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FDI AND ECONOMIC GROWTH IN INDIA: AN EMPIRICAL STUDY

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ABSTRACT

Foreign Direct Investment (FDI) has emerged as one of the most significant sources of external capital for developing economies, providing not only financial resources but also technology, managerial expertise, and access to global markets. Since the initiation of economic liberalisation in 1991, India has progressively relaxed its FDI policy regime, and inflows have grown substantially over the past decade, aided by initiatives such as Make in India, the Production-Linked Incentive (PLI) scheme, and easing of sectoral caps. This paper examines the relationship between FDI inflows and economic growth in India using secondary time-series data for the period 2014-15 to 2023-24, drawing on statistics published by the Department for Promotion of Industry and Internal Trade (DPIIT), the Reserve Bank of India (RBI), and the Ministry of Statistics and Programme Implementation (MoSPI). Descriptive statistics, Pearson correlation, and simple linear regression are used to examine the strength and direction of association between annual FDI inflows and the real GDP growth rate. The results indicate that while FDI inflows have risen fairly consistently in absolute terms, the simple contemporaneous statistical association between annual FDI inflows and GDP growth over this period is weak and statistically insignificant, a finding that is consistent with a section of the existing literature which argues that the growth effects of FDI in India operate with a lag and are mediated by sectoral composition, absorptive capacity, and complementary domestic investment rather than through a simple linear year-on-year relationship. The study concludes with policy suggestions to strengthen the developmental impact of FDI in India.

KEYWORDS: *Foreign Direct Investment, Economic Growth, India, FDI Policy, GDP, Correlation Analysis*

1. INTRODUCTION

Foreign Direct Investment refers to an investment made by a resident entity of one economy to acquire a lasting interest and a significant degree of influence in the management of an enterprise resident in another economy. Unlike portfolio investment, FDI is characterised by a long-term relationship and reflects a lasting interest of a foreign investor in a domestic enterprise. For developing countries such as India, FDI is regarded as an important instrument of economic development because it supplements domestic capital, transfers technology and managerial know-how, generates employment, enhances export competitiveness, and integrates the domestic economy with global production networks.

India's engagement with foreign capital has evolved considerably since independence. In the pre-liberalisation period, India followed a restrictive and highly regulated approach towards foreign investment, guided by import-substitution industrialisation and concerns over economic sovereignty. The balance of payments crisis of 1991 marked a watershed moment, compelling India to undertake sweeping economic reforms, including de-licensing of industry, liberalisation of trade policy, and a progressive opening up of sectors to foreign investment. Over the subsequent three decades, the FDI policy regime has been liberalised in phases, with most sectors now open to 100 per cent FDI under the automatic route, subject to sector-specific conditions.

In the last decade in particular, the Government of India has undertaken several policy initiatives intended to attract higher volumes of quality FDI, including the Make in India campaign launched in 2014, the Production-Linked Incentive (PLI) schemes across 14 sectors, liberalisation of FDI norms in defence, insurance, telecom and single-brand retail, and continuous improvement in the ease of doing business. As a consequence, cumulative FDI inflows into India between April 2014 and March 2024 have been considerably higher than in the preceding decade. At the same time, India's real GDP growth over this period has been volatile, ranging from robust growth in the mid-2010s to a sharp contraction in 2020-21 caused by the COVID-19 pandemic, followed by a strong post-pandemic recovery. This paper is motivated by the need to empirically examine whether the rising trend of FDI inflows into India has been statistically associated with the country's economic growth performance over the last ten years, and to place this relationship in the context of the wider theoretical and empirical literature on FDI-led growth.

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2. REVIEW OF LITERATURE

A substantial body of theoretical and empirical literature has examined the relationship between FDI and economic growth, both in the cross-country context and specifically for India. This section reviews some of the important contributions relevant to the present study. Balasubramanyam, Salisu and Sapsford (1996) compared export-promoting (EP) and import-substituting (IS) developing countries and found that the growth-enhancing effect of FDI is significantly stronger in economies pursuing an export-oriented trade strategy, suggesting that the trade policy regime conditions the effectiveness of foreign capital.

Borensztein, De Gregorio and Lee (1998), using panel data on FDI flows from industrial countries to 69 developing countries, argued that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment, but only when the host country has a minimum threshold stock of human capital, underscoring the idea that FDI's growth impact is conditional on absorptive capacity.

