

Growth and trends of FDI in Food Processing Industry

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Abstract

FDI is an important monetary source for India's economic development. It plays a significant role in the global economy by facilitating increase in investment, technology transfer, economic development etc. Foreign Direct Investment (FDI) in the food processing sector refers to the investment made by foreign entities or individuals in businesses involved in the processing and manufacturing of food and food-related products in a host country. FDI in the food processing industry can have several benefits for both the host country and the investing entities like increased production efficiency, technology transfer, employment generation, value addition, increase in export potential, infrastructure development, improved food safety and quality, diversified food products, market expansion etc. Governments often regulate and encourage FDI through policies, incentives, and investment-friendly environments. The specific impact of FDI in food processing will vary depending on the host country's circumstances, the nature of investments, and the regulatory framework in place. Careful planning and monitoring are essential to maximize its benefits while minimizing potential drawbacks. According to Economic Survey 2022, FDI in the food processing industry has increased 86 percent during April-September in FY22 to \$410.62 million compared to \$220.42 million in the corresponding period of the previous year 100 per cent FDI was permitted under the automatic route and 100 per cent is allowed through government approval route for trading, including through e-commerce, with regard to the food products manufactured or produced in India. The paper delves into the growth and trends of FDI in India and has also looked into the growth of FDI equity inflows with respect to the food processing industry in India and Kerala based on secondary data along with a primary data analysis of the effect of policy measures and economic reforms in Food Processing Industry in Kerala and it also explores the key initiatives taken by the central government for the holistic and overall growth of the sector.

Key words: FDI, Food Processing Industry, economic development, policy measures

Introduction

Right from the start, the concept of foreign direct investment has been seen as a channel of progress and development and it was seen as the ability by the investors to bring financial resources and technology to the nation. It indicated the existence of a long term relationship between the investor, the business and the place where it was situated. (Chinngaihlian, 2018) Domestically available capital may not always be sufficient for a country's long-term development and the foreign investment is seen as a way to bridge

the savings and investment gaps that exist domestically (Dar & Kumar 2020). After the announcement of Industrial Policy Statement of 1973, the Foreign Exchange Regulation Act (FERA) came into force in 1974 which gave a detailed list of industries in which foreign firms could participate with or without FDI. So the period between 1970 to 1980 was considered as an FDI restrictive period. By 1990's FDI began to emerge as the most preferred route for mobilization of financial resources when compared with loans and other forms of financial transactions throughout the world. Foreign equity up to 51 per cent was permitted under the automatic approval route by the RBI in specify industries producing intermediate and capital goods. FDI in India was introduced in 1991 under the Foreign Exchange Management Act (FEMA) implemented by the then finance minister, Dr. Manmohan Singh. FDI, apart from contributing to the economic growth of a country, it also facilitated the inflow of new technology, managerial expertise, new ideas, skills, knowledge, more employment, and improved infrastructure. FDI was considered as an instrument to bring in foreign technology which was not available domestically and thus the idiom 'indigenously produced' was replaced by 'produced using sophisticated and high technology'.

From 2016, 100 per cent FDI was permitted under the automatic route in the Food Processing Industry in India and from 2017, 100 per cent FDI is allowed through government approval route for trading, including through e-commerce, with regard to the food products manufactured or produced in India. The FDI investment showed a very high boost in the year 2013-2014 at 16.39 per cent but declined in the next few years. As one of the world's major food processing industries, India's output is anticipated to reach \$535 billion by 2025-2026. It plays a crucial role in establishing a connection between Indian farmers and both domestic and foreign consumers. The Ministry of Food Processing Industries (MOFPI) is making every effort to promote investments throughout the value chain. According to the NSSO 73rd round survey, in terms of employment generated throughout all registered factory sectors, the food processing industry accounts for 12.38% (at the 3-digit NIC categorization), or over 1.93 million workers and the unregistered food processing sector supports employing 5.1 million people. The food processing business in India is divided into a number of different categories, including grains, edible sugar oils, beverages and dairy products and includes 41 Mega Food Parks, 356 Cold Chain Projects, 60 Agro-Processing Clusters, 317 proposals for the creation or expansion of food processing and preservation capacities, 61 projects to create backward and forward linkages, and 6 Operation Green projects which have all been approved nationwide under the Pradhan Mantri Kisan Sampada Yojana. Fruits and vegetables, poultry and meat processing, fisheries, food retail, the dairy business, etc. are the key sub-segments of the food and processing industry in India. The equity inflow of FDI in the food processing sector for the period of April 2021 to March 2022 was \$709.72 million and the total FDI received in this sector was \$11.51 billion (FDI India, Jan11, 2023).

