# FOREIGN CAPITAL INFLOWS AND PRIVATE SECTOR DEVELOPMENT IN NIGERIA

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**BENIN CITY**

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**A PROJECT WRITTEN AND SUBMITTED TO THE DEPARTMENT OF FINANCE OF THE FACULTY OF MANAGEMENT SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN FINANCE OF THE UNIVERSITY OF BENIN, BENIN CITY**

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## DECLARATION

I, Prince Ojaigho, a student of the Department of Banking and Finance, Faculty of Management Sciences, University of Benin, hereby declare that this project titled "Foreign Capital Inflow and Private Sector Development in Nigeria" is my original work. It was carried out by me under the supervision of Dr. L. E. Igbonovia.

To the best of my knowledge, this work has not been submitted, in whole or in part, for the award of any degree in this or any other institution.

_____

**Prince Ojaigho**

**Date:** _____

## CERTIFICATION

We the undersigned certified that this research work was carried out by OJAIGHO PRINCE with the Matriculation Number: MGS2104760 in the Department of Finance, University of Benin. It is adequate in scope and quality for the partial fulfillment of the requirements of the award of the degree of Bachelor of Science in Finance.

| | |
|---|---|
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## DEDICATION

This project is dedicated to God Almighty, whose grace, wisdom, and strength have sustained me

## ACKNOWLEDGMENT

First and foremost, I give all glory to God Almighty for His unending grace, wisdom, and strength throughout the course of this project and my academic journey. Without Him, none of this would have been possible.

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I want to deeply honour the memory of my late father, Chief Ojaivwighokia Ekoh, who instilled in me a love for education but sadly passed away when I was nine years old.

To my beloved mother, Mrs. Ojaigho Mary, and my family — Ojaigho Michael, Ojaigho Victory, Ojaigho Innocent, Ojaigho Choice, and Edafe Igben ,Efetobor Great Ojavwighokia,Mrs Evelyn Obaji— thank you for your prayers, encouragement, and unwavering support. You have been my greatest motivation.

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## ABSTRACT

This study investigates the impact of foreign capital inflows on private sector development in Nigeria over the period 1990 to 2023. The analysis disaggregates foreign capital into four distinct components such as Foreign Portfolio Investment (FPI), Foreign Direct Investment (FDI), Foreign Aid (AID), and Remittances (REM), to examine their individual effects on domestic private sector credit as a proxy for private sector development. Utilizing the Robust Least Squares (RLS) estimation technique to address issues of model misspecification and data irregularities, the study finds that remittances exert a strong and statistically significant positive effect on private sector development, while FPI has a significant negative effect. In contrast, both FDI and foreign aid were found to have statistically insignificant impacts. The findings underscore the importance of capital quality and the domestic absorptive environment in determining the developmental impact of foreign inflows. The study concludes that while foreign capital remains essential for economic development, its effectiveness in enhancing the private sector depends critically on regulatory oversight, financial infrastructure, and macroeconomic stability. Policy recommendations include strengthening remittance channels, regulating speculative capital, and improving the investment climate for more productive FDI utilization.



**Keywords:** Foreign Capital Inflows, Private Sector Development, Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Remittances, Foreign Aid.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

The private sector plays a pivotal role in fostering economic growth and structural transformation in Nigeria, serving as a primary driver of industrial development, innovation, and employment generation. Its contribution to national output has shown a gradual upward trend, with private investment accounting for 15.2% of gross domestic product (GDP) in 2022 and projected to rise to 17.2% in 2023 (Sasu, 2023). Despite this progress, the sector continues to face considerable structural impediments, including inadequate infrastructure, high operational costs, regulatory uncertainty, and limited access to affordable finance (Adeosun, Orisadare, Fagbemi, & Adedokun, 2021; Ajudua, 2022). These constraints are exacerbated by weak domestic savings mobilisation and inefficiencies in financial intermediation, which restrict firms' capacity to invest, expand, and innovate (Awad, Al-Jerashi, & Alabaddi, 2021; Igbinedion, 2023). Consequently, the Nigerian private sector remains heavily reliant on foreign capital inflows to augment its capital base and sustain competitive growth (Fiador, Amoah, & Abbey, 2022; Olorogun, 2024).

Foreign capital inflows comprising foreign direct investment (FDI), portfolio investment, foreign aid, and remittances constitute a vital external source of finance for private sector development. However, their volume and composition have been marked by considerable volatility, reflecting the dynamic interplay between global financial conditions and Nigeria's

macroeconomic environment (Acheampong, Frimpong, & Arhin, 2023; Nguyen, Pham, Tran, & Nguyen, 2021). For instance, total capital importation increased sharply to US$2.6 billion in Q2 2024, from US$1.0 billion in Q2 2023, reflecting a 152.8% year-on-year growth. Yet, compared to the preceding quarter, capital inflows declined by 22.9%, highlighting the short-term volatility of such funds (National Bureau of Statistics [NBS], 2024). Notably, portfolio investment accounted for the largest share (53.9%) of total inflows, while FDI contributed a meagre 1.15%, raising concerns about the sustainability and developmental quality of foreign capital (Arumona & Oguntade, 2025; NBS, 2024). This composition underscores the dual nature of Nigeria's global financial integration offering opportunities for external financing while exposing the economy to speculative risks (Ofosu-Mensah Ababio, Aboagye, Barnor, & Agyei, 2022).

The various forms of foreign capital inflows have distinct characteristics and implications for private sector performance. FDI is typically regarded as the most stable and productive form, often associated with technology transfer, managerial expertise, and integration into global production networks (Bozsik, Ngo, & Vasa, 2023; Guo et al., 2024). In contrast, portfolio investment provides short-term liquidity and access to capital markets but is susceptible to abrupt reversals, potentially destabilising domestic financial systems (Suhendra, Istikomah, & Anwar, 2022). Remittances serve as an increasingly important financial inflow, supporting household consumption and small-scale entrepreneurship, though their investment impact is heavily mediated by institutional and policy environments (Atuma et al., 2024; Okeke &

Chukelu, 2024). Meanwhile, foreign aid presents a dual role—targeted aid can enhance productive capacity, whereas untied or poorly managed aid may foster aid dependency and undermine private sector responsiveness (Ajide & Osinubi, 2022; Aljonaid, Qin, & Zhang, 2022). The aggregate impact of these subcomponents on private sector investment therefore depends not only on the volume of inflows but also on their composition and strategic alignment with domestic development priorities (Diallo, Jacolin, & Rabaud, 2021; Arumona & Oguntade, 2025).

The dynamics between foreign capital and private sector development is complex. According to the crowding-in hypothesis, foreign inflows can complement domestic resources by easing credit constraints, reducing financing costs, and stimulating entrepreneurial activity (Acheampong et al., 2023; Olorogun, 2024). Conversely, the crowding-out hypothesis posits that foreign capital especially when volatile or misaligned may displace private sector development by distorting market incentives, increasing external dependency, or exerting inflationary pressure via exchange rate appreciation (Herzer & Grimm, 2012; Mossie, 2014). These contradictory outcomes suggest that the effects of foreign capital on private sector are not deterministic but are mediated by key variables such as institutional quality, macroeconomic stability, and the absorptive capacity of the domestic economy (Keho, 2020; Atswam & Abachi, 2023).

This dualism presents a significant policy paradox. On one hand, foreign capital is essential for bridging Nigeria's investment-savings gap, stimulating private sector growth, and

enhancing access to productive resources (Acheampong et al., 2023; Atuma et al., 2024). On the other hand, overreliance on short-term and speculative capital flows, especially portfolio investments, may undermine financial stability and crowd out indigenous enterprise development. Moreover, aid and remittance inflows, while sizeable, often lack the institutional integration needed to facilitate long-term productive investment (Herzer & Grimm, 2012; Keho, 2020; Diallo et al., 2021). These patterns reveal that the nexus between foreign capital inflows and private investment in Nigeria is intricate, context-dependent, and shaped by structural, institutional, and macroeconomic factors. In light of these complexities, it becomes imperative to examine the nature and implications of foreign capital inflows on private sector development in Nigeria.

### 1.2 Statement of the Research Problem

The interaction between foreign capital inflows and private sector development in Nigeria has garnered increased attention in recent decades, given its implications for inclusive growth, industrial diversification, and economic transformation. The private sector remains central to Nigeria's economic structure, acting as a major driver of output, employment, and innovation. However, despite its potential, the sector continues to struggle with limited access to finance, high production costs, infrastructural deficits, and policy inconsistency (Adeosun et al., 2021; Ajudua, 2022). At the same time, Nigeria's experience with foreign capital inflows has been marked by significant volatility. For instance, total capital importation increased by 152.8% from US$1.0 billion in Q2 2023 to US$2.6 billion in Q2 2024, but still declined by 22.9%

compared to the preceding quarter (National Bureau of Statistics, 2024). Notably, portfolio investment accounted for 53.9% of total inflows, while foreign direct investment (FDI) constituted only 1.15%, raising questions about the developmental quality and stability of external finance (Arumona & Oguntade, 2025). This mismatch between the rising capital needs of Nigeria's private sector and the unpredictable nature of foreign capital raises critical concerns about whether foreign inflows effectively support or hinder long-term private sector development in the country (Acheampong et al., 2023; Nguyen et al., 2021).

Although various studies have explored the relationship between foreign capital inflows and economic performance, findings on their impact on private sector development remain inconclusive and at times contradictory. Some studies suggest that FDI and remittances can stimulate private sector growth by easing credit constraints, enhancing technological capabilities, and supporting entrepreneurial activities (Acheampong et al., 2023; Atuma et al., 2024; Okeke & Chukelu, 2024). These results point to the potential of foreign capital to complement domestic financial gaps and promote structural transformation. However, other empirical findings show that certain forms of inflows particularly foreign aid and short-term portfolio investments may weaken the domestic private sector by increasing dependence, fostering macroeconomic instability, or crowding out local firms through exchange rate appreciation and competitive asymmetries (Herzer & Grimm, 2012; Ajide & Osinubi, 2022; Aljonaid et al., 2022). Moreover, much of the literature has focused on broader regional or cross-country contexts such as Sub-Saharan Africa (Acheampong et al., 2023; Diallo et al.,

2021), Southeast Asia (Nguyen et al., 2021), or Bangladesh (Guo et al., 2024), with relatively few studies providing a country-specific analysis for Nigeria. Even within the Nigerian context, existing studies tend to examine specific inflows (e.g., remittances) or sectors in isolation, offering fragmented insights into the broader impact of foreign capital on private sector development (Igbinedion, 2023; Atuma et al., 2024).

In addition to these conceptual and empirical gaps, significant limitations exist in terms of both temporal scope and methodological rigor. Many earlier studies rely on data that do not reflect recent shifts in Nigeria's external financing landscape, with timeframes ending in the early 2000s or before 2020 (Herzer & Grimm, 2012; Al-Sadig, 2013). Furthermore, the econometric methods employed such as panel cointegration, vector error correction models, or ARDL often do not fully capture both the long-run equilibrium relationships and short-run dynamics across multiple forms of foreign inflows in a unified framework (Nguyen et al., 2021; Guo et al., 2024; Adeosun et al., 2021). While some Nigerian studies adopt ARDL techniques to assess the effects of remittances and credit (Hussaini et al., 2021; Atuma et al., 2024), there remains a notable absence of studies applying FMOLS a robust estimator for long-run relationships to evaluate the aggregate and disaggregated effects of foreign capital inflows (FDI, aid, remittances, and portfolio investment) on private sector development over an extended horizon. Therefore, this study addresses a critical gap by employing the FMOLS technique over the period 1990 to 2023 to investigate the long-term relationship between foreign capital inflows and private sector development in Nigeria. Through this approach, the

study seeks to generate empirically grounded insights that can inform evidence-based policymaking for leveraging foreign capital in support of sustainable private sector advancement.

### 1.3 Research Questions

Arising from the above research problem, the following research questions are raised to guide the study:

i. What is the impact of foreign direct investment on private sector development in Nigeria?
ii. To what extent does foreign portfolio investment affect private sector development in Nigeria?
iii. What is the effect of foreign aid on private sector development in Nigeria?
iv. How do foreign remittances influence private sector development in Nigeria?

### 1.4 Research Objectives

The main objective of this study is to examine the effect of foreign capital inflows on private sector development. The specific objectives include to:

i. analyze the impact of foreign direct investment on private sector development in Nigeria;

ii. assess the effect of foreign portfolio investment on private sector development in Nigeria;
iii. examine the effect of foreign aid on private sector development in Nigeria; and
iv. investigate the influence of foreign remittances on private sector development in Nigeria.

### 1.5 Research Hypotheses

The following hypotheses stated in the null form shall be tested:

i. Foreign direct investment has no significant impact on private sector development in Nigeria.
ii. Foreign portfolio investment has no significant effect on private sector development in Nigeria.
iii. Foreign aid has no significant effect on private sector development in Nigeria.
iv. Foreign remittances have no significant influence on private sector development in Nigeria.

### 1.6 Scope of the Study

This study investigates the impact of foreign capital inflows on private sector development in Nigeria, with specific emphasis on four principal components: foreign aid, remittances, foreign direct investment (FDI), and foreign portfolio investment (FPI). The analysis is

geographically limited to Nigeria to provide a focused examination of how external capital interacts with domestic private sector dynamics, particularly given Nigeria's position as the largest recipient of capital inflows in Sub-Saharan Africa and the centrality of its private sector to employment generation and economic output. The study covers the period from 1990 to 2024, a span selected to reflect critical phases in Nigeria's economic trajectory, including the post-Structural Adjustment Programme liberalization in the early 1990s, the banking sector consolidation of 2004–2005, the 2008–2009 global financial crisis, the 2014–2016 oil price shocks, the COVID-19 pandemic disruptions, and the ensuing inflationary and exchange rate pressures in the post-pandemic period. This comprehensive timeframe allows for a robust assessment of both short-term and long-term effects, while capturing structural transformations in the flow and composition of foreign capital and their implications for private sector development.

### 1.7 Significance of the Study

This study is important as it examines how key components of foreign capital inflows such as foreign aid, remittances, foreign direct investment (FDI), and portfolio investment affect private sector development in Nigeria. By exploring these channels over a long-term horizon, the research provides insights into how external finance shapes the growth, competitiveness, and structural evolution of the private sector.

**Methodological Significance**: The study applies the Fully Modified Ordinary Least Squares (FMOLS) technique to assess long-run relationships between foreign capital inflows and private sector development from 1990 to 2023. This addresses methodological limitations in previous Nigerian studies that used shorter timeframes and less robust estimators such as OLS, ARDL, or GMM. By capturing the distinct effects of multiple inflow types within a unified framework, the study offers a more comprehensive empirical foundation.

**Policy Relevance**: Findings will inform institutions such as the Central Bank of Nigeria, Ministry of Finance, and other regulators on how different forms of capital inflows impact private sector development. This evidence can guide capital flow management, investment policy reform, and exchange rate strategies aimed at enhancing the stability and productivity of foreign inflows.

**Private Sector and Investor Insight**: Domestic firms, financial institutions, and investors will gain a clearer understanding of how variations in foreign capital availability influence financing conditions and investment decisions. This will support more strategic planning and resource mobilisation in the private sector.

**International Development Partners**: Donor agencies and development finance institutions will benefit from evidence on how external financing mechanisms interact with domestic private sector outcomes. This can enhance the design and targeting of aid, remittance initiatives, and investment facilitation programmes.

**Academic Contribution**: The study contributes to the literature on capital flows and development by offering Nigeria-specific, long-period empirical evidence. It expands scholarly understanding of how diverse capital inflow types influence private sector development, providing a valuable reference for future research in emerging market contexts.

### 1.8 Limitation of the Study

A key limitation of this study lies in the availability, accuracy, and consistency of data on foreign capital inflows specifically foreign aid, remittances, foreign direct investment (FDI), and portfolio investment and their relationship with private sector development in Nigeria between 1990 and 2023. Variations in reporting standards, missing data, and historical revisions across national and international databases may affect measurement reliability. To address this, the study relies on credible sources such as the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS), and the World Bank, employing data cleaning and interpolation techniques to enhance consistency. Additionally, while FMOLS is well-suited for estimating long-run relationships in cointegrated series, its effectiveness may be constrained by structural breaks or model sensitivity to outliers, which could affect result robustness. These issues are mitigated through comprehensive pre-estimation diagnostics and robustness checks. Moreover, the study's focus on Nigeria, though deliberate, limits the generalisability of findings to other contexts with differing institutional dynamics. Remittances transferred via informal channels and classification issues in FDI reporting also

present measurement challenges. Nonetheless, by disaggregating foreign inflows and applying a long-term econometric framework, the study provides a rigorous and context-specific analysis that strengthens its relevance to Nigeria's private sector development discourse.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter is organized into three main sections: the conceptual literature, the theoretical literature, and the empirical literature. The conceptual literature discusses key concepts relevant to the study, the theoretical literature outlines significant theories that provide the foundation for the research, while the empirical literature reviews prior studies that are closely connected to the present investigation and highlights their major findings. The chapter concludes by presenting the research gaps from the reviewed empirical literature.

## 2.2 Conceptual Review

### 2.2.1 Private Sector

The private sector is conventionally defined as the segment of a national economy that is operated by private individuals and enterprises, rather than by the state. It encompasses a broad spectrum of profit-seeking entities that function within competitive market structures, independent of direct government control (World Health Organization, 2023). According to Delmon (2021), the private sector refers to entities that are financed and managed privately, with their core operations driven by profit incentives and market risk-taking. Alford and Greve (2017) add that the private sector's distinguishing feature lies in its strategic autonomy and accountability to shareholders rather than to the public. This implies that, unlike the

public sector where efficiency is often secondary to equity and service coverage, private enterprises are evaluated primarily based on productivity, profitability, and market competitiveness. Müller (2016) points out that the efficiency-oriented logic of private sector practices is largely influenced by market dynamics and cost–benefit optimisation, often creating a divergence from the normative service delivery motives found in the public domain. Tsui, Bian, and Cheng (2014) argue that the private sector also operates within regulatory environments shaped by state institutions, indicating that while the sector is "private," its functionality is co-dependent on the broader governance framework. This highlights a nuanced understanding of autonomy that is subject to state-determined legal and fiscal boundaries, reflecting a structural interdependence between private initiative and institutional governance (Pieper & Pieper, 2018). Thus, the private sector cannot be understood solely as an arena of economic freedom; it is also an institutional construct embedded in broader socio-political arrangements that condition its scope and operation.

The private sector serves as both a productive agent and a catalyst for structural transformation in an economy, with its functions extending beyond mere profit generation. Bracking and Ganho (2011) contend that private sector activity underpins investment mobilisation, job creation, innovation, and wealth distribution through capital accumulation and productivity growth. Stevenson (2010) affirms that private enterprises provide the primary engine for industrial diversification and entrepreneurial innovation, especially in transitioning and developing economies. However, the normative celebration of the private

sector as inherently efficient and growth-inducing has been challenged. Rao (2016) cautions against the assumption that private entities are universally more efficient than public ones, citing empirical cases where cost-cutting undermined quality and social equity. Alford and Greve (2017) similarly argue that the strategic management of private enterprises often prioritises short-term returns over long-term societal impact, thereby producing market failures that necessitate regulatory intervention. The components of the private sector ranging from micro-enterprises and SMEs to large multinationals interact differentially with markets, capital, and labour (Gitterman & Britto, 2021). Tsui et al. (2014) emphasise the heterogeneity within the sector, noting that informal enterprises, while technically private, often lack the structural support to compete on equitable terms with formal actors. This internal stratification underscores that the private sector is not a homogenous bloc but a differentiated space marked by inequalities in capital access, regulatory visibility, and market power. As such, while the private sector is pivotal in fostering growth and innovation, its outcomes are contingent on institutional design, capital distribution, and regulatory enforcement (Müller, 2016; Pieper & Pieper, 2018).

