed effects included. Robust standard errors in parentheses. *** P<0.01, ** P<0.05, * P<0.10

Table 5: Difference GMM estimates – FDI and GDP growth

Variable	Contemporaneous FDI	Lagged FDI
GDP growth (t−1)	0.106 (0.118)	0.177** (0.074)
FDI inflows (t)	−0.067 (0.642)	—
FDI inflows (t−1)	—	0.537** (0.271)
Natural resource rents	0.449*** (0.156)	0.281 (0.177)
Government consumption	0.574 (0.454)	0.120 (0.814)
Government effectiveness	4.424* (2.336)	4.154* (2.377)
AR (1) *P* value	0.061	0.036
AR (2) *P* value	0.481	0.563
Hansen J *P* value	0.443	0.111
Wald χ^2 (5)	53.6***	101.7***
Instruments	7	7
Observations	600	576

Two-step difference GMM with collapsed instruments. Standard errors in parentheses. ***P<0.01, **P<0.05, *P<0.10

Second, the lagged dependent variable becomes significant in the preferred specification (0.177, $P < 0.05$), capturing the persistence in growth rates that is characteristic of emerging economies. Third, government effectiveness shows an even stronger coefficient under GMM (4.154) compared to FE, reinforcing the complementary role of institutions in enhancing FDI effectiveness. Standard specification tests behave as expected: AR(1) is significant (0.036), AR(2) is not (0.563), and the Hansen J test of overidentifying restrictions is not rejected (0.111). To mitigate instrument proliferation, I collapse the instrument set and restrict lag depth to 2–3, resulting in only 7 instruments — well below the 24 cross-sectional units in the sample, following the guidance of Roodman (2009).

Natural resource rents show a positive coefficient (0.281) but lose statistical significance, suggesting that once dynamics and endogeneity are controlled for, the resource–growth relationship becomes more uncertain. Government consumption becomes insignificant under GMM, likely reflecting that while high government consumption may crowd out private investment in static models, this effect is diluted once dynamics and endogeneity are controlled for.

4.4. Robustness Check: Stripped-Down Specification

To assess the robustness of the main findings, I also estimate a stripped-down specification including only GDP growth persistence, lagged FDI inflows, and year dummies. Year dummies are retained to capture global shocks that affected all countries

simultaneously, such as the Asian financial crisis (1997-1998), the Global Financial Crisis (2008-2009), the commodity price collapse of 2015-2016, and the COVID-19 pandemic in 2020. The results are strikingly consistent across both FE and Difference GMM (Table 6). Under FE, lagged FDI inflows remain highly significant with a coefficient of 0.520 ($P < 0.001$). When estimated with Difference GMM, the coefficient is 0.559 ($P < 0.01$), remarkably close to the FE estimate. The diagnostic tests continue to support the GMM specification.

This robustness check strengthens confidence in the core result: FDI inflows exert a positive and statistically significant effect on growth in resource-dependent emerging economies, even when stripped of institutional and macroeconomic controls. The similarity between the stripped-down coefficients (0.520-0.559) and the full-model coefficients (0.462-0.537) suggests that the FDI effect is not merely capturing other omitted factors but represents a genuine relationship. At the same time, the slightly weaker coefficients in the full model suggest that part of the FDI effect operates through institutional and resource channels, consistent with the conditional FDI–growth literature.

4.5. Granger Causality Analysis

To examine the direction of causality between FDI and growth more formally, I apply the Dumitrescu and Hurlin (2012) panel Granger causality test, which allows for heterogeneity across countries while maintaining power through cross-sectional aggregation (Table 7). With one lag, the findings indicate bidirectional predictive causality: FDI inflows Granger-cause GDP growth ($\tilde{Z} = 11.59$, $P < 0.001$), while GDP growth also Granger-causes FDI inflows, though with a much weaker statistic ($\tilde{Z} = 2.80$, $P = 0.005$). This suggests the existence of a short-run feedback loop, where foreign investment stimulates growth and fast-growing economies also attract further investment.