The paper has aimed to explore the global nature of the food processing industry (India's Share in Global Food Trade) along with growth in the FDI equity inflows from 2001 to 2022 with respect to the food processing industry in India and Kerala. A comparison of the total annual FDI inflow in India has been done with the FDI in food processing industry in India and the share of FPI in FDI along with the percentage growth has also been determined. The study has also analysed the effect of policy measures and economic reforms in Food Processing Industry in Kerala and it also explores the key initiatives taken by the central government for the holistic and overall growth of the sector.

Review of Literature

Chattopadhyay & et.al (2022) in their study has opined that foreign direct investment (FDI) movement to any country is recognized as an important criterion for economic strength and potentiality. The study analyzed the motives of FDI inflows through the determinants and channels, and the impact of COVID-19 on FDI Inflows in BRICS countries during the period 1990-2020. Molerakhi (2018) in the paper, "An

Appraisal of Problems and Prospects of Food Processing Industry in Belgaum", has made an attempt to know how far selected food processing units in Belgaum have achieved the principles of industrial development along with the study of the strengths and weaknesses of food processing industries and has analysed they need growth and development of food processing sector in Belgaum. Shrivastava (2017) in the research article "Agro-based food processing industries in Uttar Pradesh: Problems & Prospects has written about the Agro-industry which generates new demand on the farm sector and different agricultural outputs. According to the researcher the development of these industries would relax wage related constraints to economic growth and thus increase the supply of their products. Vimala & Shima (2017) in their paper "Food Processing Industries in Kerala- Scope and Challenges" has concentrated on the performance of food processing industries in Kerala and its scope and challenges. The findings indicated that the strengthening of interdependence between productive sectors in an economy is necessary for the growth of sectors which will help in the evolution of a strong based economy. Sarkar & Maji (2016) in "Growth of food processing industries and its future potentialities: a case study on Hooghly district, West Bengal" has tried to study the impact and economics of agro processing units along with the potentiality of food diversification, employment generation capacity and constraints along with the export performance of various agro based industries. Kadam (2015) in his thesis, has highlighted that the idea about social economic educational and occupational backgrounds of small entrepreneurs in food processing industry and tried to assess the development of food processing industry along with evaluating the existing policies programs institution networks and involvement of supporting agencies and also to identify the problems and prospects of food processing industrial units extra. In the study by Sheela (2015), the author is of the opinion that even if India has achieved food security at the national level, achievement has not been adequate at the individual and family levels. Shelley (2015) in "Impacts of Food Processing Industry on Economic Growth FDI and Exports of India" has tried to analyse the contribution of food processing sector in the GDP of India, the inflow of FDI in food processing sector along with the export structure of processed foods. Anjana & Rosa (2014), in a market survey, Food Processing Industries in India- An Overview, has studied the inflow of foreign direct investment and its annual growth rate in the food processing industries in India and analyzed export of food products and points out the strength, weakness, opportunities and threats to the food processing industry in India. Gokhale (2014) in the thesis on "An Evaluatory Study of Fruits Processing Industry in South Konkan Region" has found that fruit processing industry plays immense role in poverty alleviation, nutritional value, employment generation and environment protection of the nation. It has been encountering a number of constraints related to raw material, finance, marketing, and technology. So her study focused on feasibility, profitability, employability of the sector as well as the administrative and marketing problems faced by the sector. Jadhav (2014) in "A study of Food Industries in India", has tried to find out the number of food processing units in the organised sector, study the exports of India's agro food products, the contribution of food processing industries in the GDP and also has done a SWOT analysis of food processing industries in India. Saraswati (2014), in " Export Potential of Food Processing Industry in India" has looked into the share of FPI export and examined the export potential in the food processing industries along with the role played by APEDA in export promotion in India. Singh (2014) in the paper "A Study on Development Trends of Food Processing Sector in India" has made an attempt to get an overview of the current status of Food Processing sector and also its role in the economic development of the nation as a whole and economic condition of rural people. It has also tried to assess the role of processed foods sector in creating employment opportunities, increasing output, income and raising the standard of living. Kachru (2010)," Agro Processing Industries in India- Growth, Status and Prospects" in his article has gone for a swot analysis of agro-processing industry infrastructure in India. Jose (2005) in the thesis "Economics of food processing industries in Kerala" has tried to study the economic significance of food processing industry in Kerala, along with the cost and revenue structure of units and to identify the major problems related