### 2.2.2 Private Sector Development

Private Sector Development (PSD) refers to a multidimensional and strategic process aimed at enhancing the capabilities, competitiveness, and institutional framework necessary for the growth of privately-owned enterprises within an economy. Seck (2014) defines PSD as a coordinated approach to strengthening the institutional and economic conditions that support

the emergence, operation, and expansion of private businesses. Delmon (2021) similarly views PSD as a framework for attracting private investment into key sectors, particularly infrastructure, by improving the investment climate, reducing regulatory bottlenecks, and enabling private capital mobilisation. The foundational premise of PSD lies in its capacity to unlock the productive potential of private actors by removing institutional and structural constraints (Gitterman & Britto, 2021). However, this conception is not without contention. Alford and Greve (2017) argue that the normative emphasis on market liberalisation in PSD frameworks often downplays issues of equity, institutional asymmetry, and governance failures. Pieper and Pieper (2018) caution that private actors within welfare-dependent sectors, such as health and education, can introduce stratification and exacerbate access disparities. Furthermore, the assumption that PSD leads to efficiency gains is questioned by Rao (2016), who finds that market-driven models may substitute cost-cutting for real productivity, thereby undermining service quality and long-term development. Thus, while PSD is strategically oriented towards economic growth and diversification, its actual outcomes are dependent on policy coherence, regulatory strength, and social safeguards (Müller, 2016).

The assessment of PSD requires robust indicators that reflect both the quantitative and qualitative dimensions of private sector functionality. Credit to the private sector is one of the principal measures of PSD, as it indicates the extent of financial inclusion and access to productive capital. Igan and Tan (2017) highlight that the expansion of domestic credit to the private sector is closely linked to investment activity and firm-level innovation. This is

corroborated by Ekpo, Afangideh, and Udoh (2014), who associate improvements in private sector credit with industrial diversification in West African economies. However, credit growth is not intrinsically beneficial; Kneer and Raabe (2024) observe that excessive capital inflows, particularly via portfolio investments, can fuel speculative lending rather than support productive enterprise. Beyond credit, other important measures include business start-up rates, investment-to-GDP ratios, and enterprise productivity (International Development Research Centre, 2013). Sasu (2023) reports that in Nigeria, private investment as a share of GDP reached 17.2% in 2023, reflecting modest but uneven progress in domestic capital formation. However, the high volatility of capital importation, as documented by the National Bureau of Statistics (2024), suggests that external dependencies and financial instability still constrain sustained PSD. Stevenson (2010) emphasises that meaningful PSD must also address institutional enablers, such as legal reform, contract enforcement, and regulatory predictability. Moreover, Tsui, Bian, and Cheng (2014) underline the importance of human capital and managerial competence as endogenous drivers of PSD. Therefore, measuring PSD cannot be reduced to quantitative metrics alone; it necessitates critical evaluation of the underlying structures, incentives, and governance mechanisms that shape private sector participation and impact.

### 2.2.3 Foreign Capital

Foreign capital refers to the inflow of financial resources, assets, or investments from external economies into a host country's economic system, primarily to stimulate productive

activity and capital formation. Schularick (2016) defines foreign capital as cross-border capital flows that include foreign direct investment (FDI), foreign portfolio investment (FPI), foreign aid, remittances, and external debt. These inflows are channelled through various instruments and actors, including multinational enterprises, international financial institutions, foreign governments, and diaspora communities (Nechaev & Tsaregorodtseva, 2018). According to Akhtaruzzaman (2019), foreign capital is underpinned by capital mobility, which allows resources to move across borders in response to differential returns, risk profiles, and macroeconomic conditions. However, this mobility is neither neutral nor automatic in its developmental outcomes. While Igan and Tan (2017) observe that capital inflows may stimulate domestic credit expansion, particularly in financial systems with low initial liquidity, such expansion is often procyclical and may increase vulnerability to external shocks. This conditionality challenges the simplistic view of foreign capital as universally beneficial. Sengupta (2025) states that foreign capital, especially FDI, functions not only as a financial input but as a conduit for knowledge transfer, technological spillovers, and integration into global value chains, yet its effectiveness is contingent on absorptive capacity and institutional quality (Moon, 2015). Thus, foreign capital is best understood not as a monolithic asset class but as a multi-dimensional phenomenon involving diverse instruments, actors, and structural asymmetries.

### 2.2.4 Foreign Capital Inflows

Foreign capital inflows refer to the movement of financial resources from external economies into a domestic economy, primarily intended to supplement domestic capital for investment and development purposes. Schularick (2016) defines these inflows as cross-border movements of capital that enter national economies through formal channels to support productive or financial activities. Akhtaruzzaman (2019) elaborates that such inflows emerge from asymmetries in capital accumulation across nations, often driven by investors seeking higher returns in developing economies with perceived growth potential. This movement is underpinned by the principle of capital mobility, which allows global capital to reallocate itself from regions of surplus to regions of scarcity. However, this foundational view obscures critical questions surrounding the autonomy of recipient states and the strategic interests embedded in such flows. Delmon (2021) argues that capital inflows while framed as development enablers are often structured around foreign investors' priorities, frequently privileging risk-adjusted returns over developmental impact. Similarly, Igan and Tan (2017) note that capital inflows can overstimulate domestic credit systems, increasing macro-financial fragility, especially in economies with underdeveloped regulatory institutions. Hence, foreign capital inflows should not be interpreted merely as a technical solution to capital shortages; rather, they are contested economic instruments with implications for sovereignty, policy space, and developmental autonomy.

Foreign capital inflows are neither ideologically neutral nor economically deterministic in their outcomes. As noted by Nechaev and Tsaregorodtseva (2018), while such inflows are

often legitimised through the rhetoric of development, they are also deeply implicated in the reconfiguration of power relations between donor and recipient economies. Warjiyo and Juhro (2019) underscore that foreign capital inflows, despite offering liquidity and external financing, may generate procyclical patterns that exacerbate financial volatility during periods of external shocks. This raises questions about the sustainability and predictability of foreign capital as a development tool. Alford and Greve (2017) highlight the strategic nature of private actors involved in international capital flows, observing that their decisions are not governed by public interest but by market logic and shareholder value, thereby limiting the developmental leverage of recipient countries. Müller (2016) similarly critiques the efficiency assumption embedded in capital inflows discourse, arguing that such flows often reflect speculative imperatives rather than long-term productive investment. Pieper and Pieper (2018) further warn that the presence of foreign capital in welfare-critical sectors can produce market stratification, leading to uneven access and weakened public provisioning. Consequently, the concept of foreign capital inflows must be understood not only in financial terms but as a complex institutional and political process that reshapes the developmental trajectory, regulatory sovereignty, and market structure of host economies.

#### 2.2.4.1 Foreign Direct Investment

Foreign Direct Investment (FDI) is commonly defined as a cross-border investment in which a resident entity in one economy obtains a lasting interest and a significant degree of influence in the management of an enterprise located in another economy (Moon, 2015;

Sengupta, 2025). The defining feature of FDI, as distinguished from other forms of capital inflows, lies in the element of control or ownership, typically represented by an equity stake of at least 10 percent (Otto, 2021). Delmon (2021) affirms that FDI involves not merely the transfer of capital, but the transfer of know-how, technology, and managerial oversight, which can integrate the host economy into global value chains. In practice, this means that FDI goes beyond portfolio investment, which is passive and market-oriented, by actively shaping firm-level decision-making, sectoral structures, and national industrial trajectories (Krajewski & Hoffmann, 2019). Nonetheless, the assumption that FDI inherently benefits host economies is increasingly challenged. Kerner (2014) critiques the definitional neutrality of FDI by emphasizing that its classification often masks the divergent motivations of investors ranging from strategic resource extraction to tax avoidance via transfer pricing and obscures the uneven power dynamics that underpin investment relationships.

The conceptualisation of FDI as a development enabler presumes conducive institutional conditions, yet this assumption frequently collapses under empirical scrutiny. Alford and Greve (2017) argue that private sector actors, including foreign investors, are governed by profit-maximising rationalities that may conflict with the long-term interests of host countries, particularly where regulatory oversight is weak. Similarly, Pieper and Pieper (2018) contend that in welfare-sensitive sectors, such as health and education, the insertion of foreign private capital often results in stratified access to services and institutional fragmentation. Müller (2016) further complicates the FDI narrative by highlighting how private sector practices

imported through foreign investment may prioritise efficiency over equity, creating systemic exclusions. This view aligns with Rao (2016), who critiques the celebratory stance on private investment efficiency, demonstrating how FDI can lead to cost-cutting and diminished public value, particularly when profit imperatives override developmental goals. Tsui, Bian, and Cheng (2014) argue that while FDI may induce technological diffusion and enhance firm competitiveness, these benefits are conditioned by the absorptive capacity of domestic institutions, labour markets, and infrastructure. Thus, the definitional clarity of FDI is compromised by its practical ambiguities—it is simultaneously an instrument of global capital expansion and a site of socio-economic contestation. Its developmental value cannot be assumed but must be situated within the structural and institutional conditions that determine whether FDI crowds in or crowds out domestic investment and capacities (Diallo, Jacolin, & Rabaud, 2021).

#### 2.2.4.2 Foreign Portfolio Investment

Foreign Portfolio Investment (FPI) refers to cross-border financial investments made by non-residents in a country's financial assets typically in equity and debt instruments without acquiring a controlling stake or lasting interest in the firms involved (Delmon, 2021). Unlike Foreign Direct Investment, which entails managerial involvement and long-term commitment, FPI is essentially speculative and market-driven, with investors primarily seeking short-term returns from fluctuations in financial markets (Collins, 2023). The defining characteristic of FPI is its high liquidity and reversibility, as investors can divest quickly in response to

macroeconomic shifts or perceived risks (Nechaev & Tsaregorodtseva, 2018). This speculative nature is what renders FPI a volatile and often destabilising force within host economies. Müller (2016) contends that private capital, including portfolio flows, tends to operate under a logic of efficiency that prioritises financial gains over long-term institutional strengthening or social outcomes. Alford and Greve (2017) further argue that actors within the FPI domain are governed by private sector rationalities that fundamentally diverge from public welfare concerns, often resulting in misaligned development priorities and short-termism in capital allocation. As such, FPI should not be naively categorised as "investment" in a developmental sense, since its logic of accumulation is disconnected from real sector transformation or employment generation.

FPI is often framed as a vehicle for improving capital market liquidity, increasing foreign exchange reserves, and fostering integration into global financial markets, yet these benefits are fraught with trade-offs. Pieper and Pieper (2018) argue that the entrance of private foreign capital into national financial systems often leads to the commodification of economic governance, where macroeconomic policy becomes subordinated to investor confidence and external risk assessments. Rao (2016) notes that the appeal of FPI lies in its apparent efficiency manifested in rapid capital mobilisation but cautions that such efficiency is illusory when assessed against the social costs of financial volatility. Warjiyo and Juhro (2019) underscore that FPI inflows are procyclical, amplifying boom-bust cycles and exacerbating macroeconomic instability, particularly in developing economies with shallow financial

systems. Delmon (2021) reinforces this point by observing that the risk-return calculus of portfolio investors incentivises disinvestment at the first sign of economic distress, often triggering currency depreciation, capital flight, and asset price collapses. Furthermore, Tsui, Bian, and Cheng (2014) highlight the structural asymmetry embedded in FPI flows, whereby foreign investors enjoy protections through bilateral investment treaties, while domestic institutions bear the brunt of capital reversals. Thus, while FPI is frequently incorporated into national development strategies as a source of external finance, it introduces systemic risks and institutional distortions that complicate its developmental utility. Its designation as "investment" is therefore conceptually misleading, as it operates more accurately as transnational speculative finance with limited alignment to national development goals.

#### 2.2.4.3 Foreign Remittances

Foreign remittances are broadly defined as cross-border monetary transfers made by migrants to their home countries, typically to support family members or to finance consumption and investment. Ratha, Eigen-Zucchi, and Plaza (2016) define remittances as "the sum of workers' remittances, compensation of employees, and migrant transfers," which are recorded as part of the balance of payments. According to Khan (2023), foreign remittances constitute an important and sustained source of external finance for many developing economies, often surpassing foreign direct investment or official development assistance. Bakker (2015) contends that remittances have been increasingly institutionalised as a development tool, integrated into macroeconomic policy frameworks despite their original, private character.

This transformation has attracted both praise and critique. While remittances are often seen as stabilising counter-cyclical flows, particularly during economic downturns (Orozco, 2013), the assumption that they promote long-term economic development is deeply contested. Guermond (2022) argues that remittance governance is shaped by political and financial institutions that actively seek to channel these flows into formalised and securitised circuits, often depoliticising their socio-economic implications and framing them as development substitutes for more structural interventions. Thus, although remittances originate as familial transfers grounded in kinship obligations, their conceptualisation as tools for macroeconomic stability and development is a product of political economy transformations that reposition migrants as financial agents of development rather than social actors.

The definitional scope of remittances masks the underlying contradictions embedded in their functionality and framing. Busumtwi-Sam (2018) notes that while remittances are classified as private capital flows, they often function as informal welfare mechanisms in contexts of weak public provisioning, blurring the line between public responsibility and private obligation. Nicoara and Burns (2019) argue that foreign remittances should be considered "privately provided international aid," a conceptual reframing that highlights the displacement of state responsibilities onto migrant households. Hoang and Yeoh (2015) reinforce this critique by emphasising that remittances are not neutral flows but are socially embedded practices shaped by gendered, classed, and transnational labour regimes. Feld (2021) further complicates the definitional narrative by linking remittances to the global

phenomenon of brain drain, suggesting that these flows often come at the cost of skilled labour flight from developing economies. Moreover, Bakker (2015) warns that the increasing integration of remittances into formal financial markets introduces risks of financialisation, where remittance corridors are commodified by banks and state actors, transforming intimate familial support into instruments of profit and policy leverage. While remittances are formally counted as private, their implications are deeply public, touching on questions of financial sovereignty, state capacity, and global inequality. In essence, to define remittances simply as private transfers is to overlook the structural dependencies and political economies in which they are embedded and through which they acquire their contested significance.

#### 2.2.4.4 Foreign Aid

Foreign aid is commonly defined as the voluntary transfer of public resources from one country or multilateral institution to another, often with the stated aim of promoting economic development and welfare. Dietrich (2021) characterises foreign aid as a politically structured financial and technical assistance provided by donor governments or international organisations to recipient countries. Koch (2024) further contends that foreign aid is not a neutral act of generosity but is embedded within complex geopolitical and economic interests that reflect the priorities of donors more than the needs of recipients. According to Ullah, Ibrahim, and Islam (2025), foreign aid is increasingly framed as both a tool for empowerment and a mechanism of entrapment, illustrating the dual nature of its intent and outcomes. This paradox lies at the core of aid's definitional complexity. Mikesell (2017) maintains that

foreign aid can take the form of grants, concessional loans, or technical cooperation, yet the conditionalities tied to such flows often compromise the fiscal sovereignty of recipient states. As Delmon (2021) observes, while aid is typically promoted as developmental capital, it often reinforces dependency, particularly where institutional weaknesses in the recipient country enable rent-seeking behaviours and poor absorption capacity.

The assumptions of foreign aid obscure its ideological underpinnings and structural limitations. Alford and Greve (2017) argue that foreign aid initiatives frequently mirror the strategic rationalities of private sector actors, with donor governments and international agencies importing market-oriented governance frameworks under the guise of development cooperation. Pieper and Pieper (2018) further highlight that foreign aid can introduce private sector logics into welfare provision, resulting in marketisation of public services and erosion of state capacity. In this regard, Müller (2016) cautions that the operational logic of aid aligns more closely with managerial efficiency and institutional control than with equitable distribution or participatory development. Herzer and Grimm (2012) provide empirical support for this critical stance, finding that foreign aid can exert a statistically significant negative effect on domestic private investment, thereby undermining long-term productive transformation. Similarly, Mossie (2014) concludes that aid often produces adverse macroeconomic effects such as Dutch Disease, and that its developmental impact is contingent upon institutional quality and policy coherence. Hence, the definitional framing of foreign aid as developmental obscures its embedded contradictions; simultaneously a

financial lifeline and a vector of external control, shaped as much by donor interests as by recipient needs. As such, foreign aid should be understood not merely as a fiscal instrument but as a politically conditioned intervention with profound implications for state-building, sovereignty, and socio-economic development.

### 2.3. Theoretical Review

When examining the effect of foreign capital inflows on private sector development, several theoretical frameworks offer foundational insights. The major and most frequently used theories in such studies are:

#### 2.3.1. Dependency Theory

Dependency theory, primarily advanced by Latin American scholars such as Raúl Prebisch and later refined by Theotonio dos Santos and Fernando Henrique Cardoso, offers a structuralist critique of the global capitalist system and its implications for development in peripheral economies. Emerging in the mid-20th century as a counterpoint to modernization theory, dependency theory asserts that underdevelopment in the Global South is not a natural stage in economic evolution, but a historical outcome of exploitative relationships between core and periphery countries (Santos, 1970; Prebisch, 1950). The core argument is that the international economic system is hierarchically structured in such a way that developed countries (core) extract surplus from developing ones (periphery), thereby maintaining their own economic dominance. Within this framework, foreign capital inflows—including foreign

direct investment (FDI), foreign aid, and portfolio investments—are viewed not as neutral financial mechanisms, but as instruments of external control that reproduce dependency and limit autonomous private sector development in the recipient economy. The logic of dependency thus challenges the neoclassical assumption of capital scarcity and the efficacy of foreign capital in stimulating domestic private investment, instead positing that such flows often extract value from, rather than build, domestic productive capacities (Herzer & Grimm, 2012; Mossie, 2014).

In the context of private sector development, dependency theory illuminates the political economy of foreign capital inflows and their tendency to privilege externally oriented and capital-intensive enterprises over locally embedded and labor-intensive industries. Bracking and Ganho (2011) argue that foreign investment, especially when channelled into strategic sectors such as finance, infrastructure, and energy, tends to serve the interest of transnational capital rather than the developmental priorities of host countries. This asymmetry weakens local entrepreneurial ecosystems, limits technology transfer, and exacerbates dualism within the private sector—creating islands of modern, foreign-dominated enterprises amid a sea of undercapitalized local firms. Empirical studies in Sub-Saharan Africa reinforce this critical stance. For instance, Diallo, Jacolin, and Rabaud (2021) demonstrate that while FDI may have long-run crowding-in effects, its short-term impact often includes displacement of domestic firms due to competition asymmetries and unequal access to credit and technology. These findings resonate with the dependency school's contention that the benefits of foreign

capital are systematically skewed in favour of external investors and often contingent upon suppressing local capitalist development. Such a pattern is particularly evident in Nigeria, where National Bureau of Statistics (2024) data shows that FDI constituted only 1.15% of total capital importation in Q2 2024, while volatile portfolio investments dominated. This structural composition of capital inflows reflects the uneven and subordinate integration of Nigeria into global financial markets, consistent with dependency theory's claims.