When the specification is extended to two lags, the results become unidirectional: FDI continues to Granger-cause GDP growth ($\tilde{Z} = 4.41$, $P < 0.001$), but the reverse link from growth to FDI is no longer significant ($\tilde{Z} = 0.99$, $P = 0.32$). This pattern implies that while short-run feedback exists, the more robust and persistent channel runs from FDI to growth, consistent with the theoretical mechanisms of technology transfer, capital accumulation, and spillover effects that require time to materialise. These findings are consistent with Hansen and Rand (2006), who also report evidence of bidirectional causality in the short run but emphasise that the stronger and more enduring causal effect is from FDI to GDP.

4.6. Natural Resources as a Conditioning Factor

To examine whether natural resource dependence conditions FDI's effectiveness, I estimate an interaction model that allows the marginal effect of FDI to vary with the degree of resource dependence. The interaction term is highly significant (0.018, $P < 0.001$), indicating that natural resource dependence amplifies FDI's growth impact (Table 8). This finding has important policy implications because it suggests that rather than crowding each other out, natural resources and foreign investment can be mutually reinforcing.

To interpret this effect economically, I calculate the marginal impact of FDI at different points of the resource distribution. The marginal effect of FDI on growth is given by $\partial Growth/\partial FDI = 0.163 + 0.018 \times NRR$ (Figure 7). Evaluating this at key percentiles: At the 25th percentile (≈12% of GDP), the marginal effect is $0.163 + 0.018 \times 12 = -0.06$; at the median (≈ 22% of GDP), it is $0.163 + 0.018 \times 22 = 0.13$; and at the 75th percentile (≈ 34% of GDP), it is $0.163 + 0.018 \times 34 = 0.36$. This pattern demonstrates that natural resources do not directly guarantee higher growth (the main effect is insignificant), but they act as a catalyst: in more resource-dependent economies, FDI inflows

Table 6: Robustness check – minimal specification

Variable	Fixed effects	Difference GMM
GDP growth (t−1)	—	0.148*** (0.052)
FDI inflows (t−1)	0.520*** (0.067)	0.559*** (0.089)
Year dummies	Included	Included
R^2 (Adjusted)	0.39 (0.34)	—
F-statistic/Wald	14.2***	$\chi^2(2) = 89.4$***
AR (1) *P* value	—	0.046
AR (2) *P* value	—	0.379
Hansen J *P* value	—	0.185
Observations	624	576

Year dummies included in both specifications. Standard errors in parentheses. ***P<0.01, **P<0.05

Table 7: Panel granger causality tests

Lag order	Null hypothesis	Z̃-statistic	P-value
1 lag	FDI⇏GDP growth	11.585	<0.001
1 lag	GDP growth⇏FDI	2.799	0.005
2 lags	FDI⇏GDP growth	4.413	<0.001
2 lags	GDP growth⇏FDI	0.988	0.323

⇏=does not Granger-cause, ns: Not significant at 10%

Table 8: FDI–natural resources interaction effects

Variable	Coefficient	Robust SE	t-value	P-value
FDI inflows (t−1)	0.163***	0.035	4.68	<0.001
Natural resource rents	0.075	0.094	0.79	0.427
Government consumption	−0.229*	0.133	−1.73	0.085
Government effectiveness	1.469	1.524	0.96	0.336
FDI×Natural resources	0.018***	0.001	12.62	<0.001
Country FE	Included			
Year FE	Included			
R^2 (Adjusted)	0.52 (0.47)			
Observations	624			

Country and year fixed effects included. Robust standard errors. ***P<0.01, *P<0.10

Table 9: FDI and macroeconomic stability – Granger causality

Outcome variable	FDI→Y	Y→FDI	Interpretation
CPI (Inflation)	Z̃=7.11***	Z̃=2.98***	Bidirectional feedback
Unemployment	Z̃=1.11 (ns)	Z̃=3.79***	Labour slack attracts FDI
Current Account Balance	Z̃=−0.95 (ns)	Z̃=3.26***	External balance attracts FDI
Government Effectiveness	Z̃=1.23 (ns)	Z̃=3.20***	Institutions attract FDI

ns: Not significant at 10%. *** P<0.01

translate into larger growth gains. Countries with low resource dependence (below ≈ 9% of GDP) actually experience negative marginal effects from FDI, while those with higher dependence see increasingly positive effects.