Sharma (2000), examining India's export performance, found only limited evidence that FDI inflows had directly driven export growth during the period studied, pointing instead to the importance of trade policy and domestic supply-side factors.

Chakraborty and Basu (2002), applying a cointegration framework to Indian data, reported that GDP growth influences FDI inflows more than the reverse, implying a demand-following rather than a growth-led pattern of causality for India during the period they examined.

Sahoo (2006), in a study of FDI in South Asian economies for the Asian Development Bank Institute, observed that although India has liberalised its FDI regime considerably, the country continued to receive a relatively modest share of global FDI compared with its economic size, and attributed this to infrastructural bottlenecks and procedural delays.

Chakraborty and Nunnenkamp (2008), using sector-level data for the post-reform period, found that the FDI-growth relationship in India differs markedly across sectors: FDI in the manufacturing sector was found to have a stronger long-run relationship with output growth than FDI in services, where the linkage was weaker and less stable.

Agrawal and Khan (2011), using panel data for India, China and other developing economies, concluded that a one per cent increase in FDI raises GDP by a small but positive margin, with the effect being considerably larger for China than for India, which the authors attributed to differences in infrastructure and manufacturing depth.

Tiwari and Mutascu (2011), studying a panel of Asian economies including India, found a statistically positive relationship between FDI, exports and economic growth, while also cautioning that the strength of the relationship varies with the time period and the econometric specification used.

More recent policy-oriented assessments by the Reserve Bank of India and the Department for Promotion of Industry and Internal Trade have highlighted the rising volume of FDI into India since 2014-15, associated with the Make in India and PLI initiatives, while also noting that a large share of inflows continues to be concentrated in the services, computer software, and trading sectors rather than in manufacturing, which has implications for the employment and productivity effects of FDI.

Taken together, the literature suggests that the FDI-growth relationship is neither automatic nor uniform: it depends on the trade and industrial policy regime, the sectoral composition of inflows, the host country's absorptive capacity, and the time horizon over which the relationship is measured. This provides the motivation for the present study to empirically re-examine the association for India using the most recent decade of data.

3. OBJECTIVES OF THE STUDY

- To study the trend and pattern of FDI inflows into India during the period 2014-15 to 2023-24.
- To examine the trend of India's real GDP growth rate over the same period.
- To empirically analyse the statistical relationship between FDI inflows and GDP growth in India using correlation and regression analysis.
- To identify the sector-wise and country-wise pattern of FDI inflows into India.
- To offer policy suggestions for enhancing the growth-augmenting impact of FDI in India.

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4. METHODOLOGY OF THE STUDY

The present study is descriptive and analytical in nature and is based entirely on secondary data. Data on annual FDI inflows into India (equity plus reinvested earnings and other capital, in US$ million) for the period 2014-15 to 2023-24 have been compiled from the Fact Sheets on Foreign Direct Investment published by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India, and from the Reserve Bank of India's balance of payments data. Data on India's annual real GDP growth rate for the corresponding years have been compiled from the National Accounts Statistics released by the Ministry of Statistics and Programme Implementation (MoSPI) and cross-checked with World Bank and Reserve Bank of India estimates.

The study period, 2014-15 to 2023-24, has been chosen because it captures the phase of India's FDI policy following the launch of Make in India in 2014, includes the structural shock and recovery associated with the COVID-19 pandemic, and represents the most recent decade for which complete annual data are available at the time of writing.

Tools of Analysis

- Descriptive statistics (trend values, percentage change) to examine the pattern of FDI inflows and GDP growth.
- Pearson's product-moment correlation coefficient to measure the strength and direction of the linear association between annual FDI inflows and GDP growth rate.
- Simple linear regression, with GDP growth rate as the dependent variable and FDI inflow as the independent variable, to estimate the direction and statistical significance of the relationship.

All computations have been carried out using standard statistical procedures. The level of significance adopted for hypothesis testing is 5 per cent ($p < 0.05$).

Limitations of the Study

The study is based on macro-level annual time-series data covering ten observations, which limits the statistical power of the analysis and the ability to control for other determinants of growth such as domestic investment, exports, government expenditure, and global business-cycle conditions. The analysis captures contemporaneous association and does not, by itself, establish causation. The study also does not disaggregate FDI by sector or source country in the statistical analysis, although it discusses these dimensions descriptively.