The instrumental use of foreign aid further corroborates the tenets of dependency theory. Scholars such as Mikesell (2017) and Koch (2024) argue that foreign aid, rather than closing developmental gaps, often reinforces clientelistic governance, bureaucratic fragmentation, and rent-seeking behaviour in recipient states. Herzer and Grimm (2012) provide robust panel data evidence showing that aid exerts a statistically significant negative effect on private investment, a finding echoed by Mossie (2014), whose empirical analysis across East African countries reveals that aid inflows are frequently associated with Dutch Disease effects, whereby real exchange rate appreciation undermines the competitiveness of domestic industries. Furthermore, foreign aid is often accompanied by conditionalities that promote neoliberal structural adjustment policies, including privatisation and trade liberalisation, which, while intended to stimulate private sector growth, often lead to deindustrialisation and the erosion of state capacity (Dietrich, 2021; Ajide & Osinubi, 2022). The World Bank and IMF-sponsored reforms in Nigeria during the 1980s and 1990s exemplify this trajectory, where foreign loans and aid packages ushered in austerity measures and liberalisation without

the institutional capacity to manage the transition—ultimately constraining private sector resilience (Seck, 2014). This aligns with Alford and Greve's (2017) assertion that strategic interventions by foreign actors reshape local governance not to support local entrepreneurship, but to align domestic policies with donor priorities and global capital flows.

Even in the case of foreign remittances, which are often celebrated as autonomous and poverty-reducing transfers, dependency theorists warn against their depoliticised framing. Guermond (2022) and Bakker (2015) argue that remittances have been rebranded from familial survival strategies into financial instruments within global development discourse, a shift that obscures the structural failures of domestic economies and the state's abdication of welfare responsibilities. In Nigeria, where remittances exceeded $20 billion in recent years, studies show that while they provide crucial liquidity for household consumption, their impact on private sector investment remains limited and highly conditional (Atuma et al., 2024; Igbinedion, 2023). The dependency critique interprets this as a manifestation of externalisation: where labour is exported, value is repatriated through remittances, and domestic policy becomes dependent on an emigrant workforce instead of building robust, endogenous economic systems. This paradox is consistent with the argument made by Busumtwi-Sam (2018) and Nicoara and Burns (2019), who conceptualise remittances as "privately provided international aid" that reflects—and entrenches—the structural deficiencies of national development models. In mathematical terms, dependency theory does not rely on formalised investment equations, yet its logic is reflected in econometric findings

such as the negative elasticity of foreign aid on private investment (Herzer & Grimm, 2012) or the statistically insignificant impact of remittances on productive sectors in the long run (Okeke & Chukelu, 2024). These results underscore the importance of structural variables—such as institutional quality, class formation, and historical patterns of integration—over purely financial indicators in assessing the developmental implications of foreign capital inflows.

In sum, dependency theory offers a powerful conceptual lens to critique the optimistic assumptions embedded in mainstream development models that equate capital inflows with progress. It reorients the analysis of private sector development from a technocratic focus on finance and productivity to a structural interrogation of power, control, and global inequality. While the theory has been criticised for its determinism and limited agency for peripheral states, its core insights remain relevant in contexts such as Nigeria, where the dominance of short-term, speculative capital (portfolio investment) over long-term productive finance (FDI), and the persistent reliance on remittances and aid, reveal a deep entrenchment of dependent economic relations. This framework compels scholars and policymakers to move beyond simplistic financial metrics and instead interrogate the broader systems of accumulation, extraction, and governance that shape the outcomes of foreign capital inflows on domestic private sector development.

### 2.3.2. Modernisation Theory

Modernisation theory, developed prominently by Walt W. Rostow in *The Stages of Economic Growth: A Non-Communist Manifesto* (1960), provides one of the earliest and most influential frameworks for understanding the role of foreign capital inflows in private sector development. Rooted in classical liberal economic thought, the theory posits that developing countries can achieve sustained growth by emulating the historical trajectories of industrialised Western economies. Rostow outlined a linear, five-stage model of development from traditional society to the age of high mass consumption arguing that external financial capital, especially foreign aid and investment, is essential to catalyse the "take-off" stage of economic growth. The presumption underlying this model is that developing nations suffer from a capital gap a deficiency of savings and investment which foreign capital inflows can fill, thereby accelerating domestic industrialisation, technological upgrading, and market expansion (Rostow, 1960). Thus, foreign direct investment (FDI), foreign aid, and even remittances are interpreted as benign instruments of modernity, designed to transfer financial and technical resources from advanced economies to underdeveloped ones, enabling their transformation into productive and globally integrated capitalist economies.

However, this theory, while influential, rests on a number of optimistic assumptions that have been challenged by empirical realities and critical scholarship. The idea that foreign capital will unproblematically stimulate domestic private sector development overlooks the structural asymmetries in the global economic system and the variegated capacities of domestic institutions to absorb such inflows productively. For instance, Sengupta (2025)

acknowledges that FDI may play a vital role in capital formation and technology transfer, but only in contexts where domestic infrastructure, regulatory frameworks, and institutional integrity are sufficiently robust. Otherwise, capital inflows can exacerbate economic dualism boosting capital-intensive, foreign-dominated sectors while marginalising indigenous enterprises (Delmon, 2021). Similarly, empirical studies have shown that capital inflows do not automatically translate into increased private investment or employment generation. Alford and Greve (2017), for example, point out that private investors are primarily driven by profitability rather than developmental outcomes, which can lead to a misalignment between foreign capital priorities and national development goals. This disconnect is further exacerbated in Nigeria, where data from the National Bureau of Statistics (2024) show that FDI comprised only 1.15% of total capital importation in Q2 2024, while speculative portfolio investments dominated suggesting a form of capital inflow that is ill-suited to supporting long-term private sector development.

Moreover, the modernisation narrative's portrayal of foreign aid as a necessary stimulus for domestic private sector growth has faced significant criticism. While early formulations assumed aid would be channelled toward productive investment, more recent evidence demonstrates its mixed and often counterproductive outcomes. For instance, Herzer and Grimm (2012) use panel cointegration methods to show a statistically significant negative long-run relationship between foreign aid and private investment across multiple developing countries. This supports the contention by Mossie (2014) that aid can generate Dutch Disease

effects and incentivise rent-seeking rather than entrepreneurial activity, particularly in institutional contexts lacking accountability. In contrast to modernisation theory's optimistic lens, this body of research suggests that foreign capital can distort domestic incentives and crowd out private investment, especially when not embedded within coherent industrial and fiscal policy frameworks. While modernisation theory emphasises the technical function of capital as a gap-filling device, it fails to account for how the political economy of aid and investment including donor conditionalities and market liberalisation mandates may undercut the very state capacity and policy autonomy required for private sector flourishing (Koch, 2024; Ajide & Osinubi, 2022).

Despite its shortcomings, aspects of modernisation theory continue to be echoed in recent econometric studies that emphasise the potential long-run complementarities between FDI and private sector development. For example, Diallo, Jacolin, and Rabaud (2021), using a Pooled Mean Group estimator, find that in Sub-Saharan Africa, a 1% increase in the ratio of FDI to GDP is associated with a 0.3% increase in the rate of private domestic investment in the long run—albeit following a short-run crowding-out effect. Similarly, the study by Acheampong et al. (2023) supports the view that FDI contributes positively to domestic credit allocation to the private sector, which is a critical input for firm growth. These findings partially validate the modernisation view that foreign capital inflows can catalyse private sector expansion, but they also underscore that these effects are neither automatic nor universally positive. Contextual factors such as financial sector depth, governance quality,

and the capacity to integrate FDI into broader development strategies remain decisive. A relevant formal expression derived from the neoclassical Solow-Swan growth model, often associated with modernisation theory, is:

$$Y=AK^{\alpha}L^{1-\alpha}$$

where Y is output, A is total factor productivity, K is capital (including foreign capital), L is labour, and α is the output elasticity of capital. In this framework, an increase in capital K, through FDI or aid, should theoretically raise output Y and stimulate private sector productivity. Yet, in real-world scenarios, if A which includes institutions, technology, and governance remains stagnant or deteriorates, the returns to capital accumulation diminish, making such inflows less effective or even detrimental (Asamoah & Alagidede, 2023).

### 2.3.3. Crowding-In and Crowding-Out Hypotheses (Neoclassical Investment Theory)

The Crowding-In and Crowding-Out Hypotheses, rooted in neoclassical investment theory, provide a pivotal framework for understanding the impact of foreign capital inflows on private sector development. Originally grounded in the work of classical and neoclassical economists such as John Maynard Keynes and later formalised in empirical investment models by Jorgenson (1963), this theory posits that capital inflows may either stimulate (crowd-in) or suppress (crowd-out) domestic private investment depending on structural conditions within the host economy. The fundamental premise is that foreign capital serves as a complement or substitute to domestic investment. If complementarity exists, inflows

enhance domestic entrepreneurial activity by improving access to finance, technology, and networks, thereby crowding in local investment. Conversely, when foreign capital displaces local entrepreneurs either by dominating credit markets, labour, or market share, a crowding-out effect occurs. These dynamics are most accurately captured through modified neoclassical investment equations such as:

$$I = \alpha + \beta_1 \cdot Y + \beta_2 \cdot FCI + \beta_3 \cdot r + \epsilon$$

Where I is private investment, Y is output (GDP), FCI represents foreign capital inflows, r is the interest rate, and $\epsilon$ is the error term. A positive coefficient $\beta_2$ signifies crowding-in, while a negative one indicates crowding-out. The application of this framework is central to examining the contradictory empirical realities observed across developing economies, including Nigeria, where foreign capital inflows have exhibited volatile effects on private investment performance.

In recent empirical literature, this theoretical lens has been applied with increasing sophistication to decipher the sectoral and temporal complexities of capital inflows. Diallo, Jacolin, and Rabaud (2021) offer robust evidence from Sub-Saharan Africa showing that while FDI initially exhibits weak crowding-out effects due to competitive asymmetries and implementation lags, it generates a significant crowding-in effect in the long run with a 1% increase in FDI-to-GDP ratio associated with a 0.3% rise in private domestic investment. Their use of Pooled Mean Group (PMG) and Dynamic Fixed Effects (DFE) models allows

for differentiation between short- and long-run outcomes, reinforcing the importance of time horizons in interpreting capital dynamics. Similar findings are echoed by Guo et al. (2024) in Bangladesh, where Vector Error Correction Models (VECM) show FDI positively affecting domestic investments across both temporal dimensions. These studies reinforce the hypothesis that crowding-in is more likely under conditions of absorptive capacity, institutional readiness, and sectoral synergy. For instance, Asamoah and Alagidede (2023) demonstrate that FDI only promotes real sector growth once financial development surpasses specific threshold levels, thus suggesting a conditional complementarity. In Nigeria, however, the National Bureau of Statistics (2024) indicates that FDI accounted for a mere 1.15% of total capital importation in Q2 2024, dwarfed by portfolio inflows at 53.93%. This skewed composition heavily tilted toward volatile and non-productive finance suggests that in Nigeria's case, the potential for crowding-in is severely undermined by the predominance of speculative capital and weak structural linkages.

Nonetheless, there exists a complex set of mediating factors that shape whether foreign capital inflows result in net positive or negative outcomes for the private sector. Alford and Greve (2017) and Pieper and Pieper (2018) highlight that foreign capital interacts with institutional arrangements in a way that may promote managerial efficiency and private-public partnerships, but may also entrench external influence and create dependency structures. The presence of multinational corporations (MNCs), for instance, can limit technology diffusion or restrict local firms to peripheral roles in the value chain, thereby

neutralising or reversing crowding-in effects (Delmon, 2021; Bracking & Ganho, 2011). In Nigeria, the lack of coherent industrial policy to harness FDI for upstream production or linkages has resulted in limited spillover into domestic enterprise growth, particularly in the manufacturing sector. Olorogun (2024) finds that while there exists a long-run co-integration between FDI and private sector-led growth in Sub-Saharan Africa, this effect is heavily moderated by sectoral composition and institutional coherence. Moreover, the increasing financialisation of capital flows, especially the dominance of portfolio investment, has heightened short-term volatility without corresponding improvements in credit availability to local firms (Kneer & Raabe, 2024). This condition is exemplified in Nigeria's capital market, where despite significant inflows into the banking and trading sectors in Q2 2024, credit constraints persist for SMEs and informal enterprises highlighting the disconnect between macro inflows and micro-level investment realities (Igbinedion, 2023).

Furthermore, domestic investment outcomes are also mediated by public investment dynamics and policy environments. Adeosun et al. (2021), examining Nigeria's capital formation from 1986 to 2017, identify a non-linear and asymmetric relationship between public and private investment, noting that negative shocks in public investment can sometimes trigger positive private sector responses, particularly when private actors step in to fill infrastructure gaps. However, such positive spillovers are inconsistent and often insufficient in environments where macroeconomic stability, regulatory predictability, and access to finance remain deficient. The dual logic of crowding-in and crowding-out is also

evident in empirical work on foreign aid. Herzer and Grimm (2012) establish that aid often exerts a statistically significant negative long-run impact on private investment, primarily due to its distortionary effects on domestic markets and its tendency to reinforce rent-seeking behaviour. Similarly, Mossie (2014) finds that foreign aid, when unaccompanied by complementary FDI or institutional reform, tends to displace private investment across Eastern Africa. These dynamics align with the broader theoretical contention that foreign capital's developmental impact is neither automatic nor unidirectional; rather, it is deeply conditioned by the interplay of macroeconomic management, institutional infrastructure, and sectoral integration (Stevenson, 2010; Seck, 2014). In sum, while the crowding-in hypothesis offers a persuasive rationale for attracting foreign capital to stimulate private sector development, the theory's real-world applicability depends significantly on whether host economies can strategically govern capital inflows to avoid displacement effects and promote inclusive growth.

### 2.3.4. Dual Sector Model

The Dual Sector Model, also known as the Lewis Model, was originally proposed by Nobel Laureate W. Arthur Lewis in his seminal work *"Economic Development with Unlimited Supplies of Labour"* (1954). This model posits a dichotomous economic structure in developing countries, divided into a traditional subsistence sector (typically agriculture) and a modern capitalist sector (such as manufacturing and formal services). According to Lewis, economic development is driven by the transfer of surplus labour from the low-productivity

traditional sector to the high-productivity modern sector, where capital accumulation and reinvestment generate increasing returns and industrial expansion. The process is sustained so long as the capitalist sector reinvests its profits, resulting in increased employment, wages, and productivity. A critical assumption of the model is that the marginal productivity of labour in the traditional sector is negligible or zero, which makes it rational for labour to migrate into the modern sector where marginal returns are higher. The model's core formula is based on the classical production function, particularly focusing on capital (K), labour (L), and technology (A), as such: $Y=A \cdot K^{\alpha} \cdot L_{1-\alpha}$

In the Lewis context, output (Y) increases as capital accumulates in the modern sector due to reinvestment, and the marginal productivity of labour rises as workers shift from the traditional to the modern sector. This process is expected to continue until surplus labour is absorbed and real wages begin to rise, a point referred to as the "Lewis turning point."

Applying the Lewis model to the study of foreign capital inflows and private sector development, the dual sector framework offers significant explanatory power, particularly in economies like Nigeria and across Sub-Saharan Africa, where dualism between informal and formal sectors persists. Foreign capital, whether in the form of FDI, remittances, or foreign aid, acts as a potential exogenous driver of capital accumulation in the modern sector. For instance, Delmon (2021) notes that infrastructure investment by foreign private capital significantly expands the productive base of modern urban economies, facilitating labour absorption and entrepreneurial activity. However, empirical evidence complicates this

optimistic view. Diallo, Jacolin, and Rabaud (2021) show that while FDI in Sub-Saharan Africa may crowd-in private investment in the long run, the short-run effects often reflect a crowding-out dynamic, particularly when domestic firms are unable to compete with capital-intensive foreign enterprises. This misalignment can stall the transitional process envisioned by Lewis, as the influx of capital does not always translate into proportional employment growth or productivity gains.

The Lewis model assumes that capital accumulation inherently leads to reinvestment and expansion of the modern sector, but the political economy of capital inflows reveals a more fragmented outcome. Alford and Greve (2017), along with Müller (2016), show that private sector strategies often prioritise profit maximisation and efficiency over inclusive growth, and that foreign capital tends to concentrate in sectors with quick returns rather than labour-intensive industries that could absorb surplus labour. In Nigeria, where the banking and trading sectors received the bulk of foreign inflows in Q2 2024 (NBS, 2024), capital was largely directed at non-manufacturing sectors that offer limited employment elasticity. This trend contradicts the Lewisian assumption that capital accumulation inherently supports structural transformation. Furthermore, remittances often regarded as an informal form of capital inflow do not consistently translate into productive investment. As Igbinedion (2023) and Atuma et al. (2024) show, while remittances positively influence private investment in the short run, their long-run effects are negligible unless channeled through institutional mechanisms that incentivise entrepreneurship and productive activity. This aligns with Tsui,

Bian, and Cheng (2014), who caution that the role of remittances in China's private sector expansion was significant only when paired with local reforms and policy incentives that ensured reinvestment and capital deepening.

Another tension with the Lewis model arises from the assumption of unlimited labour supply and the ease of transition between sectors. In reality, structural bottlenecks, skills mismatches, and regulatory constraints inhibit labour mobility and limit the impact of capital inflows on the expansion of the formal sector. Pieper and Pieper (2018) note that new private sector providers, especially in welfare-related sectors, often operate in enclaves that are poorly integrated with local labour markets, leading to fragmented service delivery and limited multiplier effects. In Nigeria's context, the dualism is particularly acute: the informal sector accounts for over 60% of employment, yet receives minimal formal investment. As Ekpo, Afangideh, and Udoh (2014) observe, foreign capital inflows have historically failed to bridge this gap due to policy volatility, weak infrastructure, and poor linkages between sectors. The Lewis model, in its original formulation, underestimates the institutional complexity and governance deficits that mediate capital allocation and labour absorption. As Rao (2016) and Jurisch et al. (2013) argue, the efficiency of private sector actors varies significantly between the public and private domains, with the latter often constrained by short-termism and lack of social responsibility, particularly in low-capacity states.

Despite these limitations, the dual sector model remains analytically relevant when revised to incorporate institutional and sectoral heterogeneity. Contemporary applications have

extended Lewis's insights to consider not just labour and capital, but also the role of policy, technology, and global integration. For instance, Acheampong et al. (2023) show that foreign capital inflows can enhance domestic credit availability to the private sector in Sub-Saharan Africa, thus improving access to finance for local firms; a precondition for expanding productive capacity. Similarly, the findings of Asamoah and Alagidede (2023) highlight that the growth-enhancing effects of FDI are conditional on financial development reaching a certain threshold suggesting that capital accumulation alone does not suffice without institutional absorptive capacity. In Vietnam, Bozsik, Ngo, and Vasa (2023) report a positive effect of FDI on SMEs, which in Lewisian terms would suggest a successful transition toward a diversified, employment-generating modern sector. However, these outcomes are not automatic and require a calibrated approach to foreign capital, embedded in domestic industrial policy, infrastructure development, and financial sector reform. In this light, the dual sector model offers a heuristic for understanding the pathways through which foreign capital can stimulate private sector development, but its assumptions must be situated within a broader political-economic context that accounts for the structural constraints, sectoral imbalances, and institutional dynamics of the host economy.

