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An Empirical Analysis of the effect of Foreign Direct Investment (FDI) on India's Economic Growth (GDP)

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Abstract
Inflows of foreign direct investment (FDI) are frequently viewed as a primary engine of economic growth in emerging nations. This analysis uses time series data from 2000 to 2022 to look into how FDI has affected India's economic growth. In order to determine the country-specific FDI inflows of such investments in the nation, this article will examine the trends of FDI inflows in India. The secondary data used in this study was compiled from a wide range of reliable sources. The data was analyzed using a correlation matrix and simple linear regression methods. The study's conclusions show that FDI significantly and favorably affects India's economic growth.
Key Words: *Impact, FDI, Economic Growth, GDP.*

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1. INTRODUCTION

According to Okada and Samreth (2014), initiatives to increase foreign direct investment foster the transfer of technology to increase productivity, which in turn fosters economic growth in the host country. Thus, as foreign businesses grow and establish operations in the host countries, high-tech management and production advance. When domestic reserves are not enough to support economic growth, foreign direct investment becomes crucial (Ali and Hussain, 2017). Foreign direct investment (FDI), despite the developing countries' shares in the global distribution of FDI remaining small or even declining, has developed into a significant component of capital formation in these countries over the years and has established itself as the most significant source of external resource flows to these countries (Falki, 2009).

It is generally acknowledged that foreign direct investment positively impacts economic growth in underdeveloped countries. (Falki, 2009). FDI, one of the most well-known investment routes in the world, helps countries build their economies.(Younus, Sohail, and Azeem, 2014). Foreign direct investment (FDI) is perceived as an instrument for transferring money and technology to developing nations, particularly from established nations (Melnyk, Kubatko, and Pysarenko, 2014). Offering special benefits to entice FDI is frequently justified economically on the grounds that it will result in technology transfers and other positive effects. (Carkovic and Levine, 2002).

The Indian government has taken numerous steps in recent years to increase FDI inflows in the hopes that doing so will result in cutting-edge technology, boost output, and foster export-driven economic development. In fact, since 1991, India has implemented economic changes. Since a few years ago, India has actively embraced FDI activity; FDI inflows are viewed as a means of promoting economic growth and development as well as aiding in the transformation process, which includes the country's ongoing business liberalization initiatives as well as economic reforms (Freeman, 2002).

2. REVIEW OF THE ACADEMIC WORKS ESTABLISHING THE RELATIONSHIP BETWEEN FDI AND ECONOMIC GROWTH

Table 1: Impact of FDI on GDP: A Theoretical Analysis

Author(s)	Factor/Driver	Explanation
OECD(1991)	Technology Transfer	A survey of both developing and OECD countries confirmed the link between technology and economic progress. Unquestionably, FDI may affect development by being technically effective.
Borensztein et al. (1998)	Human Capital	The findings of Borensztein et al. (1998) demonstrate that FDI and human capital have a sizable synergistic impact on host nation economic growth. According to Borensztein, for FDI to have an impact on economic development, there must be infrastructure and workers with a certain degree of skill.
Pessoa (2007)	Domestic Investment	The competition sparked by FDI greatly aids in the enhancement of the capital creation and output

		components in the economy. In fact, when more multinationals enter the market, there is more rivalry, which forces local businesses to adapt if they want to keep their market share. As a result, prices decline, productivity rises, and resources are used more effectively.
Dritakis (2014)	Foreign Trade	According to Dritakis (2014), FDI boosts the host country's export capacity and increases foreign exchange earnings, especially in emerging nations. They also enhance the national investments, supporting economic expansion overall and encouraging the creation of new employment and technological transfer.

3. Objectives

(i) To analyse the patterns and trends in India's overall FDI inflows between 2000 and 2022.
(ii) To determine the country-by-country FDI inflows into India for the time range spanning the years 2000–2022.
(iii) To assess the cause and impact of FDI on India's GDP from 2000–01 to 2021–22, using a simple linear regression model that takes into account ordinary least squares assumptions like serial correlation and residual normality.

4. Methodology

The impact of FDI on India's GDP per capita from 2000–2001 to 2021–2022 was investigated in this study using secondary data. Secondary data sources include the Reserve Bank of India's Annual Reports, UNCTAD, and several journals, newspapers, Department for Promotion of Industry and Internal Trade and websites. Hypotheses in the study were examined using simple linear regression, which addressed the concerns of ordinary least square assumptions.

