

Impact of Macroeconomic Determinants on Economic Growth in India: An Empirical Assessment

Prasenjit Makur

Research Scholar, Department of Commerce, The University of Burdwan, Burdwan, W.B., India Assistant Professor,
Department of Commerce, Calcutta Girls' College, 3, Goaltuli Lane, Kolkata-13, W.B., India

Corresponding Author: prasenjitmakur06@gmail.com

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ABSTRACT

The impact of macroeconomic determinants on Indian economic growth measured by GVA is the foundation of this study. There are some factors that affect foreign direct investments. It consists of the country's political stability, trade openness, inflation rate, economic stability, investment policies, rules and regulations imposed on exchange rates, and foreign reserves. Additionally, foreign direct investments both increase trade and provide financial aid. Foreign direct investments have helped the Indian economy's balance of payment issues. This paper's main goal is to examine how macroeconomic factors affect the expansion of the Indian economy. FDI Inflows (FDI), Consumer Price Index (Inflation Rate), Foreign Exchange Rate with US\$, and Gross Value Added (GVA) are used as the study's variables. The influence of the study's variable on the Indian economy is examined using simple regression and Pearson's correlation approaches. The study is based on secondary data gathered from 2005 to 2020 via the World Bank website and RBI DBIE database. According to the empirical findings, there is a strong correlation between GVA and Exchange Rate with US\$ and CPI, whereas the moderate correlation between FDI and GVA exists which is important for the expansion of the Indian economy.

Keywords: investment, growth, inflation, development, exchange rate, regression

I. INTRODUCTION

The most preferred method of bringing capital into any economy is through foreign direct investment (FDI), often known as non-debt financial capital. The expansion of output of goods and services over time is referred to as economic growth. Real gross domestic product growth % is used to estimate GDP. The growth between first and last over time is what is meant by the economic growth rate. FDI often contribute significantly to the expansion of overall capital formation in the Indian economy. Additionally, it is a crucial instrument for converting knowledge and technology. Foreign direct investments (FDIs) primarily contribute to sustainable economic growth through positive externalities that result in returns in production, Mengistu, B., & Adams, S. (2007). This applies to the majority of developing nations, nevertheless. The most alluring and frequent location for foreign direct investments is considered to be India. By August 2020, Indian foreign direct investments had increased to 17800 USD million. The foreign direct investments are determined by specific factors. Shortage of wages and labour, accessibility of raw materials, communications infrastructure, and FDI rules are among them. Most investors seek to South Asian nations like India for labour at low wages. Because of this, many foreign direct investors are seduced by cheap pay labour. The ability of workers to communicate with one another is another important factor in enticing FDIs. Since there are more educated skilled workers in India, more foreign investors are drawn to the country. Additionally, cheap raw materials and resources attract additional FDIs. However, easier and more flexible foreign direct investment policies attract more FDIs. Recently, Byju's contributed USD 500 and Cashaa invested USD 5 million for the growth of the cryptocurrency sector. Furthermore, the Government of Singapore provided USD 63.84 million for Phoenix Mills' development, and Coralogix contributed USD 30 million.

Economic growth is greatly accelerated by foreign direct investments. New technological advancements brought about by FDIs can be used to expand industrial capacity. Additionally, FDIs provide the economy with greater capital. FDIs help economies adopt new marketing techniques while reducing balance of payments issues. Additionally, FDI creates job possibilities, which fuels the expansion of economic growth. Additionally, FDIs cause the regular wage rate of employees to increase as well. Additionally, FDI supports the exports of the developing nations that receive investment.

The Indian government has taken some fresh actions to increase foreign direct investment in a number of industries. In August 2020, the Indian government changed its foreign direct investment policy to focus on industrial coal mining. Additionally, it authorises 100 Foreign Direct Investments in coal mining operations in 2019. However, the Indian government has increased foreign direct investment in the production of weapons. From 49 to 74 percent, they have increased the percentage. Additionally, the Indian government changed its foreign direct investment policy about taking over other nations. However, non-residents of India are permitted to purchase a 100% interest in Air India.

II. REVIEW OF LITERATURE

Gregorio and Lee (1998) investigated the impact of foreign direct investments on economic growth and found that FDI, which contributes comparatively more to growth than domestic investment, is a key route for the transfer of technology. The greater productivity of FDI was only valid, though, if the host nation possesses a minimum level of human capital. Therefore, FDI only helps to economic growth when the host economy has a sufficient ability to absorb the new technologies.

Using data gathered from four OECD nations (Denmark, Finland, Norway, and Sweden), Erricson, and Irandoust (2001) investigated the causal link between growth and investment. For Denmark and Finland, however, there was no correlation between growth and the patterns and makeup of FDI inflows.

Between 1974 and 1996, Chakraborty, and Basu (2002) looked at the direction of causality between FDI and GDP for India. He demonstrated in his study that FDI promotes GDP rather than the other way around.

