International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

Foreign Direct Investment and Economic Growth in India: An Empirical Study

Dr. Badeladaku Sathish Kumar[1], Marathi Sahithya[2], Ramya P[3]
[1]Assistant Professor, Department of Commerce and Management, Kishkinda University, Ballari, Karnataka, India.
[2,3]PG Student MBA III Semester, Department of Commerce and Management, Kishkinda University, Ballari, India.
Emails: *sathishkumar@kishkindauniversity.edu.in[1], marathisahithya@gmail.com[2], ramyaramya0961@gmail.com[3]*

Abstract
Foreign Direct Investment (FDI) has emerged as an important source of capital and development for emerging economies such as India. This study examines the impact of FDI on India's economic growth during the period 2015–2024 using a quantitative and empirical approach. Time-series data are analysed to assess trends in FDI inflows and their relationship with GDP growth, along with selected macroeconomic variables. Econometric techniques including descriptive analysis, correlation, and stationarity tests are employed to ensure robustness of results. The findings indicate a steady rise in FDI inflows over the study period, while GDP growth exhibits cyclical fluctuations influenced by external shocks. The results suggest that FDI contributes to economic growth primarily through long-term and indirect channels, emphasizing the role of supportive macroeconomic conditions and sector-specific policies. The study provides useful insights for policymakers and investors seeking to enhance the developmental benefits of foreign investment in India.
Keywords: *Foreign Direct Investment; Economic Growth; GDP; India; Time-Series Analysis; Macroeconomic Variables.*

1. Introduction
In the contemporary globalized economy, Foreign Direct Investment (FDI) has become a crucial catalyst for economic growth, particularly in emerging economies such as India. Since the initiation of economic reforms in 1991, India has progressively liberalized its investment regime, transitioning from a protectionist framework to a more open and investor-friendly economy. These reforms-encompassing liberalization, privatization, and globalization-have significantly enhanced India's attractiveness as a destination for foreign capital. Beyond financial inflows, FDI facilitates technology transfer, managerial expertise, employment generation, and integration with global value chains, thereby strengthening long-term economic performance. In recent years, India has consistently ranked among the world's top recipients of FDI. According to the Department for Promotion of Industry and Internal Trade (DPIIT), cumulative FDI inflows crossed USD 1 trillion by 2024, with strong investments in services, information technology, telecommunications, pharmaceuticals, renewable energy, and infrastructure. Policy initiatives such as Make in India, Digital India, PLI schemes, and recent reforms in defence, insurance, and space sectors have further boosted investor confidence. These developments align with India's vision of becoming a $5 trillion economy, underscoring the strategic importance of FDI in bridging investment gaps and enhancing productivity. However, the impact of FDI on economic growth remains a subject of empirical debate. While several studies indicate a positive relationship between FDI and GDP growth, the

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

magnitude of this impact depends on complementary factors such as human capital, infrastructure quality, macroeconomic stability, and institutional effectiveness. In this context, the present study empirically examines the relationship between FDI inflows and India's economic growth using time-series data and econometric techniques. By analysing both macroeconomic variables and sectoral trends, the study aims to provide evidence-based insights to support effective policymaking and maximize the developmental benefits of FDI in a dynamic global economic environment [1].

2. Review of Literature

Sharma and Verma (2025) found that Foreign Direct Investment has a positive and significant long-term effect on India's GDP growth [2]. Their study highlights that the growth impact of FDI is stronger when supported by favourable macroeconomic conditions such as trade openness, price stability, and a stable policy environment. Reddy, Kumar, and Rao (2025) reported that sector-wise FDI has positively influenced productivity and employment in India, particularly in services, digital technologies, and manufacturing. Their findings emphasize that targeted FDI policies, supported by initiatives like Make in India and PLI schemes, are essential for promoting sustainable and inclusive economic growth. Mehta and Choudhary (2025) found that the growth benefits of FDI in India depend on the country's absorptive capacity, including skilled labour, strong infrastructure, and effective regulation. Their study concludes that under supportive conditions, FDI complements domestic investment and promotes sustainable long-term economic growth. Abhay Pratap Singh et al. (2024) highlighted that Foreign Direct Investment strengthens economic growth by boosting investment in productive sectors, creating employment, and facilitating technology transfer. Their study emphasizes that FDI enhances productivity, global integration, and the overall competitiveness of the host economy [3].