5. DATA ANALYSIS AND INTERPRETATION

Table 1 presents the year-wise total FDI inflow into India (equity plus reinvested earnings and other capital) and the corresponding real GDP growth rate for the period 2014-15 to 2023-24.

Table 1: FDI Inflow and GDP Growth Rate in India (2014-15 to 2023-24)

Financial Year	Total FDI Inflow (US$ Million)	Real GDP Growth Rate (%)
2014-15	45,148	7.4
2015-16	55,559	8.0
2016-17	60,220	8.3
2017-18	60,974	6.8
2018-19	62,001	6.5
2019-20	74,391	3.9
2020-21	81,973	-5.8
2021-22	84,835	9.1
2022-23	71,355	7.0
2023-24	70,941	8.2

Source: Compiled by the author from DPIIT Fact Sheets on FDI, RBI Balance of Payments data, and MoSPI National Accounts Statistics (various issues).

Trend of FDI Inflows

The data indicate that total FDI inflows into India rose from US$ 45.1 billion in 2014-15 to a peak of US$ 84.8 billion in 2021-22, before moderating to US$ 71.4 billion in 2022-23 and US$ 70.9 billion in 2023-24. Over the full ten-year period, FDI inflows grew at a compound rate of approximately 4.6 per cent per annum, with the most rapid acceleration occurring between 2018-19 and 2021-22, a phase coinciding with the roll-out of the Production-Linked Incentive schemes and, somewhat counter-intuitively, with the pandemic years, when India continued to attract large investments in the digital and technology sectors even as global FDI flows contracted. The moderation in inflows after 2021-22 is broadly consistent with the tightening of global monetary conditions and increased risk aversion among international investors.

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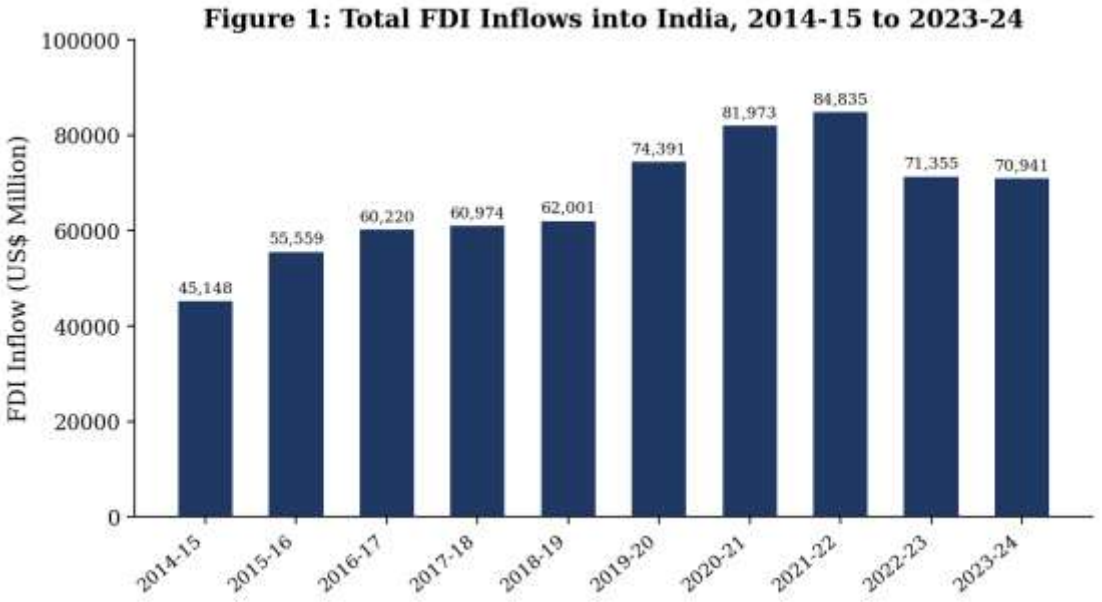

Figure 1: Total FDI Inflows into India, 2014-15 to 2023-24 (US$ Million). Source: DPIIT / RBI.

Trend of GDP Growth

India's real GDP growth rate remained in the range of 6.5 to 8.3 per cent during 2014-15 to 2018-19, before decelerating sharply to 3.9 per cent in 2019-20 amid domestic and global slowdown, and then contracting by 5.8 per cent in 2020-21 due to the COVID-19 pandemic and the associated nationwide lockdowns. The economy rebounded strongly, growing by 9.1 per cent in 2021-22 on a low base, and subsequently stabilised at 7.0 and 8.2 per cent in 2022-23 and 2023-24 respectively.

