

## RESEARCH PAPER

# An assessment FDI inflow in food processing industry and Government policy option

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### ABSTRACT

Food processing sector acts as an essential bridge between the agriculture and industrial sector, which is requisite for overall development of an economy. India has a diverse climatic condition which is capable of providing a raw material base for food processing companies. Despite of being one of the largest producers of raw material for the Food Processing Industry (FPI) in the world, the FP industry is not fully developed. It calls for considerable capital investments. Foreign Direct Investment (FDI) can be one of the best alternatives for this investment. The government is trying to attract FDI in this sector by providing transparent and investment friendly climate. The government has started a “Make in India” initiative which seeks to club the demand and supply advantages within India. Government is dynamically promoting the concept of Mega Food Parks (MFPs) to attract FDI. But still major constraints in expanding the food processing sector are investment and lack of adequate infrastructure facilities. The objective of this paper is to analyze the importance of FDI inflow in the food processing sector by using time series data and government policy response over the time to strengthen the industry.

**KEY WORDS :** FDI, FPI, Agriculture, Government policy, Economic development, JEL Code: F21, L81, Q10, H53, O19

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The Indian Food Processing sector is critically important because of its contribution to the country's Gross Domestic Product (GDP) and helps in achieving food security. At the same time it provides employment to large number of people. India is among the leading producer of food in the world. Food processing sector act as a tool for inclusive and sustainable development of the country. The increasing demand of processed food in urban as well as rural areas encouraged the establishment of processing plants.

Therefore, food processing sector began to occupy a fairly predominant position in the overall industrial sector. To realize the potential of food processing sector, government of India taken this sector in “Make in India” campaign. This program is basically designed to facilitate investment, enhance skill development and build best-in-class manufacturing infrastructure. For success of this programme investment in needed. FDI is one the best alternatives investment option. Therefore, FDI with up to 100 per cent equity is permitted under the automatic route in food and infrastructure such as food parks and cold chains. Government has provided financial assistance to many food processing entities so far (GOI, 2011).

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National Mission on Food Processing (NMFP) has been launched with an aim to increase food processing levels from 10 per cent (2010) to 25 per cent (2025). For encouraging the food processing sector in India. Government has already initiated the plan for investment in mega food parks, agri-infrastructure, logistics and cold chain infrastructure. Globally, India ranks first in milk production, second in the production of fruit and vegetables and third in fish production. With increase in productivity and technological interventions, there is scope for further enlargement of the country's supply base. Though India has a strong raw material base, it has been unable to tap the real potential for processing.

### Objectives of the study:

- To analyze the Indian Food Processing scenario
- To analyze the Impact of FDI in Food Processing Industries.
- To analyze the government policies to strengthen the Food Processing Sector.

## METHODOLOGY

### Data collection:

This study is based on secondary data sources. Secondary data on FDI in food processing sector has been taken from Ministry of food processing (DIPP, Min. of Commerce.). Further, data of number of Registered Food Processing Units are taken from the Annual Report of Ministry of Food Processing. FDI in FPI data is collected from 2000 to 2014 and others data are taken as per the availability on the reliable sources.

### Data analysis:

Secondary data has been analyzed to understand the relationship between FDI for the number of registered food processing units by using scattered diagram with fitted trend line. To understand the macro-level impact of FDI on development of FPI a linear regression line is fitted on the scatter diagram. The scatter plot diagram shows the correlation between number of registered food processing unit (Y-axis) and FDI in FPI (X-axis), the variable along the Y-axis is the dependent variable and the variable along the X-axis is the independent variable. The value of the correlation co-efficient (r) indicates direction and degree of relationship between the two variables. The co-efficient of determination ( $R^2$ ) describes how independent variable (X) explains the

variation in the dependent variable (Y). Trend analysis has been done to understand variation in FDI inflow in FPI over the year.

Compound Annual growth rate has been evaluate by the Eq. (1)

$$CAGR = \left[ \ln \left( \frac{V_0}{V_n} \right)^{\frac{1}{n-1}} \right] - 1 \quad \dots(1)$$

where, " $V_0$ " is the value of FDI in FPI in the initial year or base year. " $V_n$ " is the FDI value in the last year and "n" is the number of time period taken.