### 2.4 Empirical Review

Arumona and Oguntade (2025) assessed the differential effects of primary and secondary FDI on financial deepening in Nigeria from 1993 to 2023 using the Autoregressive Distributed Lag (ARDL) model. Their findings revealed that both forms of FDI—primary (e.g.,

extractives and agriculture) and secondary (e.g., manufacturing and processing)—have statistically significant and positive effects on financial deepening, measured through indicators like credit to the private sector and broad money supply. The results suggest that FDI contributes not only to capital accumulation but also to the expansion and sophistication of financial intermediation. The authors concluded that attracting FDI into underdeveloped but high-potential sectors such as agriculture and agro-processing could significantly deepen Nigeria's financial system and support broader macroeconomic objectives.

Atuma et al. (2024) conducted a nuanced examination of the impact of remittance inflows on private domestic investment in Nigeria, using data from 1986 to 2020 and applying the Auto-Regressive Distributed Lag (ARDL) model. Their findings revealed a positive but statistically insignificant relationship between remittances and private investment in the short run, while in the long run, remittances exerted a significantly positive effect. This suggests that while remittances may initially be absorbed by consumption and non-investment uses, over time they contribute meaningfully to capital formation and investment-led growth. Additionally, the study found that foreign aid and credit to the private sector both had statistically significant and positive effects on private investment in both the short and long run. These findings reinforce the notion that a multidimensional financing structure—including remittances, official flows, and bank credit—is essential for sustained private sector development in Nigeria. The study also noted that GDP growth, while positively correlated

with investment, was only statistically significant in the long term, indicating that economic expansion fosters investment incentives over time.

Okeke and Chukelu (2024) examined the impact of international remittances on the interplay between private domestic investment and economic growth in Nigeria, employing quarterly time-series data spanning from 1981 to 2022. Utilizing the Two-Stage Least Squares (TSLS) estimation technique alongside the Granger Causality test, the study established that remittances exert a positive influence on economic growth primarily through private domestic investment channels. More importantly, the causality test revealed a unidirectional causality running from economic growth to private domestic investment, without reciprocal feedback. This finding implies that as the economy expands, private investment is stimulated, but not vice versa. The authors argued that remittances in Nigeria, while commonly deployed for household consumption, hold significant potential for growth-enhancing investment if adequately mobilized.

Guo et al. (2024) examined the **crowding effect** of FDI on domestic investment in Bangladesh using a long-term annual dataset from 1972 to 2022. Applying the Johansen cointegration test and a Vector Error Correction Model (VECM), the study found a **positive and significant relationship** between FDI and domestic investment in both the short and long run. The robustness of the findings was reinforced by structural break considerations and post-estimation analysis using a crowding effect coefficient. These results indicate that FDI plays a catalytic role in stimulating domestic capital formation, particularly by introducing

capital, technology, and managerial expertise. Unlike some earlier studies that identify FDI's potential crowding-out effects in the short term, this study affirms a consistent crowding-in effect across timeframes, aligning with policy prescriptions that view FDI as complementary to domestic investment efforts in emerging economies such as Bangladesh.

Olorogun (2024) explored the long-run interrelationships between private sector financial development, foreign direct investment (FDI), and sustainable economic growth in Sub-Saharan Africa using a comprehensive econometric toolkit that included ARDL bound testing, Fully Modified Ordinary Least Squares (FMOLS), Dynamic Ordinary Least Squares (DOLS), and Canonical Cointegration Regression (CCR). Drawing from annual time-series data between 1978 and 2019, the study confirmed the existence of long-run cointegration among the variables. The results demonstrated that both financial development in the private sector and FDI had statistically significant positive effects on sustainable growth, reinforcing the notion that private sector expansion is indispensable to long-term economic development in the region. Moreover, the study observed bidirectional causality between private sector finance and growth, indicating a mutually reinforcing relationship.

Asamoah and Alagidede (2023) examined the conditional effects of FDI on the real sector in Africa, contingent upon the level of financial development. Using a newly developed dataset on financial development and the Lewbel Instrumental Variable Two-Step GMM estimator, the study analysed data from 1990 to 2017. Initial findings showed that FDI had no statistically significant growth impact on the aggregate real sector and, in some cases,

negatively affected agriculture. However, when interacted with financial development variables, FDI was found to contribute positively to sectoral growth—particularly in industry and services—once the financial development threshold exceeded the 25th percentile. In manufacturing, the positive effect of FDI only materialized when financial development reached the 90th percentile, suggesting that underdeveloped financial systems inhibit the absorption and productivity of foreign capital. These results reinforce the argument that financial system readiness is a precondition for realizing the full benefits of FDI, especially in sector-specific contexts.

Atswam and Abachi (2023) assessed the **pass-through effect of remittances on domestic investment** in Nigeria through the savings channel. Using quarterly data from 1986 to 2022 and estimating a Structural Vector Autoregression (SVAR) model, the authors found that **remittances had a negative and statistically insignificant impact on savings**, which in turn had a **positive and significant influence on domestic investment**. This indirect transmission mechanism implies that remittances fail to stimulate investment unless they are first converted into formal savings. The study suggests that bureaucratic constraints and low financial literacy among remittance recipients hinder the effective use of these funds for investment purposes.

Igbinedion (2023) examined the nexus between bank credit, migrant remittances, and private sector performance in Nigeria, using annual data from 1981 to 2021 within the framework of the Autoregressive Distributed Lag (ARDL) and Bounds testing approach. The study sought

to determine whether remittance inflows, alongside bank credit, meaningfully contribute to the performance of the private sector, which has historically been constrained by limited access to finance. The empirical findings revealed that both remittances and bank credit exert positive and statistically significant effects on private sector performance in the short run, affirming their role in bridging Nigeria's credit gap. However, in the long run, only bank credit retained its significance, while the impact of remittances turned negative and statistically insignificant. This temporal divergence underscores the predominantly consumptive nature of remittances and highlights the lack of structured mechanisms to channel them into productive investments.

Bozsik, Ngo, and Vasa (2023) evaluated the effect of Foreign Direct Investment (FDI) on the performance of Small and Medium Enterprises (SMEs) in Vietnam, comparing the findings to a group of ASEAN peers—Indonesia, Malaysia, and Thailand. The study emphasised FDI's role in fostering international economic integration, technological transfer, and global supply chain participation. However, the empirical results unveiled contrasting effects: while FDI positively influenced Vietnamese SMEs, it exerted a negative impact on SMEs in the comparison countries. This heterogeneity was attributed to varying institutional environments, degrees of economic liberalisation, and SME integration into global value chains. The study highlighted that Vietnam's targeted industrial policies, proactive investment promotion, and infrastructural readiness may explain its superior FDI-SME synergy.

Ponce et al. (2023) explored the intersection between foreign direct investment, urbanisation, private financial development, and environmental degradation by employing the ecological footprint as a proxy for environmental impact. Using panel data from 100 countries spanning 1980–2019, the authors employed cointegration and causality techniques to explore both long-run equilibrium and directionality of relationships. While the private financial system positively correlated with environmental degradation globally, the effect was statistically insignificant. However, disaggregated analysis revealed that in high-income countries, financial development mitigated environmental degradation, whereas in lower-income nations, it exacerbated it. Additionally, urbanisation emerged as a significant driver of environmental pressure, and the relationship between FDI and ecological footprint was found to be unstable over time and across income groups. The causality results showed bidirectional causality between FDI and environmental degradation in high-income economies and a unidirectional relationship in low-income contexts.

Acheampong, Frimpong, and Arhin (2023) conducted a comprehensive empirical investigation into the effects of foreign capital inflows on domestic credit to the private sector in Sub-Saharan Africa. Using panel data from 33 countries spanning 1996 to 2019, the study employed robust estimation techniques, including the System-Generalized Method of Moments (System-GMM), Pooled Mean Group (PMG), and Fully Modified Ordinary Least Squares (FMOLS), to address endogeneity and heterogeneity concerns. The findings revealed that Foreign Direct Investment (FDI) has a consistently positive and statistically significant

effect on domestic credit to the private sector in both the short and long run, indicating that FDI serves as a catalytic mechanism in enhancing credit availability to private enterprises. Conversely, official credit inflows, such as concessional loans and aid, were found to negatively influence domestic credit in both time frames, suggesting possible distortions or misallocations inherent in these flows. Furthermore, external financial conditions, proxied by the U.S. Treasury Bill rate, were negatively associated with private credit expansion, reflecting the global sensitivity of capital allocation in developing economies.

Ajide and Osinubi (2022) investigated the dual impact of foreign aid and remittances on entrepreneurship across 19 African countries from 2006 to 2017, while emphasizing the mediating role of institutional quality. Using panel regression techniques, the study uncovered a nuanced relationship: foreign aid alone was found to have a statistically significant negative effect on entrepreneurship development, but this effect was mitigated by remittance inflows. Moreover, institutional quality also played a significant role in moderating the adverse impacts of foreign aid. The analysis identified threshold values—10.59% of GDP for remittances and a score of 5.04 (on a 10-point scale) for institutional quality—above which foreign aid positively contributes to entrepreneurship. These findings underscore the necessity of strong institutional frameworks and active remittance participation in ensuring that foreign aid supports, rather than hinders, private enterprise development. The authors concluded that remittances and aid, when complemented by sound

governance, can play a synergistic role in fostering firm start-ups, thereby providing critical implications for African countries dependent on external capital flows.

Aljonaid, Qin, and Zhang (2022) offered a sector-specific analysis of the heterogeneous impact of foreign aid inflows on growth in agriculture, industry, and services across 37 Sub-Saharan African and MENA countries, using data from 1996 to 2017. Employing the Seemingly Unrelated Regression (SUR) model alongside Generalized Method of Moments (GMM) for robustness, the study introduced the Sectoral-Allocated-Aid-for-Sectoral-Growth (SAASG) metric to assess how sector-specific aid affects corresponding sectoral growth. The empirical results revealed that aid allocated to agriculture significantly enhances growth in that sector, whereas aid directed to industry and services showed weak or negative returns due to institutional bottlenecks and financial mismanagement. These findings highlight the inadequacy of aggregate aid–growth analyses and point to the importance of tailoring aid flows to sectoral priorities and absorptive capacities.

Fiador, Amoah, and Abbey (2022) examined the impact of foreign bank presence on credit accessibility to the private sector in Sub-Saharan Africa (SSA), focusing on the broader implications of global financial integration. Using a 22-year panel dataset (1995–2016) covering 25 SSA economies, the authors applied Fixed Effects, Prais-Winsten, and Generalized Method of Moments (GMM) estimators to address endogeneity and autocorrelation concerns. The study finds robust evidence in support of the financial liberalisation hypothesis, showing that increased foreign bank penetration enhances credit

availability to the private sector in the region. Specifically, financial deregulation and the influx of foreign banking institutions were associated with improved credit access, in line with conventional financial intermediation theory. Additionally, traditional determinants such as lending rates and broad money supply remained significant, aligning with existing literature. The study contributes to the discourse by validating the positive role of financial openness in stimulating domestic private sector activity, while also underlining the importance of supportive macroeconomic conditions to sustain these gains.

Diallo, Jacolin, and Rabaud (2021) investigated whether FDI crowds in or crowds out private domestic investment in Sub-Saharan Africa using a rich dataset of 40 countries spanning from 1980 to 2017. Applying dynamic panel techniques—including Pooled Mean Group (PMG), Mean Group (MG), and Dynamic Fixed Effects (DFE)—the study finds that FDI has a crowding-out effect in the short run but a crowding-in effect in the long run, with a 1% increase in FDI-to-GDP ratio associated with a 0.3% increase in private investment over time. Short-term displacement was attributed to competition effects, low absorptive capacity, and implementation lags, while long-term crowding-in effects emerged as domestic sectors adjusted to FDI presence. Furthermore, the study shows that FDI, when complemented by higher public investment and economic diversification, amplifies private investment. However, the benefits may be undermined by fiscal deficits, political instability, and exchange rate appreciation. These findings stress the importance of aligning FDI with

domestic policy frameworks that encourage productive spillovers and mitigate transitional disruptions.

Nguyen, Pham, Tran, and Nguyen (2021) investigated the relationship between foreign capital inflows and economic growth in Vietnam, focusing on the role of capital accumulation in a transitional economy. Drawing on time-series data from 1995 to 2018, the study utilized a linear regression framework to estimate the individual and combined effects of FDI, foreign aid, foreign loans, and exports on GDP growth. The findings revealed a statistically significant and positive effect of all four external financing instruments at the 1% level, underscoring their collective contribution to Vietnam's rapid socio-economic transformation during the study period. Notably, FDI (net inflows) emerged as a principal driver of growth, closely followed by foreign loans and aid, thereby supporting the hypothesis that external capital plays a pivotal role in supplementing domestic savings in capital-scarce economies. This empirical evidence is consistent with the dual-sector growth narrative, where foreign capital accelerates the expansion of the modern sector through technology transfer, job creation, and enhanced production capacities.

Adeosun, Orisadare, Fagbemi, and Adedokun (2021) provided an insightful contribution to the discourse on public investment and private sector dynamics in Nigeria by exploring their asymmetric relationships using data from 1986 to 2017. Employing advanced time-series techniques, such as the Nonlinear Autoregressive Distributed Lag (NARDL) model, asymmetric impulse response functions, and Granger causality tests, the study uncovered that

positive public investment shocks significantly stimulate private sector performance in the long run, while negative shocks exert a dampening effect. Interestingly, in the short run, the study revealed that negative public investment shocks could also provoke a positive response in private sector activity, possibly due to compensatory private initiatives during periods of fiscal retrenchment. These findings challenge the orthodox linear assumption of public-private investment complementarity and underscore the nuanced temporal and directional dynamics within Nigeria's mixed economy. Furthermore, the unidirectional causality from public investment to private sector performance suggests a leading role for the state in catalysing private activity, particularly through infrastructure provision and macroeconomic coordination.

Hussaini, Musa, and Muhammad (2021) investigated the impact of remittances on Nigeria's financial sector development using time series data from 1986 to 2019. Employing the ARDL Bounds testing technique, the study established both **short- and long-run cointegration** among the variables. Crucially, the long-run results indicated that **remittances significantly and positively influenced domestic credit to the private sector**, increasing it by approximately 339%. Conversely, financial development was negatively affected by interest rate spreads and gross savings. The Error Correction Term was negative and significant, confirming stability and convergence. The study concludes that remittances are a potent source of financial intermediation in Nigeria, capable of bridging funding gaps in the private sector.

Keho (2020) revisited the relationship between remittances and financial development within ECOWAS countries from 1980 to 2017, focusing on cross-country heterogeneity. Unlike standard panel approaches, the study controlled for both parameter heterogeneity and cross-sectional dependence, which are common challenges in regional panel data analysis. The results revealed a **paradoxical pattern**: remittances were associated with a **decline in domestic credit to the private sector**, but simultaneously contributed to an **increase in broad money supply**. These findings suggest that remittance inflows may primarily support consumption rather than be channelled into productive investment through the banking system. Country-level heterogeneity underscored divergent outcomes, implying that national financial architectures and policy environments play crucial roles in determining how remittances affect financial development. This complexity challenges simplistic assumptions about the uniformly beneficial role of remittances in developing financial systems and calls for targeted policy responses tailored to domestic conditions.

Mossie (2014) offered a nuanced evaluation of foreign aid's effect on domestic private investment across nine Eastern African countries using **Dynamic Ordinary Least Squares (DOLS)** estimation from 1971 to 2012. The study confirmed a **negative effect of aid on private investment**, consistent with concerns about aid-induced Dutch disease and institutional weakening. However, the analysis introduced interaction terms to assess the conditionality of aid's effects. When aid was interacted with FDI, the effect turned **significantly positive**, suggesting that aid, when aligned with external private capital and

market-oriented reforms, can support investment. In contrast, aid interacted with polity variables yielded negative outcomes, implying that governance quality can exacerbate or mitigate aid inefficiencies. This evidence illustrates that the aid-investment relationship is contingent, not deterministic.

Al-Sadig (2013) provided a broad empirical assessment of the effects of FDI inflows on private domestic investment in developing countries, using panel data from 91 nations between 1970 and 2000. Employing a system GMM estimator, the study supports the "crowd-in hypothesis," finding that FDI has a statistically significant and positive effect on private investment. The disaggregated analysis by income level revealed that in low-income countries, this positive impact is conditional on human capital availability, suggesting that absorptive capacity is a critical moderating factor. The study contributes to the long-standing debate on the substitutability versus complementarity of foreign and domestic capital, offering evidence that FDI can stimulate rather than displace private investment when the necessary structural conditions are present.

Ozturk (2012) explored the interaction between inward Foreign Direct Investment (FDI) and private sector external financing across 61 developing countries from 1999 to 2010, distinguishing between economies with "investment grade" and "non-investment grade" credit ratings. Using a fixed-effects two-stage least squares (FE-2SLS) model with a system of simultaneous equations, the study uncovered a **negative relationship** between private sector external financing and FDI inflows, indicating that higher reliance on external credit

by the private sector may deter FDI. Notably, the analysis found **no statistically significant causal effect** of FDI on external financing, suggesting a decoupling of the two financing sources in developing contexts. Ozturk argues that private sectors in these economies have developed sufficient financial credibility to attract external funding independently of FDI trends. This outcome challenges traditional crowding-in assumptions and implies that FDI and private sector borrowing might function as substitutes rather than complements in certain financial environments.

Herzer and Grimm (2012) investigated the **long-run relationship between foreign aid and private investment** using panel cointegration techniques across a wide dataset of developing countries. Their results indicate a **statistically significant and negative effect** of foreign aid on private investment, a finding robust to variations in aid definitions, sample composition, and estimation periods. Furthermore, the study identifies **bidirectional causality**, suggesting that while foreign aid suppresses private investment over time, increased private investment may also reduce the need for aid. These results challenge traditional development finance paradigms that present aid as a supplement to domestic investment. Instead, the findings support a critical stance that sees aid as potentially distortionary, particularly when not accompanied by institutional safeguards and investment-oriented conditionalities.