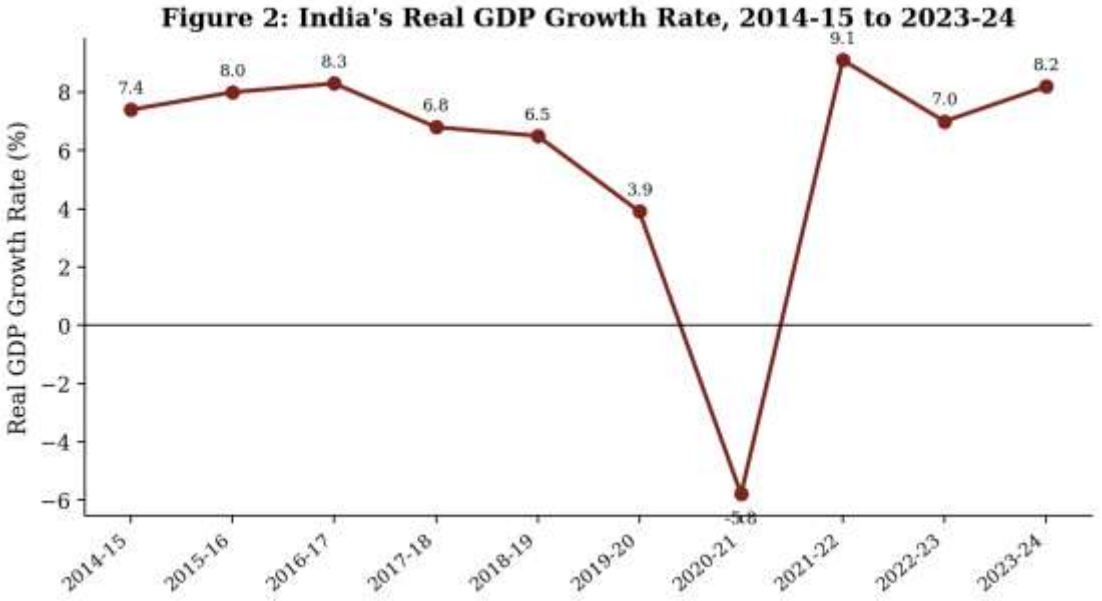

Figure 2: India's Real GDP Growth Rate, 2014-15 to 2023-24 (%). Source: MoSPI.

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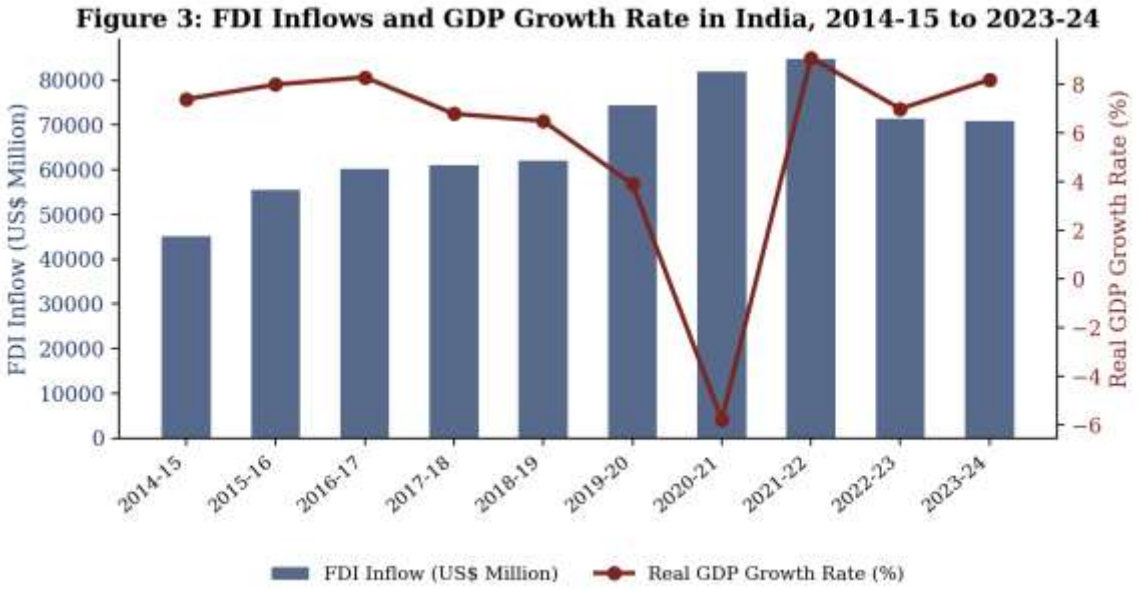

Figure 3: FDI Inflows and GDP Growth Rate in India, 2014-15 to 2023-24 (Combined View).