## ANALYSIS AND DISCUSSION

The findings of the present study as well as relevant discussion have been summarized under the following heads :

### Food processing industry :

The term "food processing" is mainly defined as a process of value addition to the agricultural or horticultural produce by various methods like grading, sorting and packaging. In other words, it is a technique of manufacturing and preserving food substances in an effective manner with a view to enhance their shelf-life; improve quality as well as make them functionally more useful (Babu and Sekhar, 2015). A well developed food processing sector helps in reducing the wastage and enhancing the shelf-life of agricultural products with appropriate value addition. This sector also helps in promoting the employment opportunities as well as export earnings. Food processing sector also address the issues of food security and food inflation. A strong and dynamic food processing sector plays an important role in diversification of agricultural activities, improving value addition opportunities and creating surplus for export of agro-food products (Merchant, 2008 and Kachru, 2006). Among various agro industries, food processing industries are more material incentive, and thus, process a greater potential to revitalize agricultural growth by strengthening forward and backward linkages with farmers and speed up the process of commercialization and diversification of agricultural production (Sarkar and Karan, 2005 and Baisya, 2004). The Indian food processing industry is one of the largest in the world in terms of production, consumption, export and growth prospects. With the advent of new technologies and emerging markets, food processing sector has also

widened its scope. Many new items like frozen marine and meat products, processed fruits and vegetables, beverages, etc are produced by this sector. In line with these products, food processing sector has also established cold storages, food parks and packaging cent. Food processing sector is indispensable for overall development of an economy as it provides a vital linkage and synergy between the agriculture and industry. It helps to diversify and commercialize farming; enhance income of farmers; create markets for export of agro foods as well as generate greater employment opportunities.

### Performance of FDI in Indian food processing sector:

Fig. 1 indicates the inflow of Foreign Direct

Investment (FDI) in food processing sector. The inflow of FDI has significantly increased from 45.75 (US \$ million) in 2000-2001 to 3982.88 (US \$ million) in 2013-2014. Although there has been fluctuations in FDI inflow in FPI between 2001-2013, but increasing trend can be seen in the last five years. From the trend line it is perusal that the growth rate between this study period has been 17.32 per cent (Behera, 2009).

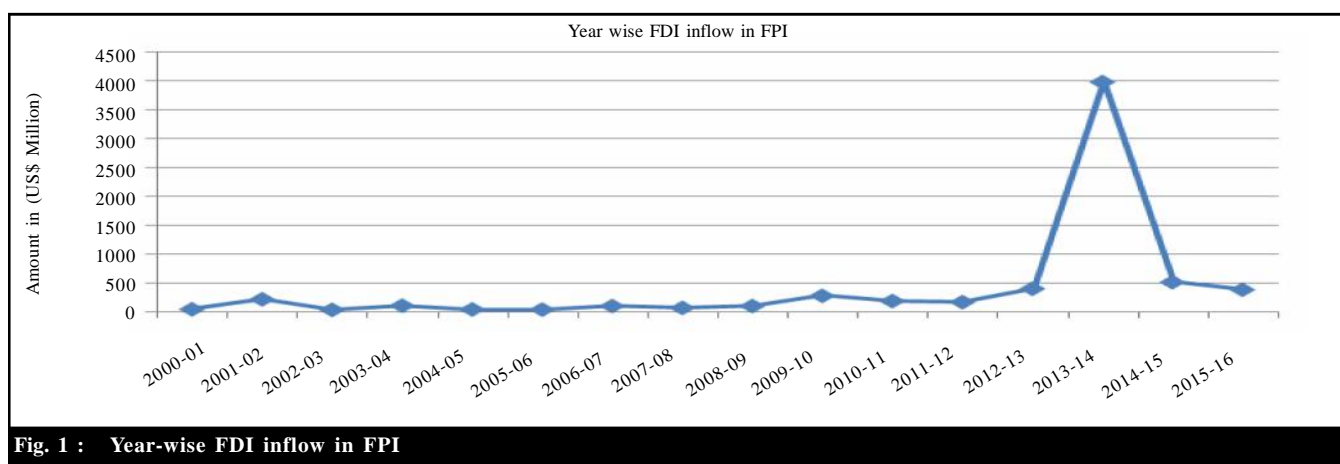
### FDI :