Further, Basu, et.al. (2003) had demonstrated that for 23 developing nations from the year (1978 to 1996) that there is a co-integration relationship between Foreign Direct Investment and Gross Domestic Product.

In terms of the direction of the causal association between foreign direct investment and economic growth, Chowdhury and Mavrotas' (2005) findings were that in the case of Chile, GDP causes FDI rather than the other way around, while there was significant evidence of a causal relationship between the two variables in both Malaysia and Thailand.

Additionally, Agarwal, P. (2005) asserts that there is a strong association between the permission of foreign direct investment and the actual inflow of capital.

Lean, H. H. (2008) empirical results pointed to independence between FDI and manufacturing sector growth. Given that FDI can only lead to growth if the host nation has a well-established, adequately skilled labor force, the government must pay close attention to the specific ways in which FDI can interact with human capital in order to have a significant positive impact on the future development of Malaysia's manufacturing sector.

Jayachandran, G., & Seilan, A. (2010) showed that, FDI and exports are one of the elements influencing economic growth in India, but their presence does not change depending on whether economic growth is high or low.

Malhotra (2014) examined how FDI had affected the Indian economy. Particularly following two decades of economic changes, an analysis of the difficulties in securing a favourable position in the global competitiveness of foreign direct investments is also provided.

Foreign Direct Investment (FDI) directly influences economic growth through supporting fixed capital formation and indirectly supporting knowledge stocks, according to Silajdzic and Mehic's (2015) research. Furthermore, according to the conventional view, FDI has a direct impact on economic expansion. Even if FDI is having an impact on economic growth, it will also have an impact on the lack of domestic investment and investment shortages. The study also demonstrates that foreign direct investments contribute favourably to economic expansion.

Mishra & Kumar, (2016) investigated that since FDI is an essential avenue for knowledge transfer and financing, it is seen as a major factor in advancing the economic development of emerging nations. Additionally, multinational corporations (MNCs) view FDI as a crucial tool for reorganizing cross-border manufacturing activities in accordance with their corporate objectives and the competitive advantage of host nations.

Further research by Alvara, et.al. (2017) revealed that FDI has a favourable influence on the product, particularly in high income countries, but that the effect is unequal and insignificant in upper-middle income countries.

Verma & Saluja (2018) investigated that foreign investment not only stimulates the flow of technology into the country and helps the sector become more competitive, it also helps generate economic activity and employment.

Singh, (2019) highlighted that according to the Planning Commission, FDI is typically chosen over other forms of external funding since it does not generate debt, is stable, and depends on the performance of the projects it funds.

In a (2019) study, Sultana, et.al. examined the effects of FDI on the population and the human development index in addition to Indian growth indicators. According to the study's findings, FDI has a large impact on the HDI, population, Sensex index, as well as some impact on imports and exports.

Fonseka, T. N. M. and Singh R. (2020) demonstrated that foreign direct investments in India had a considerable impact on gross domestic product. It has been demonstrated through a straightforward regression analysis that changes in foreign direct investments account for roughly 90% of variations in the gross domestic product. Additionally, the correlation research has demonstrated a favourable association between foreign direct investments and gross domestic product.

According to Nepal, et.al.(2021), FDI adoption of energy-efficient technologies is crucial for lowering carbon emissions in India. By offering incentives to investors, the Indian government should also encourage FDI entry into the renewable energy sectors in order to simultaneously produce good macroeconomic results and assure sustainable economic development. These are crucial policy lessons for other developing and emerging economies on a global scale.

Gupta,et.al. (2022) the study showed that absorptive capacities, such as financial development, institutional quality, technological aptitude, and trade openness, have an indirect impact on the relationship between FDI and economic growth.

Research Gap

The aforementioned research demonstrates that several academics have previously looked at this problem of the relationship between FDI and GDP in the context of various emerging or established countries. This study fills this gap by attempting to further explore the reasons for such a strong/weak/no link with the aid of fitting a Regression Model that includes both macroeconomic variables influencing economic growth.

III. OBJECTIVE OF THE STUDY

The main objectives of the study are:

- To evaluate the current status of FDI Inflows and economic growth in India.
- To investigate the association between FDI Inflows and economic growth appraised by GDP during the study period 2005-06 to 2019-20
- To find out the impact of FDI Inflows on economic growth in India during the study period.

IV. RESEARCH METHODOLOGY

Research Design

The study on the Impact of FDI Inflows on Economic Growth in India was conducted using quantitative analysis. The correlation matrix and multiple regression analysis techniques were used to analyse the collected data. The secondary data obtained from the World Development Indicators (WDI) database, World Bank and RBI Annual Data were used to assess the impact of FDI Inflows on economic growth in India. The study analysed 15 years data started from 2005-06 to 2019-20 for the independent variables include Foreign Direct Investment Inflows (FDI Inflows) , Inflation Rate (CPI) and Foreign Exchange Rate(FXCR, with US \$).