Correlation and Regression Analysis

The Pearson correlation coefficient between annual FDI inflows and the real GDP growth rate for the period 2014-15 to 2023-24 works out to r = -0.42 (p = 0.23), which is statistically insignificant at the 5 per cent level. When the pandemic-affected year 2020-21 is excluded as an outlier, the coefficient falls further, to r = -0.01 (p = 0.98), indicating virtually no linear association among the remaining nine years. A regression of GDP growth on FDI inflow (in US$ million) for the full ten-year period yields a coefficient of determination (R^2) of approximately 0.17, meaning that FDI inflow, on a simple contemporaneous basis, explains only about 17 per cent of the year-to-year variation in GDP growth, and the estimated slope coefficient is not statistically significant ($p > 0.05$).

A lagged specification, relating GDP growth in a given year to FDI inflow received in the preceding year, was also estimated and likewise yields a weak and statistically insignificant coefficient (r = -0.17, p = 0.65). These results should not be interpreted to mean that FDI has no bearing on India's growth process; rather, they indicate that a simple bivariate, contemporaneous or single-period-lagged linear relationship is not sufficient to capture the FDI-growth linkage in the Indian data for this decade. This is consistent with Chakraborty and Basu (2002) and with the broader literature reviewed above, which suggests that (a) GDP growth itself is a significant determinant of investor confidence and hence of FDI inflows, creating a two-way and potentially confounded relationship; (b) the growth effects of FDI, where they exist, are likely to be gradual and mediated by technology absorption, backward and forward linkages, and complementary domestic investment, rather than showing up within the same or the following financial year; and (c) the extraordinary GDP contraction in 2020-21, driven by an exogenous public-health shock rather than by investment conditions, considerably distorts a simple ten-year correlation.

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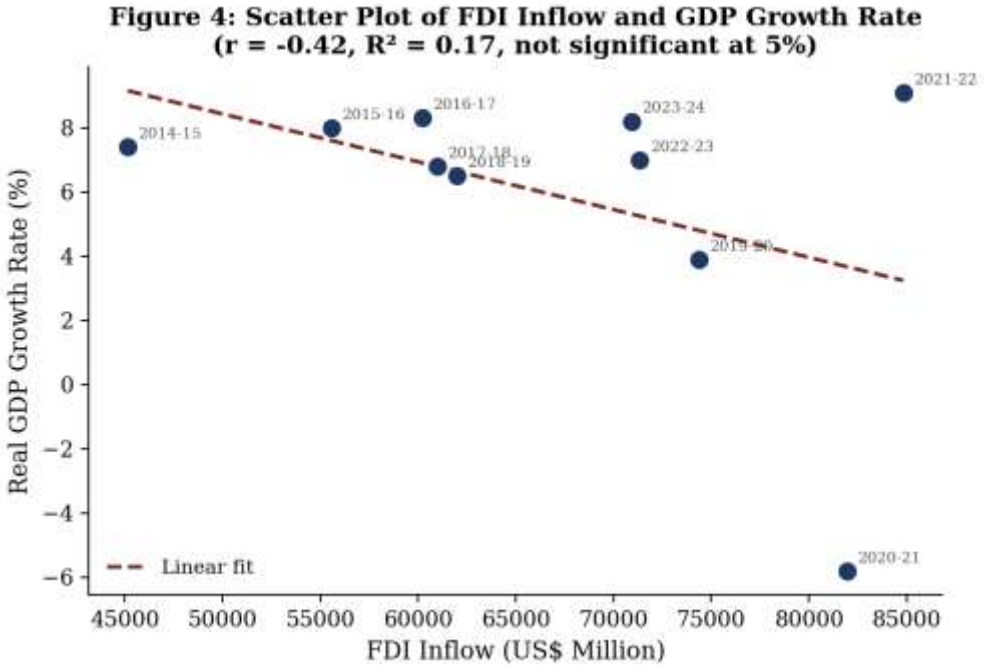

Figure 4: Scatter Plot of FDI Inflow and GDP Growth Rate with Linear Trend Line.