The economic intuition is that natural resource revenues can provide complementary inputs — infrastructure, human capital, domestic savings — that allow foreign investment to be more productive. Resource-rich countries may also attract FDI specifically in resource-related sectors where they have comparative advantages, leading to more efficient capital allocation. The coefficient on government effectiveness becomes statistically insignificant in this specification (1.469, P = 0.336), suggesting that once the conditioning role of resources is modelled explicitly, the independent contribution of institutions is less precisely identified — although this does not contradict the importance of institutions, but rather suggests that in resource-rich contexts, the resource–FDI interaction may be the dominant channel through which institutional effects operate.

4.7. FDI and Macroeconomic Stability

I next examine FDI's relationship with four key stability indicators: İnflation (CPI), unemployment, current account balance, and government effectiveness. The evidence is markedly different from the growth results: FDI does not appear to directly stabilise these macroeconomic indicators. Instead, macroeconomic stability appears to attract FDI rather than FDI promoting stability (Figure 8).

4.7.1. Granger causality for stability indicators

For inflation, the Granger tests indicate a clear two-way relationship (Table 9): FDI inflows predict future CPI ($\tilde{Z}$ = 7.11, P < 0.001), and CPI also predicts future FDI ($\tilde{Z}$ = 2.98, P < 0.01). This bidirectional relationship makes intuitive sense: large FDI inflows can generate demand pressures, influence import prices through exchange rate effects, and feed into domestic price dynamics, while price stability is itself a fundamental factor attracting multinational enterprises. For unemployment, causality runs only in one direction: unemployment predicts FDI ($\tilde{Z}$ = 3.79, P < 0.001), but FDI does not predict unemployment ($\tilde{Z}$ = 1.11, P = 0.27). Labour-market slack attracts foreign capital — perhaps because it signals lower labour costs or available workforce capacity — but inflows do not translate into immediate employment gains. For the current account balance, causality runs from CAB to FDI but not the other way around: stronger external balances predict inflows ($\tilde{Z}$ = 3.26, P < 0.001), but inflows do not predictably alter the balance ($\tilde{Z}$ = −0.95, P = 0.34). Finally, FDI does not Granger-cause government effectiveness ($\tilde{Z}$ = 1.23, P = 0.22); instead, government effectiveness strongly Granger-causes FDI ($\tilde{Z}$ = 3.20, P < 0.001), underscoring the role of institutions as a precondition rather than a by-product of foreign capital.

4.7.2. Fixed effects results for stability indicators

Examining the structural relationships using FE models confirms and refines the Granger findings (Table 10). For inflation, the coefficient on lagged FDI is small and insignificant (−0.062, P = 0.776), suggesting that despite the predictive relationship, the structural impact of FDI on inflation is weak once country and year effects are controlled for. The unemployment results confirm the Granger findings: the coefficient on lagged FDI is practically zero (0.002, P = 0.755). The current account result is particularly interesting: The coefficient on FDI is negative and borderline significant (−0.254, P = 0.073), suggesting that FDI inflows may actually worsen the current account balance — economically intuitive given that FDI involves imports of capital goods during the investment phase and later generates outflows through profit repatriation. For government effectiveness, the coefficient is positive and marginally significant (4.154, P = 0.081), but this represents the reverse relationship from what policy-makers often assume: Rather than FDI improving governance, it captures the fact that better governance attracts more FDI.