5. Model specification

In order to analyse the relationship between economic growth and FDI, we generated a linear regression model with the following structure.

$GDPPC = C + \beta_1 FDI + e$

Where,

C is the Constant term,

e is the error term,

β_1 is the Regression Coefficients,

GDPPC is Gross Domestic Product Per Capita

FDI is Foreign Direct Investment

6. Hypothesis

H0: There is no significant relationship between Foreign Direct Investment (FDI) and Gross Domestic Product Per Capita (GDPPC).

H1: There is a significant relationship between Foreign Direct Investment (FDI) and Gross Domestic Product Per Capita (GDPPC).

7. Analysis and discussion

Table 2: FDI inflows in India and GDP per Capita

Year	FDI in USD Millions	% Growth of FDI	GDP per Capita in USD Millions	% Annual Growth of GDP per Capita
2001-02	4,065	(+) 65 %	450	1.78%
2002-03	2,705	(-) 33 %	469	4.21%
2003-04	2,188	(-) 19 %	544	16.00%
2004-05	3,219	(+) 47 %	624	14.76%
2005-06	5,540	(+) 72 %	711	13.84%
2006-07	12,492	(+) 125 %	802	12.88%
2007-08	24,575	(+) 97 %	1023	27.52%
2008-09	31,396	(+) 28 %	994	-2.86%
2009-10	25,834	(-) 18 %	1097	10.38%
2010-11	21,383	(-) 17 %	1351	23.16%
2011-12	35,121	(+) 64 %	1450	7.33%
2012-13	22,423	(-) 36 %	1434	-1.08%
2013-14	24,299	(+) 8%	1438	0.28%
2014-15	29,737	(+) 22%	1560	8.47%
2015-16	40,001	(+) 35%	1590	1.94%
2016-17	43,478	(+) 9%	1714	7.80%
2017-18	44,857	(+) 3%	1958	14.22%
2018-19	44,366	(-) 1%	1974	0.84%
2019–20	49,977	(+) 13%	2047	3.69%
2020-21	59,636	(+) 19%	1910	-6.68%
2021-22	58,773	(-) 1%	2257	18.12%

Source: World Bank, FDI Statistic, 2022

Table 3: Descriptive Statistics

	Mean	Std. Deviation	N
GDPPC	1265.4091	580.48860	22
FDI	26751.2727	18762.33159	22

Source: Author's Calculation

Table 3, reveals that the GDPCC mean is 126.4091 and the SD is 580.48860, the mean and SD of FDI is observed as 26751.2727 and 18762.33159 respectively.

7.1 Regression Analysis

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949a	0.900	0.895	188.01205

a. Predictors: (Constant), FDI

b. Dependent Variable: GDPPC

Foreign Direct Investment (FDI), which is our independent variable, has an R-square value of 0.900, as shown in Table No. 4 causes 90% change in the dependent variable i.e., Gross Domestic Product per capita(GDPPC).

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6369336.684	1	6369336.684	180.187	.000b
	Residual	706970.634	20	35348.532		
	Total	7076307.318	21			

a. Dependent Variable: GDPPC

b. Predictors: (Constant), FDI

The analysis of variance (ANOVA) findings in table no. 5 reveal that the p-value is 0.000, which is less than 0.05, indicating that there is a significant link between FDI, and GDPPC.

Table 6: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	480.182	70.913		6.771	0.000	332.260	628.104
FDI	0.029	0.002	0.949	13.423	0.000	0.025	0.034

a. Dependent Variable: GDPPC

The beta value is 0.949, which suggests that a one-unit change in the independent variable, FDI, will result in a 0.949-unit change in the dependent variable, GDPCC. Furthermore, the beta value is positive, indicating that FDI and GDPPC have a positive association. In other words, if FDI grows by one unit, GDPPC increases by 0.949 units.

8. Conclusion and Recommendations

FDI and GDP have a significant and positive relation. We deduce that at a 5% level of significance, there is a linear connection between "FDI inflows" and "GDP per Capita" based on the study. A method for transferring technology and know-how to developing nations, including India, looks to be FDI. India would become more deeply integrated into the global economy as a result of FDI. Therefore, the government should be aware of the beneficial effects of FDI and take proactive measures to support it while taking certain precautions, but it should also be aware of its limitations. Government should exercise extreme caution when establishing a structure for policy so that our economy can make use of all available aid from a variety of sources for its expansion and development. Before allowing FDI in any certain sector government should focus on its limits as done earlier along with its long term effects on the economy.

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