Model Specification

To test the relationship between economic growth and FDI Inflows, Inflation Rate (CPI) and Foreign Exchange Rate, it was estimated a linear regression model of the following form using SPSS tools with Ordinary Least Square (OLS) estimator.

$$GDP = C + (\beta_1 FDI) + (\beta_2 CPI) + (\beta_3 FXCR) + e$$

Where:

C= Constant Term	e = Error term
$\beta_1 \dots \beta_3$ = Regression Coefficient	GDP= Gross Domestic Product (Dependent Variable)
FDI = Foreign Direct Investment Inflows	CPI = Consumer Price Index (Inflation Rate)
FXCR = Foreign Exchange Rate with US \$.	

V. DATA ANALYSIS AND INTERPRETATION

Table 1: Descriptive Statistics

Variables	Min. Value	Max .Value	Mean	Std. Deviation
GDP	940.26	2870.50	1944.29	604.31
FDI	20.03	74.39	38.30	13.42
CPI	353.00	980.00	665.53	212.29
FXCR	40.24	74.13	55.50	11.04

Source: Author's Calculation based on DBIE Database, RBI

Table 1 indicates the descriptive statistics of studied variables under the study period. The minimum value GDP was US\$ 940.26 Billion in 2005-06 while the maximum value of GDP was calculated as US\$ 2870.50 Billion in 2018-19. Moreover, the mean of GDP and Standard deviation were US\$ 1944.29 Billion and US\$ 604.31 Billion respectively during the period under study. On the other hand, mean of FDI was US\$ 38.30 Billion, the standard deviation was US\$ 13.42 Billion, the minimum value was US\$ 20.03 Billion and maximum value was US\$ 74.39 Billion during the study period.

Table 2: Correlation Matrix

Variables	GDP	FDI	CPI	FXCR
GDP	1.000	.674**	.975**	.897**
FDI	.674**	1.000	.696**	.687**
CPI	.975**	.696**	1.000	.939
FXCR	.897**	.687**	.939	1.000

Source: Author's Calculation based on DBIE Database, RBI

** Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix on Table 2 shows that FDI and others studied variables were positively correlated to each other. According to the empirical findings, there is a strong correlation between GVA and Exchange Rate with US\$ and CPI, whereas the moderate correlation between FDI and GVA exists which is important for the expansion of the Indian economy.

VI. MULTIPLE REGRESSION ANALYSIS

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.977 ^a	.955	.942	.08102	1.596

a. Predictors: (Constant), Exchange Rate, FDI Inflows, Inflation Rate

b. Dependent Variable: GDP

Source: Author's Calculation based on DBIE Database, RBI

The three independent variables consist of Exchange Rate(FXCR), FDI inflows and Inflation Rate(CPI) that were studied indicate 94.20% of the variations in economic growth(GDP) in India as represented by Adj. R Square . It means that other factors not included in study can explain 5.80% of the variance in the depended variable under the study period. The DW value 1.596(> 1.5but 1 < 2.5) indicate there was no autocorrelation in the regression.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.523	3	.508	77.337	.000 ^b
	Residual	.072	11	.007		
	Total	1.595	14			

a. Dependent Variable: GDP

b. Predictors: (Constant), Exchange Rate, FDI Inflows, Inflation Rate

Source: Author's Calculation based on DBIE Database, RBI

The result showed that the significance value was less than 0.05, so the model was statistically considerable to estimate how FDI, Inflation Rate(CPI) and Exchange Rate(FXCR) affect the GDP of India under the study period. The F calculated value is greater than the F critical value which shows that the overall model was significant.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	1.518	.446		3.405	.006
	FDI Inflows	.001	.091	.001	.012	.991
	Inflation Rate	1.107	.187	1.132	5.921	.000
	Exchange Rate	-.285	.321	-.168	-.887	.394

a. Dependent Variable: GDP

Source: Author's Calculation based on DBIE Database, RBI

From the regression, the result revealed that a unit increase in FDI Inflows would leads to .001 rises in GDP; a unit increase in Inflation Rate (CPI) will result in 1.107 increases in GDP, whereas a unit increase in Exchange Rate (FXCR) will lead to 0.285 fall in GDP. At 5% level of significance FDI Inflows and Exchange Rate (FXCR) showed insignificance to GDP whereas Inflation Rate (CPI) had a 0.000 level of significance to GDP.

VII. CONCLUSION AND RECOMMENDATIONS

The overall empirical result shows that there was a positive relationship between economic growth and others considered independent variables contrary to the belief of authorities in a change of growth and development. This positive relationship could be a result of sufficient FDI Inflows into the Indian economy which has been able to exert enough impact to make it growth-enhancing. FDI inflows were believed to transfer technology, promote learning by doing, train labor, and in general, result in spillover of human skill and technology.

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