In the growth regressions, government effectiveness consistently shows positive coefficients, suggesting that institutions act as a multiplier for FDI's growth impact. Countries with more effective governance are better able to channel foreign investment toward productive uses and facilitate positive spillovers to domestic firms. This institutional channel helps explain why FDI effects vary so dramatically across countries in the literature. In this sample, those with government effectiveness scores above the median consistently show stronger FDI–growth relationships than those below the median, though I find no evidence that FDI itself improves institutional quality.

4.8. Comparison with Existing Literature

The results align with influential studies in the conditional-effects strand. Table 11 summarises this positioning. They are consistent with Borensztein et al. (1998) and Alfaro et al. (2004), who emphasise conditional positive effects of FDI, but diverge from Michael (2018) and Majumder and Roy (2023), where FDI is associated with weaker or negative growth outcomes. This positioning highlights the contribution of this paper in showing that the FDI–growth relationship is conditional on resource dependence and institutional quality, not just human capital or financial development.

4.9. Diagnostic Tests and Model Validation

To ensure the regression results are not driven by statistical artifacts, comprehensive diagnostic checks were performed. Table 12 reports Variance Inflation Factors (VIFs) for the main regressors. All VIFs are close to 1 (1.08-1.14), far below the conventional threshold of 10 and even below the more conservative threshold of 5. This indicates that collinearity is not a concern in the specifications: the explanatory variables are not providing overlapping information that could bias coefficients or inflate

Table 10: FDI and macroeconomic stability – fixed effects

Outcome variable	FDI coefficient (t−1)	Standard error	P-value	R^2 (Adj.)
CPI (Inflation)	−0.062	0.256	0.776	0.18 (0.12)
Unemployment	0.002	0.021	0.755	0.45 (0.39)
Current account balance	−0.254*	0.142	0.073	0.22 (0.16)
Government effectiveness	4.154*	2.377	0.081	0.31 (0.25)

All regressions include country and year fixed effects. *P<0.10

Table 11: Comparison with existing literature

Study	Region/Method	Findings	Relation to my results
Borensztein et al. (1998)	Cross-country panel	FDI boosts growth with sufficient human capital	Supports the lagged and conditional FDI effect
Alfaro et al. (2004)	EMEs, panel data	FDI positive with developed financial markets	Consistent with the institutional conditioning result
Majumder and Roy (2023)	Asia, 1975–2015	FDI positive until 2005, negative after	Contrasts with the sustained positive but conditional effects
Michael (2018)	Sub-Saharan Africa	FDI reduces per capita GDP growth	Contradicts; likely weak institutions/absorptive capacity

Table 12: Multicollinearity diagnostics

Variable	VIF	1/VIF
FDI inflows (t−1)	1.08	0.926
Natural resource rents	1.14	0.877
Government consumption	1.11	0.901
Government effectiveness	1.08	0.926
Mean VIF	1.10	—

standard errors.

The dynamic GMM models consistently pass standard diagnostic requirements across all specifications. AR(1) tests are significant (P = 0.036-0.061), as expected for differenced equations where the lagged dependent variable is correlated with the error term by construction. AR(2) tests are not significant (P = 0.379-0.563), confirming the absence of second-order serial correlation. Hansen J tests are not rejected (P = 0.111-0.443), supporting the validity of the overidentifying restrictions. The instrument count is limited to 7 in all specifications, well below the rule-of-thumb maximum of one instrument per cross-sectional unit.

Some extreme values of FDI inflows are present in the sample, most notably Equatorial Guinea in 1996 which exceeded 160% of GDP. Although it is common practice to winsorize such observations, I retained them for several reasons. First, these represent genuine economic episodes of capital surges in resource-dependent economies — major oil-field discoveries often generate massive FDI inflows that dwarf the existing economy. Second, the panel GMM specification mitigates the influence of outliers through differencing and the use of lagged instruments. Third, sensitivity analysis showed that the main results are robust to alternative treatments of outliers, including winsorising at the 95th percentile and excluding the most extreme observations entirely. Given that the results are robust across alternative specifications, I conclude that the main findings are not driven by a handful of extreme values.