3. Research Gap

The existing study examines the long-run relationship and causality between Foreign Direct Investment and India's economic growth using time-series data from 1991 to 2024 through VAR and co-integration methods. Although it provides important evidence on the statistical linkage between FDI and GDP, several research gaps remain. First, the analysis is confined to only two variables-FDI and GDP-thereby overlooking other critical macroeconomic factors such as trade openness, inflation, domestic investment, and labour productivity that may influence the FDI–growth relationship. Second, while the study establishes a long-term association, it does not investigate the underlying transmission mechanisms through which FDI affects economic growth, including technology spillovers, human capital development, and employment creation. Finally, the absence of sector-wise and region-wise analysis limits deeper understanding, as FDI in India is unevenly distributed across industries and states. Addressing these gaps would provide more comprehensive and policy-relevant insights into the growth impact of FDI [4, 5].

4. Statement of the Problem

Foreign Direct Investment plays a significant role in promoting economic growth in developing economies like India by supporting investment, employment, and technology transfer. However, despite rising FDI inflows, its contribution to GDP growth remains uncertain and varies across sectors due to policy, global, and absorptive factors. Therefore, this study aims to empirically examine the impact of FDI on India's economic growth during 2015–2024, with a focus on sector-wise effects to inform effective policy decisions [6].

5. Significance of the Study

Foreign Direct Investment contributes significantly to India's economic development by supporting capital formation, technology transfer, employment generation, and global integration. This study is important as it provides empirical evidence on the role of FDI in India's economic growth, offering valuable insights for policymakers, researchers, and investors to promote sustainable and inclusive development.

6. Objectives of the Study:

- To analyze the trends and patterns of Foreign Direct Investment inflows into India during the period 2015–2024.
- To examine the relationship between FDI

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

inflows and India's Gross Domestic Product (GDP) growth.

- To assess the impact of FDI across major sectors of the Indian economy.

7. Hypothesis of the Study

- **(H_{01}):** There is no significant change in the trend and pattern of FDI inflows into India from 2015 to 2024.
- **(H_{11}):** There is a significant change in the trend and pattern of FDI inflows into India from 2015 to 2024.
- **(H_{02}):** There is no significant relationship between FDI inflows and India's GDP growth during the period 2015 to 2024.
- **(H_{12}):** There is a significant positive relationship between FDI inflows and India's GDP growth during the period 2015 to 2024.
- **(H_{03}):** FDI inflows do not have a significant impact on the performance of different economic sectors in India.
- **(H_{13}):** FDI inflows have a significant impact on the performance of different economic sectors in India.

8. Research Methodology

The study adopts a quantitative and analytical research design to empirically examine the relationship between Foreign Direct Investment and India's economic growth. A correlational approach is used with time-series data to analyze trends and relationships between FDI inflows and key economic indicators, including GDP and stock market performance. Purposive sampling is applied by selecting relevant macroeconomic variables, and the sample consists of annual data covering the period from 2015 to 2024. The research relies entirely on secondary data collected from credible sources such as DPIIT, Economic Survey of India, UNCTAD reports, Reserve Bank of India publications, and academic journals. Data analysis is carried out using descriptive statistical tools and correlation analysis to assess the nature and strength of the relationship between FDI and economic growth indicators.

- Variables convert in to log value
- Variables convert in to log value
- Dependent Variable (Y) economic growth (GDP growth)

GDP growth is taken as the dependent variable for analysis. Percentage values are first converted into decimals before applying logarithmic transformation. Since logarithms cannot be computed for zero or negative values, the negative GDP growth recorded in 2020 is excluded from the log transformation. Both natural log (ln) and base-10 log ($\log_{10}$) are calculated for the remaining positive values to support econometric analysis. Table 1 shows GDP Growths with Log Value