Sectoral and Source-Country Pattern

Descriptively, official DPIIT data show that over the last decade the services sector, computer software and hardware, trading, telecommunications, automobiles and construction have consistently attracted the largest shares of FDI equity inflows into India, while manufacturing, though growing, has continued to receive a comparatively smaller share of total inflows relative to its share of GDP and employment. Singapore, Mauritius, the United States, the Netherlands and the UAE have remained the leading source countries for FDI into India throughout the period. This sectoral concentration in services rather than manufacturing is a plausible contributing explanation for why the aggregate statistical relationship between FDI and GDP growth is weaker than might be expected, since manufacturing FDI is generally associated with stronger backward linkages, employment generation and technology diffusion than portfolio-like or trading-oriented services investment.

6. FINDINGS OF THE STUDY

- Total FDI inflows into India nearly doubled between 2014-15 and 2021-22, rising from about US$ 45 billion to about US$ 85 billion, before moderating in 2022-23 and 2023-24.
- India's real GDP growth was relatively stable in the range of 6.5-8.3 per cent between 2014-15 and 2018-19, decelerated sharply in 2019-20, contracted in the pandemic year 2020-21, and recovered strongly thereafter.
- The simple Pearson correlation between annual FDI inflows and GDP growth for 2014-15 to 2023-24 is weak and negative (r = -0.42) and not statistically significant at the 5 per cent level.
- Excluding the pandemic-distorted year 2020-21, the correlation coefficient falls to nearly zero (r = -0.01), indicating no meaningful linear association between FDI and growth on a year-to-year basis.
- A one-year lagged relationship between FDI and subsequent GDP growth is similarly weak and statistically insignificant, suggesting that a simple short-run causal linkage from FDI to growth is not strongly present in the aggregate Indian data for this decade.
- FDI inflows into India remain heavily concentrated in the services, software, trading and telecommunication sectors, with manufacturing receiving a comparatively smaller share despite policy emphasis under Make in India and the PLI scheme.
- Singapore, Mauritius, the United States, the Netherlands and the UAE together account for the bulk of FDI equity inflows into India, reflecting both genuine investment interest and the continued role of certain jurisdictions as investment routing hubs.
- The weak aggregate statistical association does not rule out a positive growth impact of FDI operating through longer-run channels such as technology transfer, productivity spillovers, and export competitiveness, which are not fully captured by a simple bivariate annual correlation.

7. CONCLUSION

This study set out to empirically examine the relationship between FDI inflows and economic growth in India over the decade 2014-15 to 2023-24, a period marked by significant policy liberalisation, the launch of major investment-promotion initiatives such as Make in India and the Production-Linked Incentive scheme, and the unprecedented disruption caused by the COVID-19 pandemic. While FDI inflows into India have grown substantially in absolute terms and India has consolidated its position as one of the leading recipients of foreign investment among emerging economies, the simple statistical analysis undertaken here finds only a weak and statistically insignificant contemporaneous association between annual FDI inflows and the real GDP growth rate.

This finding should be read as a caution against overly simplistic, single-equation interpretations of the FDI-growth nexus rather than as evidence that FDI is unimportant to the Indian economy. The literature reviewed suggests that the growth dividends of FDI are conditional on complementary factors, including the level of human capital and infrastructure, the trade policy regime, the sectoral composition of investment, and the time horizon considered. Given that a large share of FDI into India continues to flow into services and trading activities rather than manufacturing, and given the still-evolving nature of backward and forward production linkages, it is plausible that the full growth impact of FDI in India will materialise gradually and unevenly across sectors rather than showing up as a strong year-on-year statistical correlation.

For FDI to make a stronger and more measurable contribution to India's economic growth, policy efforts need to move beyond merely increasing the volume of inflows towards improving their quality and sectoral composition. In particular, continued emphasis on manufacturing-oriented FDI under the PLI scheme, sustained investment in physical and digital infrastructure, simplification of land and labour market regulations, strengthening of domestic human capital and R&D capacity, and deeper integration of foreign affiliates with domestic small and medium enterprises would help translate rising FDI inflows into more broad-based and durable economic growth. Future research with a longer time series, sector-disaggregated data, and more sophisticated econometric techniques such as vector autoregression or panel cointegration would help to further clarify the direction and lag structure of the FDI-growth relationship in India.

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