**Table 2.1: Empirical Studies on Foreign Capital Inflows and Private Sector Development**

| S/NO | Author(s) | Year | Topic | Location | Methodology | Key Findings |
|---|---|---|---|---|---|---|
| 1 | Arumona & | 2025 | Primary & | Nigeria | ARDL | Both primary and |

| S/NO | Author(s) | Year | Topic | Location | Methodology | Key Findings |
|---|---|---|---|---|---|---|
| | Oguntade | | Secondary FDI and Financial Deepening | | | secondary FDI have positive and significant effects on financial deepening. |
| 2 | Atuma et al. | 2024 | Remittance Inflows and Private Domestic Investment | Nigeria | ARDL | Remittances have long-run positive and significant effects on private investment; short-run effects are insignificant. |
| 3 | Okeke & Chukelu | 2024 | International Remittances, Private Investment, and Growth | Nigeria | Two-Stage Least Squares, Granger Causality | Remittances promote economic growth via private investment; unidirectional causality from growth to investment. |
| 4 | Guo et al. | 2024 | Crowding Effect of FDI on Domestic Investment | Bangladesh | VECM, Johansen Cointegration | FDI positively influences domestic investment in both the short and long run. |
| 5 | Olorogun | 2024 | Financial Development, FDI, and Sustainable Growth | Sub-Saharan Africa | FMOLS, DOLS, ARDL, CCR | FDI and private sector development significantly enhance sustainable economic growth in the long run. |
| 6 | Igbinedion | 2023 | Bank Credit and Private Sector Performance – Role of Remittances | Nigeria | ARDL, Bounds Testing | Bank credit and remittances positively impact private sector; remittances have negative long-run effect. |

| S/NO | Author(s) | Year | Topic | Location | Methodology | Key Findings |
|---|---|---|---|---|---|---|
| 7 | Acheampong et al. | 2023 | Foreign Capital Inflows and Domestic Credit to Private Sector | Sub-Saharan Africa | System-GMM, PMG, FMOLS | FDI boosts credit; official credit and U.S. interest rate reduce credit to private sector. |
| 8 | Bozsik et al. | 2023 | FDI and SME Performance | Vietnam and ASEAN | Comparative panel analysis | FDI benefits SMEs in Vietnam, but has negative effect in other ASEAN countries. |
| 9 | Asamoah & Alagidede | 2023 | FDI, Real Sector Growth, and Financial Development | Multi-country (global) | IV-GMM, Marginal Effect Analysis | FDI requires financial development threshold to positively impact sectors like manufacturing and services. |
| 10 | Ponce et al. | 2023 | FDI, Urbanization, and Ecological Impact on Financial Systems | 100 countries (global) | Panel cointegration, causality tests | Private finance contributes to ecological degradation in low-income countries; FDI has unstable environmental impact. |
| 11 | Atswam & Abachi | 2023 | Remittance Pass-Through to Domestic Investment | Nigeria | Structural VAR | Remittances have a negative effect on savings; savings drive domestic investment. |
| 12 | Ajide & Osinubi | 2022 | Foreign Aid, Remittances, and Entrepreneurship | 19 African Countries | Panel regression | Foreign aid negatively affects entrepreneurship; remittances and institutions mitigate the effect. |
| 13 | Fiador et al. | 2022 | Foreign Bank | Sub- | GMM, Fixed | Foreign banks |

| S/NO | Author(s) | Year | Topic | Location | Methodology | Key Findings |
|---|---|---|---|---|---|---|
| | | | Presence and Private Sector Credit | Saharan Africa | Effects, Prais-Winsten | enhance credit access for private sector; lending rate and money supply align with existing literature. |
| 14 | Aljonaid et al. | 2022 | Sectoral Foreign Aid Inflows and Sectoral Growth | SSA and MENA | SUR, GMM | Sectoral aid boosts agriculture but reduces gains in services and industry due to structural constraints. |
| 15 | Adeosun et al. | 2021 | Public Investment and Private Sector Performance | Nigeria | NARDL, Asymmetric Granger Causality | Positive shocks stimulate long-run growth; negative shocks do not hinder short-run growth. |
| 16 | Diallo et al. | 2021 | FDI and Private Investment – Crowding Effects | Sub-Saharan Africa | PMG, MG, DFE | Long-run FDI crowding-in effect; short-run crowding-out due to competition; public investment enhances FDI effect. |
| 17 | Nguyen et al. | 2021 | Foreign Capital Inflows and Economic Growth | Vietnam | Time-series regression (Linear Model) | FDI, aid, loans, and exports significantly boost growth. |
| 18 | Hussaini et al. | 2021 | Remittances and Financial Sector Development | Nigeria | ARDL | Remittances positively influence private sector credit; interest rate spread and savings have negative effects. |

| S/NO | Author(s) | Year | Topic | Location | Methodology | Key Findings |
|---|---|---|---|---|---|---|
| 19 | Keho | 2020 | Remittances and Financial Development | ECOWAS Countries | Panel estimation with cross-sectional dependence control | Remittances reduce private sector credit but increase money supply; high country-level heterogeneity. |
| 20 | Mossie | 2014 | Foreign Aid and Private Investment Growth | Eastern Africa (9 countries) | Dynamic OLS with interaction terms | Aid negatively affects investment; positive when combined with FDI; political conditions also matter. |
| 21 | Al-Sadig | 2013 | FDI and Private Investment | 91 Developing Countries | System-GMM | FDI stimulates private investment; impact in low-income countries depends on human capital. |
| 22 | Herzer & Grimm | 2012 | Foreign Aid and Private Investment | Developing Countries | Panel cointegration, causality | Aid negatively impacts private investment; causality runs both ways. |
| 23 | Ozturk | 2012 | FDI and Private Sector External Financing | 61 Developing Countries | Fixed-effects 2SLS | Private external financing negatively affects FDI; no significant effect in reverse direction. |

**Author's Compilation (2025)**

### 2.5 Research Gaps

Despite a growing body of empirical literature on the relationship between foreign capital inflows and private sector development, substantial gaps remain that limit the clarity and

policy relevance of existing findings. While some studies highlight the positive role of inflows particularly foreign direct investment (FDI) and remittances in improving access to credit, stimulating investment, and expanding entrepreneurial activity (Acheampong et al., 2023; Atuma et al., 2024; Okeke & Chukelu, 2024), others reveal adverse outcomes, particularly when aid or volatile capital inflows are involved (Herzer & Grimm, 2012; Ajide & Osinubi, 2022; Aljonaid et al., 2022). The divergent results stem not only from the heterogeneity in capital types but also from contextual differences, such as institutional quality, absorptive capacity, and macroeconomic stability. Moreover, the geographic concentration of prior studies—largely within Sub-Saharan Africa, Southeast Asia, or across cross-country panels—means that few investigations provide a focused, longitudinal perspective on the Nigerian context. Existing Nigeria-specific research (e.g., Igbinedion, 2023; Okeke & Chukelu, 2024) remains fragmented, either emphasizing a single type of inflow or limiting analysis to specific macroeconomic channels. As such, there is a lack of comprehensive, country-specific evidence on how various forms of foreign capital interact with Nigeria's private sector over time.

In addition to these thematic gaps, there are clear temporal and methodological limitations in the existing scholarship. Several widely cited studies rely on outdated datasets, excluding critical financial shifts and capital market developments that occurred in the past decade (Herzer & Grimm, 2012; Al-Sadig, 2013). Other studies employ relatively short or outdated time frames, such as 1981–2017 or 1995–2018 (Nguyen et al., 2021; Adeosun et al., 2021),

which restrict their capacity to reflect recent capital inflow dynamics, post-COVID recovery trends, and contemporary financial liberalisation efforts. While various econometric techniques have been employed including system-GMM, dynamic OLS, and VECM few have leveraged fully modified ordinary least squares (FMOLS) to estimate long-run equilibrium relationships with the precision required for policy inference, particularly in the Nigerian setting. There is also limited integration of multiple types of inflows (FDI, aid, remittances, and portfolio investment) within a single empirical framework. Thus, this study seeks to fill these gaps by examining the effect of foreign capital inflows on private sector development in Nigeria from 1990 to 2023 using the FMOLS technique. By employing a method robust to endogeneity and serial correlation while focusing on a comprehensive time frame, this study aims to generate more coherent, context-specific, and policy-relevant insights into the dynamics of capital inflows and private sector transformation in Nigeria.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter deals with the research design, population, sample of the study, sources of data, model specification, measurement and operationalization of variable as well as method of data analysis.

## 3.2 Research Design

The most appropriate methodological approach for this study is the ex post facto research design. This approach is well-suited because it entails examining pre-existing datasets to uncover the relationships between variables particularly how key foreign capital inflows indicators, such as foreign direct investment, foreign portfolio investment, foreign aid, and foreign remittances, have influenced private sector development over a defined timeframe. Unlike experimental designs, the ex post facto method does not involve manipulation of independent variables; rather, it investigates their prior effects, making it especially applicable to research utilizing time-series economic data (Taherdoost, 2022; Saunders, Lewis, & Thornhill, 2019).

## 3.3 Population of the Study

The population of this research covers the entire country to provide a comprehensive analysis of how key foreign capital inflows indicators, such as foreign direct investment, foreign

portfolio investment, foreign aid, and foreign remittances, have influenced private sector development from 1990 to 2023.

### 3.4 Sample and Sampling Techniques

The study utilized a census sampling technique, where the population and sample size are identical. This method enhances the accuracy of representation by ensuring that the entire population is comprehensively included.

### 3.5 Sources of Data

The secondary data for the study will be obtained directly from the World Bank Data Bank for the years under investigation (1990 to 2023).

### 3.6 Theoretical Framework and Model Specification

This study adopts the Dual Sector Model, originally proposed by Sir W. Arthur Lewis (1954), as its underpinning theoretical framework. The model explains the structural transformation of developing economies from traditional, subsistence-based sectors to modern, industrialized ones through the mechanism of capital accumulation and labour mobility. The economy is conceptualized as comprising two sectors:

- the traditional sector, characterized by low productivity and surplus labour (primarily agriculture); and

- the modern sector, which is profit-driven, capital-intensive, and typically industrial or service-oriented.

According to Lewis, economic development occurs as surplus labour migrates from the traditional to the modern sector, driven by higher wages and better productivity prospects. The expansion of the modern sector is contingent upon capital accumulation, which increases the demand for labour and facilitates further economic transformation. However, in many developing countries like Nigeria, low domestic savings constrain capital accumulation, making foreign capital inflows (FCIs) a critical source of investment to stimulate the modern sector including the private sector.

In this context, the Dual Sector Model offers a suitable analytical lens to examine the role of FCIs such as Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Foreign Aid (AID), and Remittances (REM) in supporting private sector development. These inflows serve as external sources of capital that can augment domestic investment, foster job creation, improve financial intermediation, and facilitate the expansion of productive enterprises. However, the effectiveness of FCIs is conditional upon the absorptive capacity of the economy, including infrastructure, institutional quality, and macroeconomic stability, all of which determine whether capital inflows lead to meaningful transformation or perpetuate structural imbalances.

The empirical model is specified to investigate the impact of disaggregated foreign capital inflows on private sector development in Nigeria. Drawing from the Dual Sector Model and adapting the model of Okoebor (2022), the model treats private sector development (proxied by domestic credit to the private sector as a percentage of GDP, logged as PRIV) as the dependent variable, and FDI, FPI, AID, and REM (all logged) as the key explanatory variables.

The functional form of the model is expressed as:

$PRIV_t = f(FDI_t, FPI_t, AID_t, REM_t) + \varepsilon_t$

The econometric model is specified as:

$PRIV_t = \beta_0 + \beta_1 FDI_t + \beta_2 FPI_t + \beta_3 AID_t + \beta_4 REM_t + \varepsilon_t$

Where:

- $PRIV_t$ = Domestic credit to private sector (% of GDP) at time *t* (logged)
- $FDI_t$ = Foreign Direct Investment inflows at time *t* (logged)
- $FPI_t$ = Foreign Portfolio Investment inflows at time *t* (logged)
- $AID_t$ = Official development assistance (Foreign Aid) at time *t* (logged)
- $REM_t$ = Workers' remittances inflows at time *t* (logged)
- $\beta_0$ = Constant term
- $\beta_1 - \beta_4$ = Coefficients of the independent variables
- $\varepsilon_t$ = Error term

The *a priori* expectations are as follows:

ased on economic theory, empirical literature, and the underlying logic of the Dual Sector Model, the expected signs of the coefficients ($\beta_1$ to $\beta_4$) in the specified model are as follows:

1. **$\beta_1 > 0$ (Foreign Direct Investment - FDI)**: FDI is expected to have a positive effect on private sector development, as it brings not only capital but also technology transfer, managerial expertise, and access to international markets.
2. **$\beta_2 > 0$ / $< 0$ (Foreign Portfolio Investment - FPI):** The effect of FPI is ambiguous. While it can enhance liquidity in financial markets and reduce borrowing costs (Sanusi, 2010), it is also highly volatile and speculative, which can undermine financial stability and crowd out long-term investment. Therefore, the sign of $\beta_2$ could be positive or negative, depending on the stability and absorptive capacity of the domestic economy.
3. **$\beta_3 > 0$ (Foreign Aid - AID):** Foreign aid is expected to have a positive effect on private sector development when properly targeted toward infrastructure, institutional reforms, and SME support..
4. **$\beta_4 > 0$ (Remittances - REM):** Remittances are anticipated to have a positive and significant effect on private sector development.

In summary, the a priori expectations are:

$$\beta_1>0, \beta_2 \gtrless 0, \beta_3>0, \beta_4>0$$

### 3.7 Measurement and Operationalization of Variables

The variables of the study are operationalized and measured as presented in Table 3.1.

**Table 3.1: Operationalization and Measurement of Variables**

| Variable | Type | Measurement | Source |
|---|---|---|---|
| **PRIV (Private Sector Development)** | Dependent Variable | Log of domestic credit to the private sector (% of GDP) | World Bank (World Development Indicators), 2025 |
| **FDI (Foreign Direct Investment)** | Independent Variable | Log of net FDI inflows (current US$) | World Bank (World Development Indicators), 2025 |
| **FPI (Foreign Portfolio Investment)** | Independent Variable | Log of net portfolio inflows (current US$) | Central Bank of Nigeria (CBN Statistical Bulletin), 2025 |
| **AID (Foreign Aid)** | Independent Variable | Log of net official development assistance received (current US$) | OECD Development Assistance Committee (DAC); World Bank, 2025 |
| **REM (Remittances)** | Independent Variable | Log of personal remittances received (current US$) | World Bank (Migration and Remittances Data), 2025 |

*(Source: Author's compilation, 2025)*

### 3.8 Method of Data Analysis

This study adopts the Robust Least Squares (RLS) estimation technique to examine the relationship between foreign capital inflows and private sector development in Nigeria. RLS is particularly suitable for addressing potential violations of the classical Ordinary Least

Squares (OLS) assumptions, including heteroscedasticity, non-normality, outliers, and model misspecification common challenges when working with macroeconomic time series data in developing countries. The use of M-estimation with bisquare weighting allows the model to minimize the influence of outliers while improving efficiency and reliability of coefficient estimates, especially in the presence of both I(0) and I(1) variables without requiring strict cointegration.

Before applying the RLS estimation, preliminary diagnostic procedures are conducted to evaluate the statistical properties of the data. These include unit root tests, specifically the Augmented Dickey-Fuller (ADF) test, to determine the stationarity of each variable and establish their order of integration. The presence of a mixed order of integration among variables justifies the use of RLS, as it does not require all regressors to be of the same order or cointegrated, unlike traditional techniques such as FMOLS or Johansen's method.

To validate the reliability of the estimated model, a series of estimation diagnostic tests are conducted. These include the Breusch-Godfrey test for serial correlation, the Breusch-Pagan-Godfrey test for heteroskedasticity, and the Ramsey RESET test for model specification. The outcomes of these diagnostics ensure that the model does not suffer from omitted variable bias, autocorrelation, or non-constant variance, thus enhancing the interpretability and validity of the empirical results. This analysis was conducted using the EViews version 12 statistical software.

# CHAPTER FOUR

# DATA PRESENTATION AND ANALYSES

## 4.1 Introduction

This chapter focuses on the presentation and analysis of data derived from the time series dataset covering the period between 1990 and 2023. The results are systematically displayed in tabular format, accompanied by detailed explanations to promote clarity and comprehension of the findings. The chapter is organized into key sections, including data presentation and interpretation, hypothesis testing, and a discussion of the findings.

## 4.2 Data Presentation and Interpretation

This segment evaluates the study's variables through descriptive statistics, stationarity tests (e.g., unit root tests), correlation analysis, and cointegration testing for long-term relationships. Diagnostic tests, including the Breusch-Godfrey test (serial correlation), Breusch-Pagan test (heteroscedasticity), and Ramsey RESET test (model specification), ensure the robustness of the regression model.

**Table 4.1 Descriptive statistics**

| | PRIV | FDI | FPI | AID | REM |
|---|---|---|---|---|---|
| Mean | 1.038866 | 8.791524 | -2.620215 | 8.971944 | 9.555376 |
| Maximum | 1.314407 | 9.946504 | 9.567184 | 10.05812 | 10.38580 |
| Minimum | 0.775066 | -8.271359 | -10.17587 | 8.181815 | 7.000371 |
| Std. Dev. | 0.131008 | 3.043892 | 8.445232 | 0.580776 | 0.944214 |
| Skewness | 0.019513 | -5.403887 | 0.484877 | -0.000101 | -0.929435 |
| Kurtosis | 2.460799 | 30.83244 | 1.274836 | 1.493107 | 2.877829 |
| Jarque-Bera | 0.414036 | 1262.891 | 5.548535 | 3.216864 | 4.916297 |
| Probability | 0.813005 | 0.000000 | 0.062395 | 0.200201 | 0.085593 |

*PRIV = Domestic Private Sector Credit % of GDP (Logged); FDI = Foreign Direct Investment (Logged); FPI = Foreign Portfolio Investment (Logged); AID = Foreign Aid (Logged); REM = Foreign Remittances (Logged)*

**Source: Researcher's compilation (2025)**

The descriptive statistics presented in Table 4.1 provide a foundational understanding of the central tendencies, dispersion, and distributional properties of the key macroeconomic variables analyzed over the sample period. These include Domestic Private Sector Credit (PRIV), Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Foreign Aid (AID), and Foreign Remittances (REM). All variables are log-transformed to correct for skewness and ensure comparability.

The mean values reveal that foreign remittances (REM) recorded the highest average (9.56), followed closely by foreign aid (AID) (8.97) and foreign direct investment (FDI) (8.79). In contrast, foreign portfolio investment (FPI) has a negative mean value of -2.62, suggesting that on average, there were net outflows or periods of capital withdrawal within the sample period. Domestic private credit (PRIV) has a moderate mean of approximately 1.04, reflecting the relatively stable role of the domestic financial sector in private credit extension as a percentage of GDP.

The standard deviation, which indicates variability, shows that FPI is the most volatile variable (std. dev. = 8.45), consistent with the inherently unstable and speculative nature of portfolio flows in emerging markets. FDI follows with a standard deviation of 3.04, while PRIV and AID are the least volatile with values of 0.13 and 0.58, respectively, indicating a relatively consistent flow over time. REM displays moderate variability (std. dev. = 0.94), which is understandable given its link to global economic conditions and migration patterns.