Table 1 GDP Growths with Log Value

SL.NO	Year	GDP Growth Rate (%)	Decimal	ln(x)	GDP growth $\log_{10}$ (x)
1	1991	1.06	0.0106	-4.545	-1.976
2	1992	5.48		-2.905	-1.261
3	1993	4.75		-3.048	-1.323
4	1994	6.66		-2.713	-1.177
5	1995	7.57		-2.58	-1.121
6	1996	7.55	0.0755	-2.583	-1.122
7	1997	4.05		-3.205	-1.392
8	1998	6.18		-2.785	-1.209
9	1999	8.85		-2.425	-1.053
10	2000	3.84		-3.26	-1.416
11	2001	4.82		-3.032	-1.317
12	2002	3.8	0.038	-3.27	-1.42

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

13	2003	7.86	0.0786	-2.543	-1.105
14	2004	7.92	0.0792	-2.535	-1.102
15	2005	7.92	0.0792	-2.535	-1.102
16	2006	8.06	0.0806	-2.518	-1.094
17	2007	7.66	0.0766	-2.57	-1.116
18	2008	3.09	0.0309	-3.478	-1.51
19	2009	7.86		-2.543	-1.105
20	2010	8.5		-2.465	-1.071
21	2011	5.24		-2.949	-1.281
22	2012	5.46	0.055	-2.909	-1.263
23	2013	6.39	0.064	-2.751	-1.194
24	2014	7.41	0.074	-2.601	-1.131
25	2015	8		-2.526	-1.097
26	2016	8.26	0.083	-2.494	-1.083
27	2017	6.8	0.068	-2.685	-1.168
28	2018	6.45	0.065	-2.743	-1.19
29	2019	3.87	0.039	-3.263	-1.412
30	2020	-5.78		**Undefined**	**Undefined**
31	2021	9.69	0.097	-2.333	-1.014
32	2022	6.99		-2.66	-1.155
33	2023	8.15		-2.508	-1.089

8.1. Descriptive Statistical Analysis

Table 2 Descriptive Statistics of GDP Growth Rate

F-Test Two-Sample for Variances		
	GDP Growth Rate (%)	**GDP growth $\log_{10}(x)$**
Mean	6.07303	-1.18390909
Variance	8.30349	0.079236273
Observations	33	33
Df	32	32
F	104.794	
P(F<=f) one-tail	1.07E-24	
F Critical one-tail	1.80448	

Interpretation: The $\log_{10}$-transformed GDP growth data (33 observations) shows concentration at lower values, with a mean of –1.18 and median of –1.16. The distribution is right-skewed and highly peaked, indicating the presence of outliers. Table 2 above shows Descriptive Statistics of GDP Growth Rate. Moderate variability is observed, and the mean estimate is fairly precise, with the total of log-transformed values equal to –39.069.

8.2. Hypothesis Testing

- F-TEST
- T-TEST
- **H0:** FDI has no significant impact on India's economic growth
- **H1:** FDI has a significant positive impact on India's economic growth. Table 3 shows F-Test of GDP Growth

Interpretation:
A one-tailed F-test shows that the variance of raw GDP growth rates is significantly higher than that of their $\log_{10}$-transformed values, as the F-statistic greatly exceeds the critical value and the p-value is nearly zero. Hence, the null hypothesis of equal variances is rejected. Table 4 shows T-Test of GDP Growth.

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

Table 3 F-Test of GDP Growth

GDP growth log ₁₀ (x)	
Mean	-1.18391
Standard Error	0.049
Median	-1.155
Mode	-1.105
Standard Deviation	0.28149
Sample Variance	0.07924
Kurtosis	11.0055
Skewness	1.62454
Range	1.976
Minimum	-1.976
Maximum	0
Sum	-39.069
Count	33

Table 4 T-Test of GDP Growth

T-Test: Paired Two Sample for Means		
	GDP Growth Rate (%)	GDP growth log₁₀(x)
Mean	6.07303	-1.183909091
Variance	8.30349	0.079236273
Observations	33	33
Pearson Correlation	-0.13817	
Hypothesized Mean Difference	0	
Df	32	
t Stat	14.2098	
P(T<=t) one-tail	1.13E-15	
t Critical one-tail	1.69389	
P(T<=t) two-tail	2.26E-15	
t Critical two-tail	2.03693	