This Fig. 2 reveals the year-wise percentage share of FPI in total FDI. The share of FPI in total FDI varies in certain years *i.e.* 0.88 per cent in 2010- 2011 to 0.48 per cent in 2011-2012 and then increased to 1.79 per cent in 2012- 2013. This share has further increased to

**Table 1: Annual foreign direct investment inflow in food processing industry**

Year	FDI in FPI (Annual)		FDI total (Annual)		% of total FDI in FPI Annual (US \$ million)
	FDI (Rs Cr.)	FDI (US \$ million)	FDI (Rs Cr.)	FDI (US \$ million)	
2000-01	198.13	45.75	10733	2463	1.86
2001-02	1036.12	219.39	18654	4065	5.4
2002-03	176.53	36.88	12871	2705	1.36
2003-04	502.39	109.22	10064	2188	4.99
2004-05	201.32	43.98	14653	3219	1.37
2005-06	182.93	41.74	24584	5540	0.75
2006-07	457.28	102	56390	12492	0.82
2007-08	279.01	70.17	98642	24575	0.29
2008-09	455.59	102.71	142829	31396	0.33
2009-10	1314.23	278.89	123120	25834	1.08
2010-11	858.03	188.67	97320	21383	0.88
2011-12	826.16	170.21	165146	35121	0.48
2012-13	2193.65	401.46	121907	22423	1.79
2013-14	25106.78	3982.88	147518	24299	16.39
2014-15	3159.36	515.86	189,107	30,931	0.017
2015-16	2500.85	384.59	262,322	40,001	0.01

Source: DIPP, Ministry of commerce



**Fig. 1 : Year-wise FDI inflow in FPI**

**Table 2 : Compound annual growth rate**

Time period	Growth rate
2000-01 to 2009-10	8.43
2010-11 to 2015-16	26.23
2000-01- to 2015-16	18.63

16.39 per cent in 2013-2014.

Pictorial representation of variation in FDI inflow in FPI with regression trends line and percentage share of FDI in food processing industry to total FDI is given. From the Fig. 1 it can be seen that 1 per cent increased in FDI in the FPI leads to 5.62 per cent of registered food processing units yearly. The value of R-square is .411, which indicates that model is explained by 41.1 per cent, while the correlation between FDI in food processing industry and number of registered food processing units is 0.64.

### Government policy response for food processing industry:

To strengthen the food processing industry Government of India has taken many initiatives this leads to encourage the investor to invest in this industry. As discussed that food processing industry have massive potential and opportunities for enterprises. But in actuality, to realize this potential a well developed infrastructure is required because a big supply chain is involved with this industry. Most of the processed food items have been exempted from the purview of licensing under the Industries (Development and Regulation) Act, except items reserved from the small produce scale sector and alcoholic beverages. Food processing is recognized as a priority sector in the new manufacturing policy in 2011. Government had spend a special fund of INR 2,000 Crore

in the Financial year 2014-15 in NABARD for extending affordable credit to designated food parks and the individual processing units in the designated food parks at concessional rates. The fund is being continued in 2015-16. Reserve Bank of India has classified loan to food and agro-based processing units and Cold Chain under Agriculture activities for Priority Sector Lending (PSL). It will ensure greater flow of credit to entrepreneurs for setting up of food processing units and attract investment in the sector.