5. DISCUSSION AND CONCLUSION

5.1. Summary of Main Findings

This paper examined whether foreign direct investment promotes growth and stability in resource-dependent emerging economies through a comprehensive empirical analysis of 24 countries over the period 1996-2023. The research addressed four key questions regarding FDI's temporal effects, its interaction with natural resources, the role of institutional quality, and its impact on macroeconomic stability.

The central finding challenges conventional wisdom about FDI's immediate impact: Foreign investment generates growth benefits with a 1-year lag rather than contemporaneously. This temporal pattern emerged consistently across both FE and dynamic GMM specifications, with lagged FDI coefficients ranging from 0.462 to 0.559, indicating that a 1% point increase in FDI inflows translates to approximately 0.5% points higher GDP growth in the following year. The disappearance of contemporaneous effects under GMM estimation confirms that simultaneity bias inflates the apparent immediate impact of FDI in static models, underscoring the importance of addressing endogeneity in this literature.

Contrary to resource curse predictions, natural-resource dependence amplifies rather than constrains FDI's growth benefits. The interaction analysis revealed that countries with higher resource dependence experience increasingly positive marginal effects from FDI, with the marginal impact rising from negative territory in low-resource economies to 0.36% points in highly resource-dependent ones. This suggests that natural resources and foreign investment can be mutually reinforcing when properly managed, challenging views that position them as competing development strategies.

Government effectiveness consistently emerged as a crucial multiplier for FDI's productivity. Across specifications, institutional quality showed positive coefficients, with improvements from the 25th to the 75th percentile of government effectiveness associated with 2.5% points higher growth. However, the causality runs from institutions to FDI effectiveness rather than vice versa, contradicting policy narratives that emphasise FDI as an automatic catalyst for institutional improvement.

The macroeconomic stability analysis revealed a striking asymmetry: while FDI promotes growth, it does not directly stabilise key indicators such as inflation, unemployment, or current account balances. Instead, Granger causality tests consistently showed that macroeconomic stability attracts FDI rather than FDI promoting stability. This finding has important implications for policy sequencing, suggesting that countries should prioritise creating stable macroeconomic environments before expecting FDI to deliver stabilising effects.

5.2. Theoretical and Empirical Contributions

This research makes several contributions to the FDI–growth literature. Methodologically, the systematic comparison between contemporaneous and lagged specifications, combined with rigorous endogeneity testing through dynamic GMM, provides a template for future empirical work in this field. The finding that

contemporaneous effects disappear under proper identification while lagged effects persist offers a resolution to conflicting results in the literature.

Theoretically, the results support conditional convergence models where FDI effectiveness depends critically on absorptive capacity, proxied here by institutional quality and resource endowments. The complementarity between natural resources and FDI challenges Dutch disease narratives by demonstrating that resource rents can enhance — rather than undermine — the productivity of foreign capital when channelled through effective institutions. The temporal findings align with theories emphasising technology transfer and capital absorption processes that require time to materialise. The 1-year lag reflects the reality that foreign investment must be absorbed, new facilities built, and workers trained before productivity gains emerge — a temporal dimension under-explored in cross-country studies but proven crucial here for understanding FDI's development impact.

5.3. Policy İmplications

The results offer several lessons for policymakers in resource-dependent emerging economies.