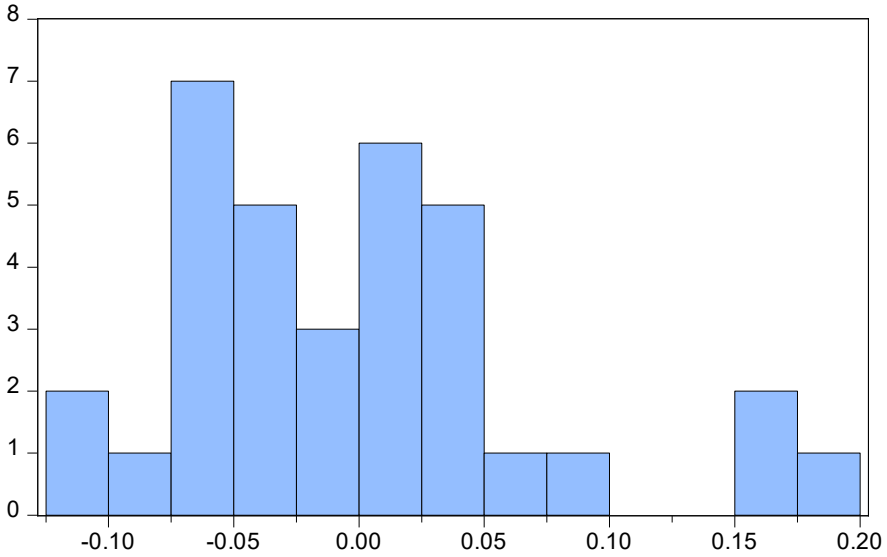
Skewness provides insights into the symmetry of the distributions. Most variables demonstrate some degree of skewness. FDI exhibits a strong negative skew (-5.40), indicating a long tail to the left and suggesting that there were extreme low (negative) FDI inflows during certain periods, possibly due to economic crises or investor uncertainty. On the other hand, FPI (0.48) and REM (-0.93) are modestly skewed, suggesting occasional spikes in capital inflows or remittances. PRIV and AID are nearly symmetric with skewness values near zero, implying balanced distributions.

Kurtosis, a measure of "tailedness," indicates whether the distribution is peaked or flat relative to the normal distribution. The distribution of FDI is highly leptokurtic with a kurtosis of 30.83, suggesting the presence of extreme outliers. This heavy-tailed nature reflects periods of intense capital volatility, possibly during global financial shocks. FPI, AID, and REM are all platykurtic, with values below 3, indicating a flatter distribution with lighter tails. PRIV is slightly below the normal kurtosis benchmark (2.46), reflecting a relatively normal distribution.

The Jarque-Bera (JB) test assesses the null hypothesis of normality. FDI shows a significantly high JB statistic (1262.89) with a p-value of 0.000, indicating a clear deviation from normality. This reinforces earlier observations regarding its skewness and kurtosis. FPI also slightly falls within the normality assumption ($p = 0.062$), bordering statistical significance at the 5% level. Meanwhile, PRIV, AID, and REM have JB p-values well above 0.05, suggesting that their distributions do not deviate significantly from normality and can be reasonably modeled using standard parametric methods.

Figure 1 further confirms the normality of the variables of the study.

**Figure 1: Normality Graph**




EViews (2025)

Figure 1 presents an aggregate Jarque-Bera stat of 4.23 with a corresponding probability value of 0.12, signifying that the variables of the study as a whole are normally distributed.

**Table 4.2: Unit Root Tests**

| | LEVEL | | | FIRST DIFFERENCE | | | Order of Integration |
|---|---|---|---|---|---|---|---|
| **Variable** | **ADF Test Statistic (Level)** | **95% Critical ADF Value** | **Remark** | **ADF Test Statistic (1st Diff.)** | **95% Critical ADF Value** | **Remark** | |
| **PRIV** | - | - | Non- | - | - | Stationary | I(1) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 3.410453 | 3.557759 | stationary | 5.269347 | 3.568379 | | |
| **FDI** | -5.703305 | -2.954021 | Stationary | -0.332464 | -2.967767 | Non-stationary | I(0) |
| **FPI** | -4.879484 | -3.552973 | Stationary | -8.853310 | -3.557759 | Stationary | I(0) |
| **AID** | -3.587143 | -3.557759 | Stationary | -5.640367 | -3.562882 | Stationary | I(0) |
| **REM** | -2.929894 | -3.552973 | Non-stationary | -7.032817 | -3.557759 | Stationary | I(1) |

**Source: Author's Computation (2025)**

The results of the unit root tests presented in Table 4.2 indicate a mixed order of integration among the variables, revealing both stationary and non-stationary characteristics at level. Specifically, PRIV (Domestic Private Sector Credit) and REM (Remittances) are non-stationary at level but attain stationarity after first differencing, indicating they are integrated of order one, I(1). This implies that these series exhibit trends over time and are only suitable for econometric modeling after transformation. In contrast, FDI (Foreign Direct Investment), FPI (Foreign Portfolio Investment), and AID (Foreign Aid) are stationary at level, meaning they are integrated of order zero, I(0), and do not require differencing to achieve stationarity. Interestingly, FDI shows a peculiar behavior, being stationary at level but non-stationary at first difference, a pattern sometimes observed in highly persistent stationary series (Brooks, 2014).

This mixed order of integration where some regressors are I(0) and others are I(1) violates the assumptions of standard Ordinary Least Squares (OLS), which requires all variables to be either strictly stationary or properly cointegrated. Applying OLS without addressing this risk leads to spurious regression results due to non-stationarity. Therefore, the adoption of Robust Least Squares (RLS) is justified, as it is better suited to handle such data irregularities, offering consistent and efficient estimates in the presence of non-stationary regressors and outliers (Koenker & Bassett, 1978; Hamilton, 1994).

**Table 4.3: Correlation Matrix**

| | PRIV | FDI | FPI | AID | REM | VIF |
|---|---|---|---|---|---|---|
| **PRIV** | 1.000000 | | | | | |
| **FDI** | -0.038920 | 1.000000 | | | | 1.033213 |
| **FPI** | -0.343099** | 0.090884 | 1.000000 | | | 1.202452 |
| **AID** | 0.616683* | -0.112510 | -0.326971 | 1.000000 | | 3.389067 |
| REM | 0.831257* | -0.033946 | -0.401998** | 0.835202* | 1.000000 | 3.582240 |

* Sig @ 1%; * * Sig @ 5%

**Source: Researcher's compilation (2025)**

The correlation matrix presented in Table 4.3 provides valuable insights into the linear relationships among the study variables. Notably, PRIV (Domestic Private Sector Credit) exhibits a strong and statistically significant positive correlation with REM (Remittances) ($r = 0.831$, $p < 0.01$), and a moderate positive correlation with AID (Foreign Aid) ($r = 0.617$, $p$

< 0.01). This suggests that increases in remittance inflows and aid are closely associated with expansions in private sector credit, likely due to improved liquidity and increased financial intermediation capacity. Conversely, PRIV is negatively and significantly correlated with FPI (Foreign Portfolio Investment) ($r = -0.343$, $p < 0.05$), indicating that volatile short-term capital inflows may not support, or could even crowd out, domestic credit growth. The correlation between PRIV and FDI (Foreign Direct Investment) is weak and statistically insignificant, implying that long-term investment inflows have limited direct impact on private sector credit dynamics in the sample period.

The correlations among the explanatory variables also reveal potential multicollinearity concerns, particularly between REM and AID ($r = 0.835$, $p < 0.01$), reflecting the likelihood that these inflows are jointly determined or respond to similar macroeconomic factors. However, the Variance Inflation Factors (VIFs) all below the critical threshold of 10 suggest that multicollinearity is present but not severe enough to distort regression estimates. The highest VIFs are observed for REM (3.58) and AID (3.39), which are within acceptable limits (Gujarati & Porter, 2009). These patterns justify cautious interpretation in multivariate analyses, but do not preclude the use of these variables. Taken together, the correlation structure supports the use of Robust Least Squares, as it can mitigate the influence of correlated regressors and provide more reliable coefficient estimates under mild multicollinearity.

**Table 4.5: Diagnostics Test: Serial, Heteroskedasticity, and Specification Tests**

| | | | |
|---|---|---|---|
| *Breusch-Godfrey Serial Correlation LM Test:* | | | |
| F-statistic | 1.870647 | Prob. F(2,27) | 0.1734 |
| Obs*R-squared | 4.137887 | Prob. Chi-Square(2) | 0.1263 |
| *Heteroskedasticity Test: Breusch-Pagan-Godfrey* | | | |
| F-statistic | 0.852586 | Prob. F(4,29) | 0.5038 |
| Obs*R-squared | 3.577616 | Prob. Chi-Square(4) | 0.4662 |
| *Ramsey RESET Test: Specification: PRIV FDI FPI AID REM C* | | | |
| t-statistic | 3.849372 | 28 | 0.0006 |
| F-statistic | 14.81767 | (1, 28) | 0.0006 |
| Likelihood ratio | 14.44137 | 1 | 0.0001 |

**Source: Researcher's compilation (2025)**

The diagnostic tests reported in Table 4.5 assess the reliability of the estimated regression model by checking for serial correlation, heteroskedasticity, and model specification errors. The Breusch-Godfrey Serial Correlation LM test shows no evidence of serial correlation in the residuals, as both the F-statistic (1.87, p = 0.1734) and the Obs*R-squared (4.14, p = 0.1263) are statistically insignificant at conventional levels. This suggests that the residuals are not autocorrelated and that the model's estimations are not biased due to dynamic misspecification or omitted lagged variables. In time series models, the absence of serial correlation is critical, as its presence can lead to inefficient estimators and invalid statistical inference (Gujarati & Porter, 2009).

Similarly, the Breusch-Pagan-Godfrey test for heteroskedasticity indicates that the error terms have constant variance. The F-statistic (0.85, p = 0.5038) and the Obs*R-squared (3.58, p = 0.4662) are both insignificant, confirming homoskedasticity. This supports the assumption of equal variance of residuals across observations, which is a key requirement for the efficiency of ordinary least squares (OLS) estimators. The absence of heteroskedasticity implies that there is no need for corrective measures such as weighted least squares or generalized least squares, at least from a variance perspective.

However, the Ramsey RESET test strongly rejects the null hypothesis of correct model specification. The t-statistic (3.85, p = 0.0006), F-statistic (14.82, p = 0.0006), and likelihood ratio (14.44, p = 0.0001) are all highly significant, suggesting the presence of omitted variable bias or incorrect functional form. This outcome implies that the linear specification may not adequately capture the relationship between the dependent and independent variables. Given this specification error alongside the presence of mild multicollinearity and the mixed stationarity properties observed in prior tests, the adoption of Robust Least Squares is justified. This method offers greater resistance to specification errors, non-normality, and model misspecification, thereby enhancing the robustness and reliability of the estimated coefficients.

### 4.2.3 Multivariate Analysis

**Table 4.6: Multivariate Analysis**

Dependent Variable: PRIV

Method: Robust Least Squares

Method: M-estimation

M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|---|---|---|---|---|
| **FDI** | -0.001162 | 0.003146 | -0.369388 | 0.7118 |
| **FPI** | -0.004271 | 0.001223 | -3.492178 | 0.0005 |
| **AID** | 0.014501 | 0.029859 | 0.485668 | 0.6272 |
| **REM** | 0.081540 | 0.018882 | 4.318420 | 0.0000 |
| **C** | 0.115085 | 0.164375 | 0.700138 | 0.4838 |

Robust Statistics

| | |
|---|---|
| R-squared: 0.650866 | Adjusted R-squared: 0.602709 |
| Rw-squared: 0.856709 | Adjust Rw-squared: 0.856709 |
| Rn-squared statistic: 122.5643 | Prob(Rn-squared stat.): 0.000000 |

Source: Researcher's compilation (2025)

The multivariate analysis presented in Table 4.6 examines the relationship between Domestic Private Sector Credit (PRIV) and a set of foreign capital inflow variables using the Robust

Least Squares (RLS) method, specifically M-estimation with bisquare weighting. The results reveal a statistically significant and positive impact of remittances (REM) on domestic private credit, with a coefficient of 0.0815 and a p-value of 0.0000, suggesting that remittance inflows play a substantial role in expanding credit to the private sector. This finding aligns with existing literature that views remittances as a stable and demand-driven financial source, often channeled through the banking system, thereby enhancing financial deepening (Ratha, 2013). On the other hand, foreign portfolio investment (FPI) has a significant negative effect on domestic credit (coefficient = -0.0043, p = 0.0005), indicating that short-term capital inflows may be associated with financial volatility or crowding out effects, which potentially undermine credit expansion.

In contrast, foreign direct investment (FDI) and foreign aid (AID) exhibit statistically insignificant effects on private credit, with p-values of 0.7118 and 0.6272 respectively. This suggests that, in this model, these two forms of capital inflows do not exert direct or consistent influence on domestic credit creation, possibly due to their allocation toward specific sectors or non-financial uses. The overall goodness-of-fit measures support the robustness of the model, with a Robust R-squared of 0.8567 and a highly significant Rn-squared statistic (122.56, p = 0.0000), indicating that the model explains a substantial portion of the variation in private sector credit. Given the mixed stationarity of variables, potential outliers, and specification issues identified in earlier diagnostics, the use of Robust Least

Squares is justified as it enhances estimator efficiency and protects against heteroskedasticity and non-normal residuals.

### 4.3 Hypotheses Testing

In this study, the hypotheses were evaluated at a 5% level of significance, meaning that a p-value less than or equal to 0.05 indicates rejection of the null hypothesis, while a p-value greater than 0.05 leads to acceptance of the null hypothesis. Table 4.6 presents the results of the analysis, which are used to assess each hypothesis. Below is an extensive discussion of the hypotheses, their respective tests, and the decisions based on the results:

**Hypothesis One**

**$Ho_1$: Foreign portfolio investment has no significant effect on private sector development in Nigeria.**

The coefficient for foreign portfolio investment (FPI) is -0.0043 with a p-value of 0.0005, which is less than the 0.05 significance threshold. This indicates that FPI has a statistically significant and negative impact on private sector development. Therefore, we reject the null hypothesis ($Ho_1$) and accept the alternative that foreign portfolio investment significantly affects private sector development in Nigeria.

**Hypothesis Two**

**$Ho_2$: Foreign direct investment does not significantly influence private sector development in Nigeria.**

The coefficient for foreign direct investment (FDI) is -0.0012 with a p-value of 0.7118, which is greater than 0.05. This implies that FDI does not have a statistically significant effect on private sector development in the Nigerian context. As a result, we accept the null hypothesis ($Ho_2$) and conclude that foreign direct investment does not significantly influence private sector development in Nigeria.

**Hypothesis Three**

**$Ho_3$: Foreign aid does not significantly impact private sector development in Nigeria.**

The coefficient for foreign aid (AID) is 0.0145 with a p-value of 0.6272, which exceeds the 0.05 threshold. This indicates that foreign aid does not have a statistically significant effect on private sector development. Hence, we accept the null hypothesis ($Ho_3$) and conclude that foreign aid does not significantly impact private sector development in Nigeria.

**Hypothesis Four**

**$Ho_4$: Remittance inflows have no significant impact on private sector development in Nigeria.**

The coefficient for remittances (REM) is 0.0815 with a p-value of 0.0000, which is well below the 0.05 level of significance. This confirms a strong and positive statistically significant relationship between remittance inflows and private sector development. Therefore, we reject the null hypothesis ($Ho_4$) and conclude that remittance inflows significantly impact private sector development in Nigeria.

## 4.4 Discussion of Findings

### 4.4.1. Foreign Portfolio Investment (FPI) and Private Sector Development

The empirical result shows that foreign portfolio investment (FPI) has a statistically significant negative effect on private sector development in Nigeria (coefficient = -0.0043, p = 0.0005). This finding aligns with the sceptical view of FPI expressed in both the Dependency Theory and empirical studies such as Opaluwa et al. (2012), which caution that highly volatile and speculative inflows can destabilize domestic financial systems. FPI's "hot money" nature means it can be easily reversed at the slightest sign of macroeconomic or political instability, resulting in capital flight, exchange rate pressure, and liquidity constraints for domestic firms. This negative impact supports Adegboye & Ojo (2021), who emphasized that FPI often fails to enhance real sector productivity, especially when Nigeria's absorptive capacity is weak. Theoretically, this challenges the optimism of modernization theorists who assume that all capital inflows are growth-enhancing. The result here reinforces the need for stringent regulatory frameworks and macroeconomic stability to manage portfolio flows effectively, otherwise, they may undermine, rather than promote, private sector development.

### 4.4.2. Foreign Direct Investment (FDI) and Private Sector Development

Despite its centrality in both theory and policy, the regression output shows that foreign direct investment (FDI) does not have a statistically significant effect on private sector development in Nigeria (p = 0.7118). This finding is particularly noteworthy when contrasted with the Eclectic (OLI) Paradigm, which posits that FDI brings ownership, location, and

internalization advantages (Dunning, 2000). While these advantages theoretically foster industrial development, the lack of significant impact in this study supports Opaluwa et al. (2012) and Abiola (2019), who argue that Nigeria's weak absorptive capacity characterized by poor infrastructure, low technological readiness, and institutional bottlenecks prevents meaningful spillovers from FDI. Additionally, this result partially resonates with the Dependency Theory, which suggests that FDI in Nigeria often manifests as enclave investment in non-manufacturing sectors with limited linkages to the domestic economy. It also aligns with Adegboye & Ojo (2021) who note that, without a conducive macroeconomic and regulatory environment, even long-term foreign capital may fail to stimulate industrial growth. Hence, while FDI holds potential, this result emphasizes that its effectiveness is conditional, and without targeted reforms, its developmental impact remains muted.

### 4.4.3. Foreign Aid (AID) and Private Sector Development

The regression analysis indicates that foreign aid (AID) also lacks a statistically significant influence on private sector development in Nigeria ($p = 0.6272$). This result challenges the mainstream development narrative that views Official Development Assistance (ODA) as an effective catalyst for economic transformation. While aid can alleviate capital shortages, promote infrastructure, or support SMEs, its impact appears minimal in this context. This aligns with Ogbuaku et al. (2021), who note that aid in Nigeria has often been poorly targeted, frequently diverted to non-productive uses, or undermined by governance challenges. Furthermore, the Lewis Dual Sector Model underscores the importance of capital

reinvestment in the productive sector for development, a mechanism that aid does not seem to sufficiently support in Nigeria's context. This muted impact may also reflect the fragmented coordination between aid donors and domestic policy frameworks, weakening aid effectiveness. In essence, the findings echo the views of Dependency theorists who argue that aid can perpetuate dependency rather than catalyze structural transformation. The result signals a need for stronger alignment between aid inflows and private sector development strategies, especially in terms of infrastructure and MSME support.

#### 4.4.4. Remittances (REM) and Private Sector Development

Unlike the other capital inflow types, remittances (REM) have a strong, statistically significant positive impact on private sector development in Nigeria (coefficient = 0.0815, p = 0.0000). This finding is consistent with Okafor (2019) and Ratha (2013), who argue that remittances serve as a stable and countercyclical source of finance, often directly invested in consumption, education, healthcare, and small business creation. Given that remittances are largely untied and non-debt-creating, they provide a direct financial lifeline to households and local entrepreneurs, facilitating informal sector expansion and access to credit. Unlike FPI or FDI, remittances bypass institutional constraints and reach end-users more directly, which may explain their superior effectiveness. This result also supports the Lewis Dual Sector Model, in that remittances act as a form of external capital accumulation, enabling

rural-to-urban migration and informal sector employment; a pattern observable in Nigeria. At the same time, the positive impact of remittances provides a counterpoint to Dependency Theory, which tends to view all external capital flows with suspicion. Instead, the evidence here suggests that remittances are the most developmentally potent form of foreign capital, at least within Nigeria's current structural realities.