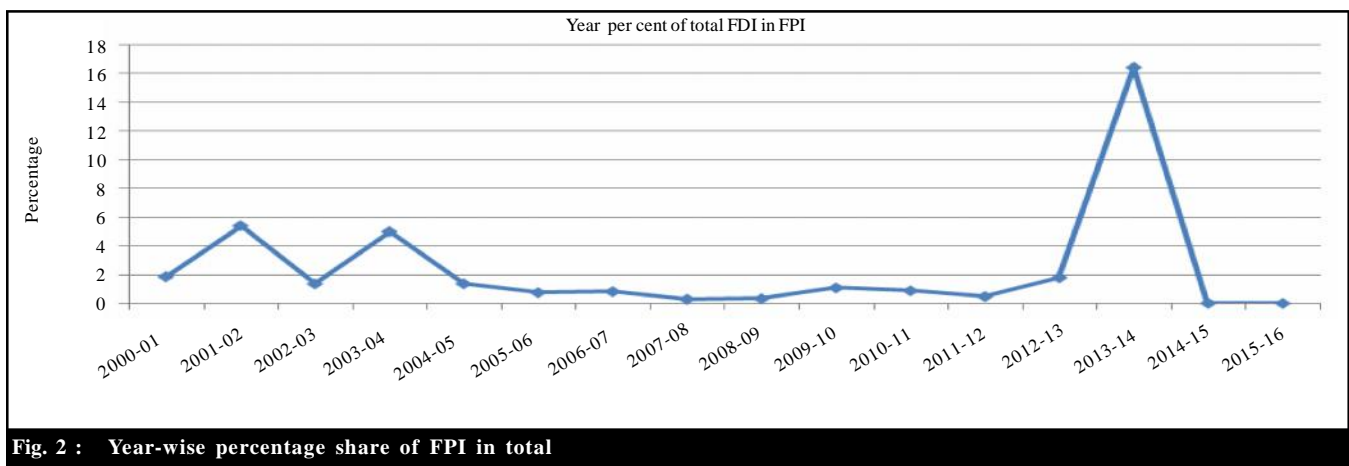
Therefore, to develop the industry a smooth forward and backward linkage is requisite. Some major steps taken by the government are discussed below.

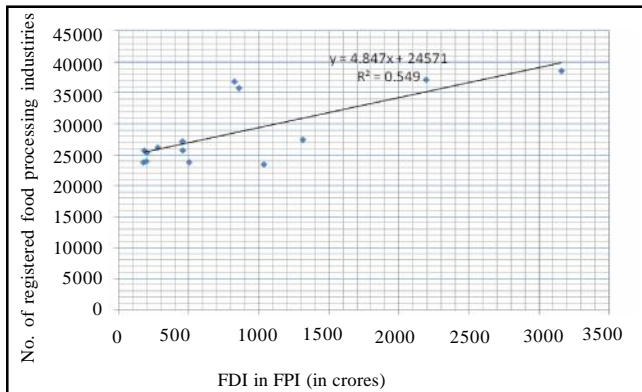
### Mega food park scheme :

Market linkage is one of the fundamental problems faced by the farmers. Due to marketing inefficiency, producer share of consumer rupees is low (Gandhi and Namboodiri, 2004). To ensure an efficient supply chain government started a scheme, namely Mega food park scheme with the objective of providing a mechanism to link agricultural production to the market by bringing all stakeholders like farmers, processors and retailers together to maximize the value addition, minimizing wastages and increasing farmers'. Facilities required for developing food processing industry at extent of international standard provided under this scheme.

### Cold chain scheme :

From farm to fork a number of intermediaries and long time duration exist. The purpose of this scheme is to provide an integrated infrastructure of cold chain that the quality of the produce is maintained at desired





**Fig. 3 : Relationship between FDI in FPI and number of food processing units**

standard. At production level facilities needed like vans, mobile cooling units as well as value addition centers, which include infrastructural facilities like Processing/ Multi-line Processing/ Collection Centers, etc. are covered under this scheme. Department of Economic Affairs, Ministry of Finance has covered Cold Chain under Infrastructure category.

#### Modernization of abattoirs:

The major objective of this scheme is upgradation and modernization of existing abattoirs and establishment of new abattoirs at well standard. The major contributing bodies of this scheme to run it at local level are Municipal Corporations

and Panchayats/Public Sector Under-takings/Co-operatives/ Boards under Government. Some private investors are also encouraged to invest on PPP basis.