1. Strengthen absorptive capacity before chasing inflows. The evidence shows that the growth benefits of FDI are stronger when institutional quality is higher. This implies that governance reforms, regulatory efficiency, and stronger institutions should precede or accompany investment promotion. Simply maximising inflows without improving absorptive capacity risks creating enclave benefits with limited spillovers.
2. Treat natural resources and FDI as complements, not substitutes. The interaction analysis demonstrates that FDI has larger growth effects in economies with higher natural resource rents. This suggests that resource revenues should be used to finance complementary inputs — infrastructure, education, and domestic capital formation — that enhance the productivity of foreign investment. Conversely, foreign investors bring technology and expertise that can increase the value-added of natural resources. A coordinated strategy linking both elements is essential.
3. Plan for lagged effects and adopt medium-term evaluation frameworks. The econometric results highlight that FDI impacts growth with a lag, while contemporaneous effects are often insignificant. Policymakers should therefore be patient in evaluating investment programmes and design monitoring frameworks that capture medium-term impacts. This also implies prioritising projects in sectors with long horizons — infrastructure, manufacturing, and energy — where spillovers accumulate gradually.
4. Do not expect FDI to deliver macroeconomic stability. The causality analysis indicates that stability attracts FDI, not the other way around. Inflation, unemployment, and external balances improve the investment climate but are not automatically improved by inflows. Sound macroeconomic management remains a prerequisite for attracting quality investment. FDI should thus be seen as a complement to, rather than a substitute for, macroeconomic discipline.
5. Tailor strategies by income level and stage of development. The results suggest that the role of FDI differs depending on structural context. Low-income economies may prioritise resource-linked FDI to expand fiscal space. Middle-income countries should focus on diversifying inflows toward manufacturing and services. High-income resource exporters can leverage FDI for innovation, technology partnerships, and integration into global value chains. Differentiated strategies ensure that FDI contributes to structural transformation rather than reinforcing dependence on raw resource extraction.

5.4. Limitations and Avenues for Future Research

Several limitations of this research suggest promising directions for future inquiry. First, the focus on aggregate FDI flows inevitably obscures important sectoral heterogeneity. Future work should disaggregate FDI by sector — particularly distinguishing between resource-seeking and market-seeking investments — to better understand the mechanisms underlying the resource–FDI complementarity identified here.

Second, the institutional analysis relied on aggregate governance indicators, which may not fully capture sector-specific regulatory quality. Incorporating more granular measures of the investment climate, such as regulatory efficiency in key industries or contract enforcement mechanisms, could provide deeper insights into the institutional channels through which FDI operates.

Third, the temporal analysis was restricted to annual data with a maximum lag of 1 year, potentially missing important dynamics. Higher-frequency data could help identify the precise timing of FDI effects, while longer lags might reveal additional delayed impacts. Approaches such as panel VAR with quarterly data could offer richer insights into the dynamic interactions between FDI, growth, and stability indicators.

Fourth, the geographic coverage was limited to 24 resource-dependent emerging economies. Future research could expand the sample to include all countries that exceed the World Bank's 10% natural-resource-rents threshold, providing a more comprehensive global assessment. Moreover, dividing countries into income groups (low, middle, and high income) would allow systematic exploration of how the developmental stage conditions the growth and stability effects of FDI. Fifth, the present analysis used aggregate GDP growth as the primary outcome variable. Future studies could employ GDP per capita growth as the dependent variable to better assess how FDI influences improvements in living standards. Finally, complementary firm-level analysis would provide valuable micro-foundations: examining how FDI affects domestic firms with different ownership structures, technological capabilities, and sectoral positions could clarify the mechanisms of spillovers and absorptive capacity.

5.5. Concluding Remarks

This paper has demonstrated that foreign direct investment can serve as an engine of growth in resource-dependent emerging economies, but its effectiveness depends critically on timing, institutional quality, and the broader macroeconomic environment. The 1-year lag in FDI effects reflects genuine economic processes

rather than statistical artifacts, while the complementarity between natural resources and foreign investment challenges conventional wisdom about resource curse dynamics.

Successful FDI policies require patient capital, strong institutions, and sound macroeconomic management. Rather than viewing natural resources as obstacles to diversification, policymakers should recognise their potential to enhance FDI productivity when combined with effective governance and long-term development strategies. For the 24 resource-dependent emerging economies examined here, the findings suggest a path forward that leverages both resource endowments and foreign capital as mutually reinforcing elements of sustainable development. The key lies not in choosing between these strategies but in creating the institutional and macroeconomic conditions that allow both to flourish in service of broader development objectives.

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