### 4.5 Policy Implication

The findings of this study carry important policy implications for Nigeria's economic management, particularly in the realm of foreign capital mobilization and private sector development. Policymakers must recognize that not all foreign capital inflows contribute equally to private sector growth. While remittances have demonstrated a consistently positive and significant impact, suggesting the need for policies that facilitate diaspora engagement, reduce remittance transfer costs, and channel inflows into productive investments, foreign portfolio investments (FPI) pose a risk to financial stability and should be carefully regulated to mitigate short-term volatility and speculative behavior. The limited effectiveness of FDI and foreign aid points to the urgent need for improving Nigeria's absorptive capacity through investments in infrastructure, institutional reforms, and human capital development to enable more meaningful integration of external capital into the domestic productive sector. In essence, foreign capital should not be pursued indiscriminately; rather, Nigeria's development strategy should focus on enhancing the domestic environment to ensure that such inflows support sustainable and inclusive private sector growth.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

## 5.1 Introduction

The study examined foreign capital inflows and private sector development in Nigeria spanning periods from 1990 to 2023 based on the accessibility of data. Four hypotheses were raised and evaluated using the robust least squares estimator. In concluding the research, this final chapter documents the summary of findings, conclusion and recommendations of the study.

## 5.2 Summary of Findings

Based on the analysis conducted, the following findings were made:

1. The empirical result shows that foreign portfolio investment (FPI) has a statistically significant negative effect on private sector development in Nigeria (coefficient = -0.0043, p = 0.0005).
2. Despite its centrality in both theory and policy, the regression output shows that foreign direct investment (FDI) does not have a statistically significant effect on private sector development in Nigeria (p = 0.7118).
3. The regression analysis indicates that foreign aid (AID) also lacks a statistically significant influence on private sector development in Nigeria (p = 0.6272).

4. Unlike the other capital inflow types, remittances (REM) have a strong, statistically significant positive impact on private sector development in Nigeria (coefficient = 0.0815, p = 0.0000).

### 5.3 Conclusion

This study focused on evaluating the impact of foreign capital inflows specifically foreign portfolio investment (FPI), foreign direct investment (FDI), foreign aid (AID), and remittances (REM) on private sector development in Nigeria over the period 1990 to 2023. Using the robust least squares estimation technique to account for data irregularities and model misspecification, the findings revealed significant variation in the effects of different capital inflow types. Notably, FPI exhibited a statistically significant negative impact on private sector development, while both FDI and AID showed no significant influence. In contrast, remittances emerged as the only inflow with a strong, positive, and statistically significant effect on private sector growth. These results underscore the importance of discerning the quality and structure of external capital, highlighting that only capital channeled effectively such as remittances supports meaningful private sector development. The study concludes that Nigeria's ability to harness the benefits of foreign capital lies not merely in attracting inflows, but in creating a conducive domestic environment that aligns such inflows with national development priorities.

## 5.4 Recommendations

### 5.4.1 Policy Recommendations

Based on the empirical findings of this study, the following policy recommendations are proposed:

1. **Strengthen Remittance Mobilization Frameworks**: Given the significant positive impact of remittances on private sector development, the government should implement policies that reduce transaction costs, enhance financial inclusion, and incentivize diaspora investments through structured platforms such as diaspora bonds and remittance-backed small business financing schemes.

2. **Regulate and Monitor Foreign Portfolio Investment (FPI)**: In light of the negative effect of FPI on private sector growth, regulatory institutions such as the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC) should introduce prudential capital controls to curb speculative capital flows and develop early-warning mechanisms to manage sudden inflow reversals.

3. **Reform Investment Climate to Improve FDI Effectiveness**: While FDI was found to have no significant impact, this may reflect the country's weak absorptive capacity. Policymakers should prioritize infrastructure development, ensure regulatory stability,

and streamline business processes to attract efficiency-seeking and productivity-enhancing FDI, particularly in the manufacturing sector.

4. **Realign Foreign Aid with Private Sector Priorities**: The lack of significant impact from foreign aid suggests misalignment with productive economic sectors. Development assistance should be reoriented toward capacity-building, infrastructure for industrial zones, and support for MSMEs to ensure that aid contributes meaningfully to private sector growth and long-term development.

### 5.4.2 Suggestions for Further Studies

Future research should consider expanding the scope of analysis by incorporating sector-specific evaluations of foreign capital inflows. While this study focused on the aggregate private sector, disaggregating the effects across key sectors such as manufacturing, agriculture, services, and technology could provide more nuanced insights into where different types of capital inflows have the most or least impact. Additionally, incorporating interactive variables, such as infrastructure quality, institutional strength, or macroeconomic stability, can help identify the conditional effects of foreign capital—thereby testing the absorptive capacity hypothesis more explicitly. This would allow researchers to examine how domestic factors mediate or amplify the impact of foreign inflows, aligning with emerging literature on the contingent nature of foreign capital effectiveness in developing economies.

Moreover, subsequent studies should explore the non-linear and threshold effects of foreign capital inflows to determine whether there are optimal levels beyond which the developmental benefits of inflows either plateau or reverse. Employing advanced econometric techniques such as threshold regression models, vector error correction models (VECM), or dynamic panel data models could provide more robust evidence, especially in cross-country contexts. Finally, future studies should also account for the post-2023 global financial and geopolitical dynamics, including rising interest rates, regional instability, and digital financial flows, which may significantly reshape the landscape of foreign capital inflows and their effects on private sector development in Nigeria and other emerging economies.

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## APPENDICES

### DATA

| YEAR | FDI USD | FPI USD | AID USD | REM USD | PRIV | LOG FDI | LOG FPI | LOG AID | LOG REM | LOG PRIV |
|---|---|---|---|---|---|---|---|---|---|---|
| 1990 | 587882970.6 | 197148078.8 | 255080001.8 | 10008540.02 | 4.957522443 | 8.769291 | 8.294793 | 8.406676 | 7.000370 8 | 0.775065 7 |
| 1991 | 712373362.5 | 61109599.48 | 258320007.3 | 65544714.33 | 5.241096469 | 8.852708 | 7.786109 | 8.412158 | 7.816537 7 | 0.795260 9 |
| 1992 | 896641282.5 | -1884268077 | 258820007.3 | 56448404.41 | 8.234513857 | 8.952619 | -9.27514 | 8.412998 | 7.751651 7 | 0.965414 |
| 1993 | 1345368587 | 17780308.07 | 288420013.4 | 793154025.5 | 7.007718165 | 9.128841 | 7.249939 | 8.460025 | 8.899357 5 | 0.903508 8 |
| 1994 | 1959219858 | 27141298.42 | 189660003.7 | 549872704.1 | 8.037288168 | 9.292083 | 7.433631 | 8.277976 | 8.740262 2 | 0.956038 1 |
| 1995 | 335842165 | 25583636.3 | 210960006.7 | 250043007.2 | 6.508711496 | 8.526135 | 7.407962 | 8.3242 | 8.398014 7 | 0.875565 4 |
| 1996 | 499276809.5 | 54088507.95 | 188750000 | 296587337.3 | 6.174443942 | 8.698341 | 7.733105 | 8.275887 | 8.472152 6 | 0.855788 2 |
| 1997 | 469577019.8 | 20321016.1 | 199839996.3 | 585738409.8 | 7.030590147 | 8.671707 | 7.307945 | 8.300682 | 8.767703 7 | 0.904747 5 |
| 1998 | 299566658.3 | 2363115.767 | 203339996.3 | 448546824.8 | 7.619452394 | 8.476493 | 6.373485 | 8.308223 | 8.651807 8 | 0.935479 7 |
| 1999 | 1004915631 | -11013871.85 | 151990005.5 | 1301055577 | 8.168807855 | 9.00213 | -7.04194 | 8.181815 | 9.114295 8 | 0.962312 9 |
| 2000 | 1140167556 | -502264890.6 | 173800003.1 | 1391826072 | 8.248988698 | 9.056969 | -8.70093 | 8.24005 | 9.143585 | 0.966094 2 |
| 2001 | 1190618644 | -831771646.9 | 167820007.3 | 1166614598 | 9.880807397 | 9.075773 | -8.92 | 8.224844 | 9.066927 4 | 1.036661 1 |
| 2002 | 1874070753 | -133938021.8 | 299549987.8 | 1208958588 | 8.084342998 | 9.272786 | -8.1269 | 8.476469 | 9.082411 4 | 0.958293 5 |
| 2003 | 2005353563 | -182894058.2 | 309850006.1 | 1062820789 | 8.909484726 | 9.302191 | -8.2622 | 8.491152 | 9.02646 | 0.996051 1 |
| 2004 | 1874060887 | -177818881.7 | 578770019.5 | 2272734507 | 8.461664055 | 9.272784 | -8.24998 | 8.762506 | 9.356548 7 | 0.975967 5 |
| 2005 | 4982533930 | 487949764.2 | 6401790039 | 14640084310 | 8.435095263 | 9.69745 | 8.688375 | 9.806301 | 10.16554 4 | 0.974746 3 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2006 | 4854353979 | -1288018525 | 1143195996 1 | 16932144079 | 8.12036045 3 | 9.68613 1 | -9.10992 | 10.0581 2 | 10.22871 2 | 0.960012 |
| 2007 | 6036021405 | -799672941.1 | 1643209961 | 18014430787 | 13.7970169 3 | 9.78075 1 | -8.90291 | 9.21569 3 | 10.25562 1 | 1.170174 2 |
| 2008 | 8194071895 | 3401810908 | 960679992.7 | 19199974036 | 18.6330147 | 9.9135 | 9.53171 | 8.98257 9 | 10.28330 1 | 1.292987 |
| 2009 | 8555990007 | 345305077.9 | 1163290039 | 18370796915 | 19.6256016 6 | 9.93227 | 8.53820 3 | 9.06568 8 | 10.26412 8 | 1.314406 6 |
| 2010 | 6026253091 | -2586452804 | 2052360107 | 19744755063 | 13.4907428 4 | 9.78004 7 | -9.4127 | 9.31225 4 | 10.29545 2 | 1.161090 6 |
| 2011 | 8841062051 | -3540318310 | 1809859985 | 20616772501 | 11.0436296 1 | 9.94650 4 | -9.54904 | 9.25764 5 | 10.31422 1 | 1.080757 4 |
| 2012 | 7069908428 | -14992409830 | 1916109985 | 20542884460 | 10.6047037 7 | 9.84941 4 | -10.1759 | 9.28242 | 10.31266 1 | 1.064634 1 |
| 2013 | 5562857987 | -10320930913 | 2515659912 | 20797073957 | 11.5332149 4 | 9.74529 8 | -10.0137 | 9.40065 2 | 10.31800 2 | 1.098062 5 |
| 2014 | 4693828632 | -1843622658 | 2478600098 | 20999084800 | 13.2970053 8 | 9.67152 7 | -9.26567 | 9.39420 6 | 10.3222 | 1.155245 1 |
| 2015 | 3064168904 | -858700673.5 | 2431540039 | 20626046924 | 13.0786844 8 | 9.48631 3 | -8.93384 | 9.38588 1 | 10.31441 6 | 1.148562 1 |
| 2016 | 3453258408 | -1894322229 | 2498189941 | 19697938004 | 14.6080388 6 | 9.53822 9 | -9.27745 | 9.39762 5 | 10.29442 1 | 1.193348 3 |
| 2017 | 2412974916 | -10331328580 | 3356350098 | 22037016832 | 12.8520298 1 | 9.38255 3 | -10.0142 | 9.52586 7 | 10.34315 3 | 1.141513 4 |
| 2018 | 775247400 | 6779467.05 | 3303270020 | 24311022416 | 10.2465813 | 8.88944 | 6.83119 6 | 9.51894 4 | 10.38580 3 | 1.051020 5 |
| 2019 | 2305099812 | -3090853025 | 3275409912 | 23809281401 | 11.1575566 5 | 9.36269 | -9.49008 | 9.51526 6 | 10.37674 6 | 1.084846 3 |
| 2020 | 2385277666 | 3691340692 | 3375860107 | 17207547306 | 12.1318506 | 9.37753 9 | 9.56718 4 | 9.52838 4 | 10.23571 9 | 1.118325 9 |
| 2021 | 3313210000 | -5343327271 | 3527699951 | 19483402059 | 13.4494491 6 | 9.52024 9 | -9.72781 | 9.54749 2 | 10.28966 5 | 1.159851 3 |
| 2022 | -186792428.9 | -3864707334 | 4443259766 | 20127614151 | 12.9574673 1 | -8.27136 | -9.58712 | 9.64770 2 | 10.30379 2 | 1.144806 6 |
| 2023 | 1872520530 | -6216386548 | 4443259766 | 19549549365 | 12.9574673 1 | 9.27242 7 | -9.79354 | 9.64770 2 | 10.29113 7 | 1.144806 6 |

**OUTPUT FROM ANALYSIS**

| | PRIV | FDI | FPI | AID | REM |
|---|---|---|---|---|---|
| Mean | 1.038866 | 8.791524 | -2.620215 | 8.971944 | 9.555376 |
| Median | 1.043841 | 9.297137 | -8.481566 | 9.140691 | 10.23222 |
| Maximum | 1.314407 | 9.946504 | 9.567184 | 10.05812 | 10.38580 |
| Minimum | 0.775066 | -8.271359 | -10.17587 | 8.181815 | 7.000371 |
| Std. Dev. | 0.131008 | 3.043892 | 8.445232 | 0.580776 | 0.944214 |
| Skewness | 0.019513 | -5.403887 | 0.484877 | -0.000101 | -0.929435 |
| Kurtosis | 2.460799 | 30.83244 | 1.274836 | 1.493107 | 2.877829 |
| | | | | | |
| Jarque-Bera | 0.414036 | 1262.891 | 5.548535 | 3.216864 | 4.916297 |
| Probability | 0.813005 | 0.000000 | 0.062395 | 0.200201 | 0.085593 |
| | | | | | |
| Sum | 35.32145 | 298.9118 | -89.08730 | 305.0461 | 324.8828 |
| Sum Sq. Dev. | 0.566386 | 305.7541 | 2353.624 | 11.13094 | 29.42080 |
| | | | | | |
| Observations | 34 | 34 | 34 | 34 | 34 |

Covariance Analysis: Ordinary
Date: 23/09/25 Time: 05:03
Sample: 1990 2023
Included observations: 34

Covariance
Correlation
t-Statistic
Probability

| | PRIV | FDI | FPI | AID | REM |
|---|---|---|---|---|---|
| PRIV | 0.016658 | | | | |
| | 1.000000 | | | | |
| | ----- | | | | |
| | ----- | | | | |
| FDI | -0.015064 | 8.992768 | | | |
| | -0.038920 | 1.000000 | | | |
| | -0.220334 | ----- | | | |
| | 0.8270 | ----- | | | |

| | | | | | |
|---|---|---|---|---|---|
| FPI | -0.368439 | 2.267572 | 69.22425 | | |
| | -0.343099 | 0.090884 | 1.000000 | | |
| | -2.066289 | 0.516252 | ----- | | |
| | 0.0470 | 0.6092 | ----- | | |
| AID | 0.045541 | -0.193047 | -1.556555 | 0.327381 | |
| | 0.616683 | -0.112510 | -0.326971 | 1.000000 | |
| | 4.431448 | -0.640519 | -1.957205 | ----- | |
| | 0.0001 | 0.5264 | 0.0591 | ----- | |
| REM | 0.099802 | -0.094695 | -3.111289 | 0.444535 | 0.865318 |
| | 0.831257 | -0.033946 | -0.401998 | 0.835202 | 1.000000 |
| | 8.459062 | -0.192141 | -2.483553 | 8.591093 | ----- |
| | 0.0000 | 0.8488 | 0.0184 | 0.0000 | ----- |

Null Hypothesis: PRIV has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -3.410453 | 0.0677 |
| Test critical values: | 1% level | -4.273277 | |
| | 5% level | -3.557759 | |
| | 10% level | -3.212361 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(PRIV)
Method: Least Squares
Date: 23/09/25 Time: 05:04
Sample (adjusted): 1992 2023
Included observations: 32 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| PRIV(-1) | -0.528893 | 0.155080 | -3.410453 | 0.0020 |
| D(PRIV(-1)) | 0.320978 | 0.175354 | 1.830463 | 0.0778 |
| C | 0.477651 | 0.134905 | 3.540648 | 0.0014 |
| @TREND("1990") | 0.004664 | 0.002043 | 2.283190 | 0.0302 |

| | | | |
|---|---|---|---|
| R-squared | 0.306394 | Mean dependent var | 0.010923 |
| Adjusted R-squared | 0.232079 | S.D. dependent var | 0.073462 |
| S.E. of regression | 0.064375 | Akaike info criterion | -2.531703 |
| Sum squared resid | 0.116037 | Schwarz criterion | -2.348486 |
| Log likelihood | 44.50725 | Hannan-Quinn criter. | -2.470972 |
| F-statistic | 4.122909 | Durbin-Watson stat | 1.989711 |
| Prob(F-statistic) | 0.015324 | | |

Null Hypothesis: D(PRIV) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 2 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -5.269347 | 0.0009 |
| Test critical values: | 1% level | -4.296729 | |
| | 5% level | -3.568379 | |
| | 10% level | -3.218382 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(PRIV,2)
Method: Least Squares
Date: 23/09/25 Time: 05:05
Sample (adjusted): 1994 2023
Included observations: 30 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(PRIV(-1)) | -1.400237 | 0.265733 | -5.269347 | 0.0000 |
| D(PRIV(-1),2) | 0.526361 | 0.208031 | 2.530203 | 0.0181 |
| D(PRIV(-2),2) | 0.474454 | 0.153482 | 3.091273 | 0.0048 |
| C | 0.032682 | 0.027277 | 1.198146 | 0.2421 |
| @TREND("1990") | -0.001045 | 0.001315 | -0.794519 | 0.4344 |

| | | | |
|---|---|---|---|
| R-squared | 0.591518 | Mean dependent var | 0.002064 |
| Adjusted R-squared | 0.526161 | S.D. dependent var | 0.089433 |
| S.E. of regression | 0.061562 | Akaike info criterion | -2.586527 |
| Sum squared resid | 0.094747 | Schwarz criterion | -2.352994 |
| Log likelihood | 43.79791 | Hannan-Quinn criter. | -2.511818 |
| F-statistic | 9.050559 | Durbin-Watson stat | 2.065953 |
| Prob(F-statistic) | 0.000116 | | |

Null Hypothesis: FDI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -5.703305 | 0.0000 |
| Test critical values: | 1% level | -3.646342 | |
| | 5% level | -2.954021 | |
| | 10% level | -2.615817 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI)
Method: Least Squares
Date: 23/09/25 Time: 05:05
Sample (adjusted): 1991 2023
Included observations: 33 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| FDI(-1) | -1.024437 | 0.179622 | -5.703305 | 0.0000 |
| C | 9.006677 | 1.668576 | 5.397821 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.512024 | Mean dependent var | 0.015247 |
| Adjusted R-squared | 0.496283 | S.D. dependent var | 4.423662 |
| S.E. of regression | 3.139607 | Akaike info criterion | 5.184764 |
| Sum squared resid | 305.5712 | Schwarz criterion | 5.275462 |
| Log likelihood | -83.54861 | Hannan-Quinn criter. | 5.215281 |
| F-statistic | 32.52769 | Durbin-Watson stat | 1.999505 |
| Prob(F-statistic) | 0.000003 | | |

