

Analyzing the Influence of FDI in Food Processing Industry of India on Domestic Investment Through DOLS

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Abstract

Foreign direct investment is considered the primary substitute source of finance for business firms. The level of foreign investment serves as a key indicator of a country's growth potential. The Food processing industry is an unexplored sector that has huge potential to navigate the economic growth of India. The Food processing industry is expected to contribute

approx 20% to India's GDP by 2030. Through extensive literature review, it has been found that no study investigates the impact of FDI in the food processing industry of India on domestic investment in the food processing industry. This study establishes a connection between Foreign Direct Investment in the food processing industry and domestic investment in the food processing industry of India. To analyze the time series data from 2003 to 2023, co-integration and DOLS methods have been employed.

1. Introduction

A key variable in stimulating economic development and stability is foreign investment. Many nations have aggressively lowered barriers that draw foreign investment in the last few decades to increase tax receipts, create jobs, and absorb important knowledge from foreign businesses (Kenh and Wei, 2023). In other words, it can be trusted that the development of economic growth is a result of the inflow of FDI (Karahan and Colak, 2022).

Economic development, local investment, and trade openness are the main variables that influence foreign direct investment (FDI) (Romdhane and et al, 2022). India is a developing nation major chunk of the population directly or indirectly dependent on agriculture and allied activities. While foreign direct investment in enterprises related to agriculture contributes to approx 1.7% of total inflows, the agricultural sector accounts for around 18% of India's GDP overall.

Domestic investment is considered as the most significant source of capital for economic growth (**Lean and Tan, 2011**),

whereas the FDI impact on economic growth is volatile. Domestic investment is equally important for job creation alongside economic development. Some of the studies (**Dusa, 2007 and Pradhan, 2009**) have argued that the role of FDI in economic growth is inconsistent. A large amount of studies have favored FDI's crucial role in economic development and promotion of domestic investment as well.

Recent years have witnessed an increase in foreign investment in India's food processing industry by 8 times from 2011 to 2022.

The contribution of the food processing industry to the GDP of India has increased at an average rate of 9.97% p.a. from 2014-15 to 2020-21, as a result, the food processing sector contributes 8% of India's GDP. With accelerated foreign investment and continuous increase in GDP contribution food processing sector is proving its vital role in the overall growth of India. The goal of the food processing industry is to raise its present 8% GDP contribution to 20% within the next five to ten years (ToI, 2023).

To fuel the growth potential of the food processing industry, relying on foreign investment is not enough, contribution of domestic investment is equally essential. In this study bank credit has been used as a proxy to domestic investment. In the last two decades, bank credit to the food processing industry has increased 20 times, from Rs. 86 billion in 2003 to Rs. 1828.78 billion in 2023.

In this study, we are trying to look into the effect of foreign investment in the food processing industry on the economic growth of India. This research comprises five sections. Section 2 is a brief review of the

literature. Section 3 is the methodological approach, model specification, and data sources. Section 4 is the analysis of data and section 5 is the summary of findings and conclusions.

2. Review of Literature

There is exhaustive literature that explains the impact of FDI on economic development and domestic investment. However, very few literature explore the impact of FDI in the food processing industry of India on domestic investment in the food processing industry. In this study we have covered the suitable and relevant literature on FDI and economic development, FDI and food processing industry, FDI and domestic investment.

2.1 Foreign Direct Investment and Economic Development

Foreign direct investment (FDI) is widely acknowledged as an important supplementary capital source for the economic advancement of developing nations. However, the ability of recipient nations to absorb FDI determines its positive benefits on economic expansion. For foreign direct investment to have growth-promoting impacts, there must be a strong financial system (**Hagan and Amoah, 2020**). Economic advancement is positively and significantly impacted by foreign investment, provided that there is a sizable pool of highly skilled laborers (**Anetor, 2020**).

While economic policies and reforms serve as foundations for drawing in foreign direct investment (FDI), it's important to understand that depending only on them might not be sufficient. Achieving sustainable FDI also necessitates strategic

marketing that highlights the nation's strengths and advantages (**Musila and Sigue, 2006**). Innovative industries play a crucial role in garnering Foreign Direct Investment (FDI) because of their greater capacity to embrace innovations, technology transfers, and educational outcomes. This is evident in the heightened productivity observed within these sectors (**Kosztowniak, 2022**). Another study by **Tahir and Alam, 2020**, discovered that the amount of Foreign Direct Investment (FDI) and the banking sector's performance are strongly interrelated. To attract more FDI, projects having FDI funding should be provided credit by domestic commercial banks.

Beyond a doubt, the cultural composition of a country influences how well foreign direct investment (FDI) streams. In nations with higher levels of traditionalism, the repercussions become negative; in more secular cultures, they become advantageous. Furthermore, we see that FDI has a greater impact on growth in individualistic societies rather than collectivistic ones (**Romero and Edwards, 2020**).