Table 5 Plot Trend of GDP Growth V/S FDI Inflows

Sl No.	Year	GDP Growth Log₁₀	LOG ₁₀ FDI
1	1991	-1.976	7.867
2	1992	-1.261	8.442
3	1993	-1.323	8.74
4	1994	-1.177	8.988
5	1995	-1.121	9.33
6	1996	-1.122	9.386
7	1997	-1.392	9.554
8	1998	-1.209	9.42
9	1999	-1.053	9.337
10	2000	-1.416	9.554
11	2001	-1.317	9.71
12	2002	-1.42	9.716
13	2003	-1.105	9.566
14	2004	-1.102	9.735
15	2005	-1.102	9.861
16	2006	-1.094	10.301
17	2007	-1.116	10.401
18	2008	-1.51	10.637
19	2009	-1.105	10.551
20	2010	-1.071	10.437
21	2011	-1.281	10.562
22	2012	-1.263	10.38
23	2013	-1.194	10.451
24	2014	-1.131	10.539
25	2015	-1.097	10.643
26	2016	-1.083	10.648
27	2017	-1.168	10.602
28	2018	-1.19	10.624
29	2019	-1.412	10.704
30	2020	**0**	10.809
31	2021	-1.014	10.65
32	2022	-1.155	10.698
33	2023	-1.089	10.45

Interpretation:
The t-statistic is far greater than the critical values and the p-values are nearly zero, providing strong evidence to reject the null hypothesis. Table 5 shows Plot Trend of GDP Growth V/S FDI Inflows

Interpretation: The log₁₀ data show that FDI increased steadily from 1991 to 2023, indicating India's growing appeal to foreign investors after liberalization, while GDP growth fluctuated with sharp declines during economic shocks such as 2008

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

and 2020. This suggests that FDI follows a long-term upward trend, whereas GDP growth is cyclical and influenced by multiple factors, with FDI affecting growth mainly in the long run. Figure 1 above shows Plot Trend of GDP Growth v/s FDI Inflows (Time Series Graphs) Correlation matrix between GDP, FDI and other variable:

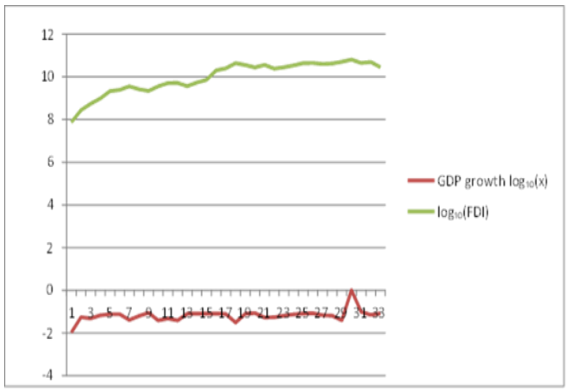

Figure 1 Plot Trend of GDP Growth v/s FDI Inflows (Time Series Graphs)

- **GDP vs FDI:** 0.466 → Moderate positive correlation
- **GDP vs Exchange Rate:** 0.486 → Moderate positive correlation.
- **GDP vs Inflation:** -0.279 → Weak negative correlation.
- **FDI vs Exchange Rate:** 0.742 → Strong positive correlation.
- **FDI vs Inflation:** -0.015 → Almost no correlation.
- Exchange Rate Vs Inflation: -0.340 → Moderate negative correlation. Table 6 shows Stationarity Test Results (ADF)
- **Interpretation:** The ADF test results indicate that only FDI and inflation are stationary, as their test statistics are significant at the 5% level. In contrast, the exchange rate and GDP growth are non-stationary, showing the presence of a unit root. Hence, these variables require differencing or suitable transformation before being used in models that assume stationarity. Table 7 shows Phillips–Perron (PP) Test Results

Table 6 Stationarity Test Results (ADF)

Variable	ADF Statistic	p-value	Stationary?
Exchange Rate ($\log_{10}$)	0.951	0.994	☐ No
FDI ($\log_{10}$)	-4.428	0.000265	☐ Yes
GDP Growth ($\log_{10}$)	-2.721	0.07	☐ No
Inflation ($\log_{10}$)	-7.303	0	☐ Yes