Null Hypothesis: D(FDI) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -0.332464 | 0.9081 |
| Test critical values: | 1% level | -3.679322 | |
| | 5% level | -2.967767 | |
| | 10% level | -2.622989 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI,2)
Method: Least Squares
Date: 23/09/25 Time: 05:06
Sample (adjusted): 1995 2023
Included observations: 29 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(FDI(-1)) | -1.780712 | 5.356102 | -0.332464 | 0.7424 |
| D(FDI(-1),2) | -0.145083 | 5.295004 | -0.027400 | 0.9784 |
| D(FDI(-2),2) | -0.996318 | 4.085773 | -0.243850 | 0.8094 |

| | | | | |
|---|---|---|---|---|
| D(FDI(-3),2) | -4.296233 | 2.568898 | -1.672403 | 0.1074 |
| C | -0.567689 | 0.601215 | -0.944236 | 0.3545 |

| | | | |
|---|---|---|---|
| R-squared | 0.846602 | Mean dependent var | 0.599329 |
| Adjusted R-squared | 0.821036 | S.D. dependent var | 7.474814 |
| S.E. of regression | 3.162156 | Akaike info criterion | 5.295971 |
| Sum squared resid | 239.9815 | Schwarz criterion | 5.531711 |
| Log likelihood | -71.79158 | Hannan-Quinn criter. | 5.369802 |
| F-statistic | 33.11400 | Durbin-Watson stat | 2.137064 |
| Prob(F-statistic) | 0.000000 | | |

Null Hypothesis: FPI has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -4.879484 | 0.0022 |
| Test critical values: | 1% level | -4.262735 | |
| | 5% level | -3.552973 | |
| | 10% level | -3.209642 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FPI)
Method: Least Squares
Date: 23/09/25 Time: 05:06
Sample (adjusted): 1991 2023
Included observations: 33 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FPI(-1) | -0.878605 | 0.180061 | -4.879484 | 0.0000 |
| C | 2.532899 | 2.874195 | 0.881255 | 0.3852 |
| @TREND("1990") | -0.305422 | 0.157892 | -1.934373 | 0.0625 |

| | | | |
|---|---|---|---|
| R-squared | 0.442705 | Mean dependent var | -0.548131 |
| Adjusted R-squared | 0.405552 | S.D. dependent var | 10.14484 |
| S.E. of regression | 7.821716 | Akaike info criterion | 7.038193 |
| Sum squared resid | 1835.377 | Schwarz criterion | 7.174239 |
| Log likelihood | -113.1302 | Hannan-Quinn criter. | 7.083968 |
| F-statistic | 11.91573 | Durbin-Watson stat | 2.021435 |
| Prob(F-statistic) | 0.000155 | | |

Null Hypothesis: D(FPI) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -8.853310 | 0.0000 |
| Test critical values: | 1% level | -4.273277 | |
| | 5% level | -3.557759 | |
| | 10% level | -3.212361 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FPI,2)
Method: Least Squares
Date: 23/09/25 Time: 05:07
Sample (adjusted): 1992 2023
Included observations: 32 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(FPI(-1)) | -1.459843 | 0.164892 | -8.853310 | 0.0000 |
| C | -1.389556 | 3.587343 | -0.387350 | 0.7013 |
| @TREND("1990") | 0.033327 | 0.181172 | 0.183954 | 0.8553 |

| | | | |
|---|---|---|---|
| R-squared | 0.729934 | Mean dependent var | 0.009446 |
| Adjusted R-squared | 0.711309 | S.D. dependent var | 17.60819 |
| S.E. of regression | 9.460878 | Akaike info criterion | 7.421267 |
| Sum squared resid | 2595.738 | Schwarz criterion | 7.558680 |

| | | | |
|---|---|---|---|
| Log likelihood | -115.7403 | Hannan-Quinn criter. | 7.466816 |
| F-statistic | 39.19063 | Durbin-Watson stat | 2.142471 |
| Prob(F-statistic) | 0.000000 | | |

Null Hypothesis: AID has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -3.587143 | 0.0470 |
| Test critical values: | 1% level | -4.273277 | |
| | 5% level | -3.557759 | |
| | 10% level | -3.212361 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(AID)
Method: Least Squares
Date: 23/09/25 Time: 05:07
Sample (adjusted): 1992 2023
Included observations: 32 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| AID(-1) | -0.496287 | 0.138352 | -3.587143 | 0.0013 |
| D(AID(-1)) | 0.446593 | 0.167287 | 2.669617 | 0.0125 |
| C | 4.025419 | 1.118415 | 3.599216 | 0.0012 |
| @TREND("1990") | 0.025532 | 0.008258 | 3.091911 | 0.0045 |

| | | | |
|---|---|---|---|
| R-squared | 0.343914 | Mean dependent var | 0.038611 |
| Adjusted R-squared | 0.273619 | S.D. dependent var | 0.265130 |
| S.E. of regression | 0.225965 | Akaike info criterion | -0.020402 |
| Sum squared resid | 1.429689 | Schwarz criterion | 0.162815 |
| Log likelihood | 4.326432 | Hannan-Quinn criter. | 0.040329 |

| | | | |
|---|---|---|---|
| F-statistic | 4.892440 | Durbin-Watson stat | 1.754443 |
| Prob(F-statistic) | 0.007379 | | |

Null Hypothesis: D(AID) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -5.640367 | 0.0003 |
| Test critical values: | 1% level | -4.284580 | |
| | 5% level | -3.562882 | |
| | 10% level | -3.215267 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(AID,2)
Method: Least Squares
Date: 23/09/25 Time: 05:08
Sample (adjusted): 1993 2023
Included observations: 31 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(AID(-1)) | -1.188699 | 0.210749 | -5.640367 | 0.0000 |
| D(AID(-1),2) | 0.496204 | 0.167342 | 2.965206 | 0.0063 |
| C | 0.039362 | 0.097586 | 0.403358 | 0.6899 |
| @TREND("1990") | 0.000360 | 0.004850 | 0.074130 | 0.9415 |

| | | | |
|---|---|---|---|
| R-squared | 0.545445 | Mean dependent var | -2.71E-05 |
| Adjusted R-squared | 0.494939 | S.D. dependent var | 0.339690 |
| S.E. of regression | 0.241410 | Akaike info criterion | 0.115271 |
| Sum squared resid | 1.573522 | Schwarz criterion | 0.300302 |
| Log likelihood | 2.213301 | Hannan-Quinn criter. | 0.175586 |
| F-statistic | 10.79959 | Durbin-Watson stat | 1.941606 |

| | |
|---|---|
| Prob(F-statistic) | 0.000077 |

Null Hypothesis: REM has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -2.929894 | 0.1666 |
| Test critical values: | 1% level | -4.262735 | |
| | 5% level | -3.552973 | |
| | 10% level | -3.209642 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(REM)
Method: Least Squares
Date: 23/09/25 Time: 05:08
Sample (adjusted): 1991 2023
Included observations: 33 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| REM(-1) | -0.316868 | 0.108150 | -2.929894 | 0.0064 |
| C | 2.823081 | 0.874456 | 3.228384 | 0.0030 |
| @TREND("1990") | 0.017492 | 0.010622 | 1.646731 | 0.1101 |

| | | | |
|---|---|---|---|
| R-squared | 0.307294 | Mean dependent var | 0.099720 |
| Adjusted R-squared | 0.261113 | S.D. dependent var | 0.302629 |
| S.E. of regression | 0.260135 | Akaike info criterion | 0.231277 |
| Sum squared resid | 2.030108 | Schwarz criterion | 0.367323 |
| Log likelihood | -0.816068 | Hannan-Quinn criter. | 0.277052 |
| F-statistic | 6.654196 | Durbin-Watson stat | 2.054873 |
| Prob(F-statistic) | 0.004057 | | |

Null Hypothesis: D(REM) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -7.032817 | 0.0000 |
| Test critical values: | 1% level | -4.273277 | |
| | 5% level | -3.557759 | |
| | 10% level | -3.212361 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(REM,2)
Method: Least Squares
Date: 23/09/25 Time: 05:09
Sample (adjusted): 1992 2023
Included observations: 32 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(REM(-1)) | -1.191753 | 0.169456 | -7.032817 | 0.0000 |
| C | 0.255451 | 0.114706 | 2.227018 | 0.0339 |
| @TREND("1990") | -0.009047 | 0.005542 | -1.632521 | 0.1134 |

| | | | |
|---|---|---|---|
| R-squared | 0.632664 | Mean dependent var | -0.025901 |
| Adjusted R-squared | 0.607331 | S.D. dependent var | 0.436700 |
| S.E. of regression | 0.273651 | Akaike info criterion | 0.335132 |
| Sum squared resid | 2.171658 | Schwarz criterion | 0.472545 |
| Log likelihood | -2.362110 | Hannan-Quinn criter. | 0.380680 |
| F-statistic | 24.97341 | Durbin-Watson stat | 1.919242 |
| Prob(F-statistic) | 0.000000 | | |

Dependent Variable: PRIV

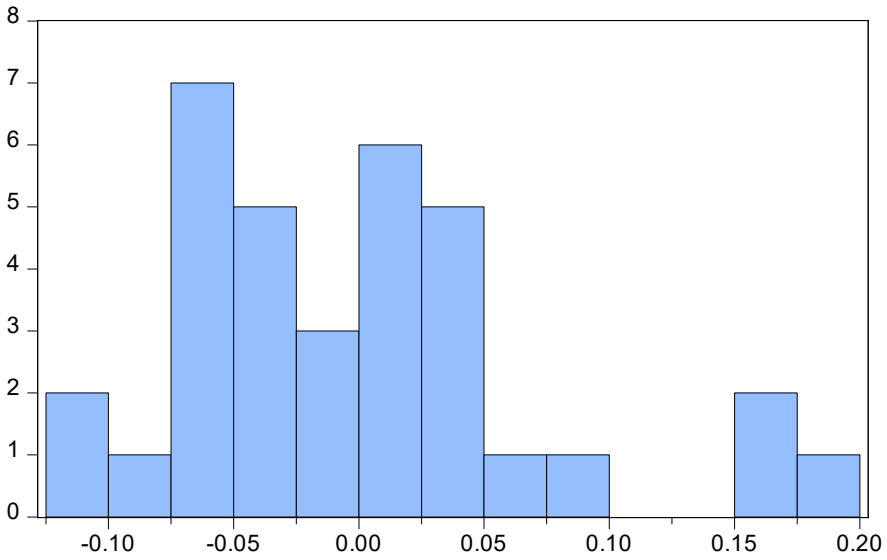
Method: Least Squares
Date: 23/09/25 Time: 05:09
Sample: 1990 2023
Included observations: 34

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FDI | -0.001408 | 0.004360 | -0.322873 | 0.7491 |
| FPI | -7.55E-05 | 0.001695 | -0.044525 | 0.9648 |
| AID | -0.059888 | 0.041385 | -1.447080 | 0.1586 |
| REM | 0.145676 | 0.026171 | 5.566325 | 0.0000 |
| C | 0.196362 | 0.227828 | 0.861884 | 0.3958 |

| | | | |
|---|---|---|---|
| R-squared | 0.711979 | Mean dependent var | 1.038866 |
| Adjusted R-squared | 0.672252 | S.D. dependent var | 0.131008 |
| S.E. of regression | 0.075001 | Akaike info criterion | -2.207566 |
| Sum squared resid | 0.163131 | Schwarz criterion | -1.983101 |
| Log likelihood | 42.52862 | Hannan-Quinn criter. | -2.131017 |
| F-statistic | 17.92176 | Durbin-Watson stat | 1.307497 |
| Prob(F-statistic) | 0.000000 | | |

Variance Inflation Factors
Date: 23/09/25 Time: 05:10
Sample: 1990 2023
Included observations: 34

| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
|---|---|---|---|
| FDI | 1.90E-05 | 9.913456 | 1.033213 |
| FPI | 2.87E-06 | 1.321708 | 1.202452 |
| AID | 0.001713 | 836.6872 | 3.389067 |
| REM | 0.000685 | 381.5674 | 3.582240 |
| C | 0.051906 | 313.7297 | NA |




Series: Residuals
Sample 1990 2023
Observations 34

| | |
|---|---|
| Mean | -1.84e-16 |
| Median | -0.007727 |
| Maximum | 0.180355 |
| Minimum | -0.111125 |
| Std. Dev. | 0.070309 |
| Skewness | 0.843858 |
| Kurtosis | 3.378823 |
| Jarque-Bera | 4.238513 |
| Probability | 0.120121 |

Breusch-Godfrey Serial Correlation LM Test:

| | | | |
|---|---|---|---|
| F-statistic | 1.870647 | Prob. F(2,27) | 0.1734 |
| Obs*R-squared | 4.137887 | Prob. Chi-Square(2) | 0.1263 |

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 23/09/25 Time: 05:11
Sample: 1990 2023
Included observations: 34
Presample missing value lagged residuals set to zero.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FDI | 0.001127 | 0.004275 | 0.263711 | 0.7940 |
| FPI | -0.000736 | 0.001701 | -0.432609 | 0.6687 |

| | | | | |
|---|---|---|---|---|
| AID | 0.007439 | 0.040706 | 0.182758 | 0.8564 |
| REM | -0.008297 | 0.025919 | -0.320125 | 0.7513 |
| C | 0.000979 | 0.222365 | 0.004403 | 0.9965 |
| RESID(-1) | 0.384298 | 0.199285 | 1.928390 | 0.0644 |
| RESID(-2) | -0.107052 | 0.196551 | -0.544655 | 0.5905 |

| | | | |
|---|---|---|---|
| R-squared | 0.121703 | Mean dependent var | -1.84E-16 |
| Adjusted R-squared | -0.073475 | S.D. dependent var | 0.070309 |
| S.E. of regression | 0.072846 | Akaike info criterion | -2.219689 |
| Sum squared resid | 0.143278 | Schwarz criterion | -1.905438 |
| Log likelihood | 44.73471 | Hannan-Quinn criter. | -2.112520 |
| F-statistic | 0.623549 | Durbin-Watson stat | 2.001949 |
| Prob(F-statistic) | 0.709852 | | |

Heteroskedasticity Test: Breusch-Pagan-Godfrey

| | | | |
|---|---|---|---|
| F-statistic | 0.852586 | Prob. F(4,29) | 0.5038 |
| Obs*R-squared | 3.577616 | Prob. Chi-Square(4) | 0.4662 |
| Scaled explained SS | 3.095737 | Prob. Chi-Square(4) | 0.5419 |

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 23/09/25 Time: 05:11
Sample: 1990 2023
Included observations: 34

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.014959 | 0.023024 | -0.649705 | 0.5210 |
| FDI | 0.000329 | 0.000441 | 0.746864 | 0.4612 |
| FPI | 0.000270 | 0.000171 | 1.578048 | 0.1254 |
| AID | 0.001844 | 0.004182 | 0.440812 | 0.6626 |
| REM | 0.000108 | 0.002645 | 0.040811 | 0.9677 |

| | | | |
|---|---|---|---|
| R-squared | 0.105224 | Mean dependent var | 0.004798 |
| Adjusted R-squared | -0.018193 | S.D. dependent var | 0.007511 |
| S.E. of regression | 0.007579 | Akaike info criterion | -6.791702 |

| | | | |
|---|---|---|---|
| Sum squared resid | 0.001666 | Schwarz criterion | -6.567237 |
| Log likelihood | 120.4589 | Hannan-Quinn criter. | -6.715153 |
| F-statistic | 0.852586 | Durbin-Watson stat | 1.745111 |
| Prob(F-statistic) | 0.503788 | | |

Ramsey RESET Test
Equation: UNTITLED
Specification: PRIV FDI FPI AID REM C
Omitted Variables: Squares of fitted values

| | Value | df | Probability |
|---|---|---|---|
| t-statistic | 3.849372 | 28 | 0.0006 |
| F-statistic | 14.81767 | (1, 28) | 0.0006 |
| Likelihood ratio | 14.44137 | 1 | 0.0001 |

F-test summary:

| | Sum of Sq. | df | Mean Squares |
|---|---|---|---|
| Test SSR | 0.056454 | 1 | 0.056454 |
| Restricted SSR | 0.163131 | 29 | 0.005625 |
| Unrestricted SSR | 0.106677 | 28 | 0.003810 |

LR test summary:

| | Value |
|---|---|
| Restricted LogL | 42.52862 |
| Unrestricted LogL | 49.74930 |

Unrestricted Test Equation:
Dependent Variable: PRIV
Method: Least Squares
Date: 23/09/25 Time: 05:12
Sample: 1990 2023
Included observations: 34

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FDI | 0.007696 | 0.004297 | 1.790889 | 0.0841 |

| | | | | |
|---|---|---|---|---|
| FPI | 0.000423 | 0.001401 | 0.301592 | 0.7652 |
| AID | 0.247604 | 0.086839 | 2.851306 | 0.0081 |
| REM | -0.774455 | 0.240002 | -3.226863 | 0.0032 |
| C | 2.438850 | 0.611989 | 3.985119 | 0.0004 |
| FITTED^2 | 3.402222 | 0.883838 | 3.849372 | 0.0006 |

| | | | |
|---|---|---|---|
| R-squared | 0.811653 | Mean dependent var | 1.038866 |
| Adjusted R-squared | 0.778019 | S.D. dependent var | 0.131008 |
| S.E. of regression | 0.061724 | Akaike info criterion | -2.573488 |
| Sum squared resid | 0.106677 | Schwarz criterion | -2.304131 |
| Log likelihood | 49.74930 | Hannan-Quinn criter. | -2.481630 |
| F-statistic | 24.13230 | Durbin-Watson stat | 1.515907 |
| Prob(F-statistic) | 0.000000 | | |

Dependent Variable: PRIV
Method: Robust Least Squares
Date: 23/09/25 Time: 05:13
Sample: 1990 2023
Included observations: 34
Method: M-estimation
M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)
Huber Type I Standard Errors & Covariance

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|---|---|---|---|---|
| FDI | -0.001162 | 0.003146 | -0.369388 | 0.7118 |
| FPI | -0.004271 | 0.001223 | -3.492178 | 0.0005 |
| AID | 0.014501 | 0.029859 | 0.485668 | 0.6272 |
| REM | 0.081540 | 0.018882 | 4.318420 | 0.0000 |
| C | 0.115085 | 0.164375 | 0.700138 | 0.4838 |

Robust Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.650866 | Adjusted R-squared | 0.602709 |
| Rw-squared | 0.856709 | Adjust Rw-squared | 0.856709 |
| Akaike info criterion | 42.72145 | Schwarz criterion | 54.44038 |
| Deviance | 0.111541 | Scale | 0.055048 |
| Rn-squared statistic | 122.5643 | Prob(Rn-squared stat.) | 0.000000 |

| Non-robust Statistics | | | |
|---|---|---|---|
| Mean dependent var | 1.038866 | S.D. dependent var | 0.131008 |
| S.E. of regression | 0.088089 | Sum squared resid | 0.225030 |