#### India's FDI policy for food processing industry:

Foreign Direct Investment (FDI) is permitted in food processing industry upto 100 per cent on automatic route excluding some items reserved for (MSEs). In India, the government has allowed foreign equity upto 100 per cent for most of the processed food items except alcohol, beer and those reserved for small scale sector subject to certain conditions (Tada *et al.*, 2009). FDI in Micro and Small Enterprises is subjected to intra sectoral regulations. The government of India is planning to offer income tax benefits in the food processing sector. The recent budget has announced several policy measures, especially for the cold chain infrastructure, to encourage private sector activity across the entire value chain and invite foreign investments in the sector the Government allows 100 per cent FDI in the food processing and cold chain infrastructure (Bottlenecks in Indian Food Processing Industry – Survey 2012). The FDI is permitted through the following forms of investment (1) Financial collaborations (2) Joint ventures and technical collaborations (3) Capital markets via Euro issues (4) Private placements or preferential allotments (Saravan and Mohansundaram, 2013).

**Table 3 : Some scheme that make an indirect impact on FPI (Related schemes of some other agencies)**

Scheme	Objectives
National Horticulture Board (NHB)	Setting up of cold storage (of capacity above 5000 MT and upto 10000 MT) and their modernization is eligible for assistance under the NHB scheme
National Horticulture Mission (NHM)	Cold storage (long term storage and distribution hubs) upto 5000 MT capacity are eligible for assistance under the open ended scheme of NHM/ HMNEH (a sub scheme of MIDH)
Small Farmer Agri-Business Consortium (SFAC) assistance to cold storage	Setting up of cold storage as a part of an integrated value chain project are eligible for subsidy provided the cold storage component is not more than 75% of TFO (Total Financial Outlay)
Agricultural and Processed Food Products Export Development Authority (APEDA) assistance for cold chain: Setting	Setting up of the cold chain is assisted by APEDA as a part of strategy to develop the industries relating to the scheduled products (click for list of products) for export
Food Processing Unit	Under Horticulture Mission For North Eastern Region and Himalayan states (HMNEH) a sub scheme of MIDH Food processing units for horticulture products are extended credit linked back ended capital investment assistance of 50% of project cost
Venture Capital by Small Farmer Agri-Business Consortium (SFAC)	SFAC extends venture capital assistance in the form of equity to agribusiness projects. The quantum of SFAC support is 26% of promoter's equity or amount of Rs. 50 lakhs whichever is lower in general area and 40% of the promoter equity or amount of Rs. 50 lakhs which ever is lower in Hilly and NE regions.
Pradhan Mantri Kaushal Vikas Yojana (PMKVY)	The objective of this skill certification and reward scheme is to enable and mobilize a large number of Indian youth to take up outcome based skill training and become employable and earn their livelihood

**Source:** Ministry of food processing, GOI, Compiled by the author

## Conclusion:

The paper clearly indicates that a growing industrial sector is crucial to greater economic development and particularly in an emerging country like India; the development of food processing sector will contribute significantly by serving as a bridge between agriculture and industry. On the basis of the study, the findings and conclusion of this paper is that food processing industry is of enormous significance for India's development. This sector has synergized the development process and promoted the growth of the nation to a great extent. Indian food market now provides a big market for their products. FDI has played a major role in the transformation and development of India's food processing industry. By a favorable policy environment and with growing disposable incomes, India offers significant investment opportunities in the food business sector and thus has become an attractive destination for investments by the foreign investors. Table 1 indicates the inflow of Foreign Direct Investment (FDI) in food processing sector. The inflow of FDI has significantly increased from 198.13 (Rs. Crore) in 2000-2001 to 25, 106, 78 (Rs. Crore) in 2013-2014. However, the share of FPI in total FDI shows a fluctuating trend in certain years. From 0.88 per cent in 2010-2011 it reduced to 0.48 per cent in 2011- 2012. In 2012-13 it shows a increased trend of 1.79 per cent. This share has increased further to 16.39 per cent in the 2013-2014 year period. Although the government has taken many initiatives to strengthen the food processing industries like mega food park scheme, cold chain scheme, modernization of abattoirs. In spite of all these growth impacts of food processing industry of India, the government must address some significant constraints such as exploration of untapped potentials of industry, value-addition in un-processed categories of food must be raised for the domestic and international demand, investment in supply chain in order to improve costs, tighten supplies and minimize waste must be adopted and thus the focus towards food processing industry as a priority sector must ensure policies to support investment in this sector and attract more FDI inflows.

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