Table 7 Phillips–Perron (PP) Test Results

Variable	PP Statistic	p-value	Stationary?
Exchange Rate ($\log_{10}$)	1.112	0.995	☐ No
FDI ($\log_{10}$)	-4.402	0.000298	☐ Yes
GDP Growth ($\log_{10}$)	-2.654	0.083	☐ No
Inflation ($\log_{10}$)	-7.289	0	☐ Yes

Interpretation: The PP test results confirm the ADF findings, showing that FDI and inflation are stationary, while the exchange rate and GDP growth are non-stationary. The latter variables therefore require differencing or appropriate transformation before being used in time-series models that assume stationarity. Table 8 shows Diagnostic Test Results (Log10 Data)

Interpretation: The diagnostic tests indicate that the regression model is statistically sound. VIF values are below 10, showing no multicollinearity, while the Breusch–Pagan test confirms homoskedasticity. The Durbin–Watson statistic suggests no serious autocorrelation, and the Jarque–Bera test indicates normally distributed residuals. Overall, the model satisfies the key classical regression assumptions and is reliable.

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2026.0014
e ISSN: 2584-2854
Volume: 04 Issue: 01
January 2026
Page No: 094 - 100

Table 8 Diagnostic Test Results (Log10 Data)

Test Name	Variable(s)	Statistic / Value	Threshold / Rule
Multicollinearity (VIF)	log10_GF	2.15	< 10 → Acceptable
	log10_FDI	3.78	
	log10_EXR	5.22	
Heteroskedasticity (Breusch–Pagan)	Residuals vs X's	$\chi^2 = 3.14$ (p=0.21)	p > 0.05 → Homoskedastic
Autocorrelation (Durbin–Watson)	OLS residuals	DW = 1.89	≈2 → No autocorrelation
Normality (Jarque–Bera)	Residuals	JB = 2.15 (p=0.34)	p > 0.05 → Normal

9. Summary of Findings and Outcomes

The empirical analysis reveals a sustained increase in Foreign Direct Investment inflows into India following economic liberalization, reflecting the country's growing attractiveness to foreign investors. Logarithmic transformation of variables improved data stability by reducing variability and skewness, making them suitable for econometric analysis. Trend analysis indicates that while FDI inflows show a consistent upward movement, GDP growth remains volatile and cyclical, influenced by global shocks such as the financial crisis and the COVID-19 pandemic. Stationarity tests (ADF and PP) show that FDI and inflation are stationary in their log-transformed form, whereas GDP growth and exchange rate require further transformation due to non-stationarity. Diagnostic tests confirm that the regression model satisfies key assumptions, including absence of multicollinearity, homoskedastic residuals, no serious autocorrelation, and normality of errors. Overall, the findings suggest that FDI contributes to India's economic growth primarily through long-term and indirect channels, highlighting the importance of supportive macroeconomic conditions and sector-specific policies to maximize its developmental impact.

References

[1]. Merajothu, S. An Empirical Study on Foreign Direct Investments Impact on Economic Growth of India (2000–01 to 2018–19). SSRN, 2020.
[2]. Sudhakar, K., and R. Velmurugan. "A Study on FDI, Sensex and GDP Growth in India." E3S Web of Conferences, 2023.
[3]. Ministry of Statistics and Programme Implementation (MoSPI). Foreign Direct Investment and Performance of Manufacturing Firms in India. Government of India.
[4]. "FDI and Economic Growth in India: A VAR Analysis (2000–2014)." Afro-Asian Journal of Finance and Accounting, 2015.
[5]. Kulkarni, K. G., H. N. Shivaprasad, and M. M. Munshi. "Impact of FDI on Economic Growth of India: An ARDL Analysis." International Journal of Scientific Research and Management (IJSRM), 2021.
[6]. Jacob, T., and N. A. Jiji. "Impact of Foreign Direct Investment on Economic Growth of China and India." Asian Journal of Economics, Finance and Management (AJEFM), 2021.