The study (**Shawl and Makina, 2022**) shows that FDI inflow has a noteworthy and favorable influence on economic development when it interacts with variables including trade openness, financial development, and human capital.

2.2 Foreign Direct Investment and Food Processing Sector

Inflow of FDI to agriculture depends on two determinants agriculture market size and agriculture import. Agriculture market size has positive impact on the foreign investment. Government should strict the

import of agriculture and device policies for attracting FDI in agriculture (**Lv et al 2010**). A study (**Djokoto et al 2014**) suggests that domestic investment in agriculture has positive impact on FDI to agriculture sector. It can be further stated that both domestic investment and agriculture are complimentary to each other.

A study by **Padhi 2022**, suggests that FDI originated from developed nation in food processing sector of emerging countries depends on highly skilled worked forces. Although India has open policy for FDI in food processing sector but lack of specialized labour has negative impact on FDI inflow.

2.3 FDI and Domestic Investment

A study by **Bakari and Tiba, 2019** have found that domestic investment has positive impact on economic growth of a nation on the other hand FDI and export have negative impact on economic growth. Further **Ahmad et al, 2018** in their research have established that domestic investment has significant impact on the economic growth whereas foreign investment in agriculture has either neutral or negative impact in attracting domestic investments. **Ivanovic, 2015** according to his research, has suggested that inflow of FDI decreases domestic investment.

Hanif and Jalaluddin, 2014 in their investigation found that although FDI and domestic investment has long run correlation but in short run FDI has less than proportion impact on domestic capital creation. They further suggest that in long run FDI has positive impact on domestic investments.

3. Methodological approach and data source

3.1 Methodological approach

3.1.1 Philips-Ouliaris Co-integration Test

To determine the long-term relationship between two variables in a time series, the Philips-Ouliaris cointegration test is used. Philips-Ouliaris co-integration test implies variables of time series move together despite short-run fluctuations. To ascertain the stationarity of time series data, the unit root test is run in the first stage. If both the variables are found to be non-stationary then regressing one variable over the other is performed. The null hypothesis is that the variables are not co-integrated.

Dynamic Ordinary Least Square (DOLS)

The Dynamic ordinary least square method is applied to calculate the co-integration relation among non-stationary variables of time series data. DOLS at first convert non-stationary time series to stationary then ordinary least square is applied. DOLS includes time series dynamics and correct autocorrelation errors.

3.2 Data source

In this study, secondary data from 2003 to 2023 has been analyzed. Major sources of data are hand book on Statistics of India published by the Reserve Bank of India, data released by the department for promotion of industry and internal trade (DPIIT) of India and statistics published by Ministry of Statistics and Programme

Implementation of India. The dependent variable is the domestic investment proxy of credit sanction to the food processing industry by commercial banks of India and the independent variable is an inflow of foreign direct investment in the food processing sector of India. Table-1 represents the extended meaning of the abbreviation used in the study.

Table-1: Meaning of abbreviations

Abreviation	Extended Meaning
FDI	Inflow of FDI in Food Processing Sector of India
DI	Domestic Investment (credit sanction to food processing industry)

4. Analysis

4.1 Philips-Ouliaris Co-integration Test

Table-2 exhibits results of Philips-Ouliaris Co-integration test. This test is used to determine the presence of co-integrating relationship among FDI and domestic investment. The value in the table represents the p-value (0.04572) which is less than 0.05 level of significance. Hence null hypothesis can be rejected. Null hypothesis states that there is no long-run relationship between FDI in food processing industry and domestic investment. Result implies that FDI and domestic investment has long-run relationship, indicating variables moves together over time despite short-run fluctuation.

Table-2: Co-integration Test Result for FDI and Domestic Investment

Null Hypothesis	p-value	Significance Level
There is no co-integration relationship between FDI and Domestic Investment	0.04572	0.05
Turncation Lag	0	
Intercept Included	Yes	

4.2 DOLS

Table-3 displays the result of DOLS. Coefficient for FDI is 0.05699, it means that change in FDI inflow will result in positive change in domestic investment. p-value is 0.0282 at a significance level of 5%, indicating FDI inflow in food processing industry has moderate influence on domestic investment.

Table-3: DOLS Result

Dependent Variable: Domestic Investment				
Included Observations: 20				
Variables	Coefficient	t-statistics	p-value	Significance Level
Intercept	772.53	5.266	5.24	0.0
FDI	0.05699	2.387	0.0282	0.05
Multiple R ²			0.2404	
Adjusted R ²			0.1982	

5. Conclusion

FDI is important for economic and technological development. Inflow of FDI in food processing industry exhibits gradual increment over past couple of decades. Incremental inflow of FDI confirms the growth potential of food processing industry of India.

Philips-Ouliaris Co-integration test confirms FDI and domestic investment has long run relation, whereas DOLS confirms that inflow of FDI in food processing industry has positive but only moderately significant impact on domestic investment.

Further studies can be conducted to include other relevant factors besides FDI inflow to identify factors influences domestic investment in food processing industry of India.

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