to the sector. Chattopadhyay & et.al (2022) study findings showed significantly positive growth in FDI inflows in all BRICS countries except India during the first decade of the present century. After that, these countries have experienced either significantly or insignificantly declining trends, except India, where the trend has significantly increased during this later period. From the overall analysis, we see that both horizontal and vertical motivations play a dominant role in determining FDI inflows for the BRICS countries, it is also observed that both horizontal and vertical motives are dominant factors for FDI inflows to India and Russia. According to Shrivastava (2017), there is a need for improving the capacity of the agro- industries to harness backward linkages with agriculture and allied activities in order to efficiently convert part of the output to value added products which are acceptable to the domestic and international markets. The present investigation endeavoured to look at the rising structure in the development of agro businesses, capital speculation, yield, generation innovations, work commitment, linkages in supply of material, commitment and effect of agro preparing businesses in expanding salary and work of family units etc. In the study of Vimala & Shima (2017) it showed that a change in the input structure of this industry towards capital intensive techniques and increasing industrial efficiency in terms of output input ratio. It was also found that productivity of inputs, labour and capital was high. According to Sarkar & Maji (2016) the value addition process of agricultural and horticultural products requires efficient and skilled labours. Presence of middlemen in the agricultural sector is one of the most important hindering factors of this industry, as they try to black market the agricultural products. In their opinion not only this industry has a great socio economic impact in transformation the rural economy it also can lead to employment generation and helps in reduction of wastage, value addition, and increase foreign exchange earnings and also helps in enhancing manufacturing competitiveness. Kadam (2015) has concluded that food processing industry is facing constraints like non availability of adequate infrastructure facilities lack of quality control in efficient supply chain seasonality; high taxation etc but still there is a huge opportunity for investments in food and food processing. Sheela (2015) The book highlights about the various perspectives with respect to food security, identified the gaps, issues and challenges before the government systems and it also provides theoretical and practical intellectual insights on the issues related to the food sector. Shelley (2015) has indicated that a growing industrial sector is very important to the economic development for a country like India because the optimum development of a processing sector will help to contribute significantly in tackling several development concerns, help in the prevention of wastage of food, improve nutrition etc. According to the researcher the sector has helped in the development process and in promoting the growth of a nation to a great extent along with this FDI has also played a major role in the transformation and development of India's food processing sector. The researcher has suggested that the government must address some of the significant constraints such as exploration of untapped potential of this industry, value addition in unprocessed categories of food, investment in supply chain, minimise waste etc so that focus of making processing industry as a priority sector can be done in a faster track. In the study by Anjana & Rosa (2014) one of the biggest constraints was that the industry was capital intensive. One of the other main constraints was poor infrastructure for storing raw food materials. Some of the threats faced were high inventory carrying cost and high packaging cost and also high taxation. Jadhav (2014) has found that as per the records in 2012, there are a total of 183422 food processing industries in India. The contribution to GDP was 1.5% and the export value has decreased from 36.08% to 31.53% in 2012-2013. The SWOT analysis showed that there is high demand in India for this sector and the agriculture production has increased and has also increased the employment opportunities. As per Saraswati (2014), even with increased agricultural initiatives and advantages, the processing of raw material for value addition is still at a very low level in developed countries. India's share in world trade in respect of processed foods is only 1.6 per cent and according to the research India was ranked 27th in 2006 in terms of trade performance of Processed Food Products. To boost the growth, there should be an increase in the share

of exports and reduction in the instability of export and for that, the Government and the industry have to work in close unison. The industry needs to look into the latest technologies to achieve greater efficiency which could provide economies of scale and cost effectiveness. Singh (2014) A strong and dynamic food processing sector can play a significant role in diversification of agricultural activities, improving value-addition opportunities and creating a surplus for export of agro-food products. The food processing sector has given a hope for a better future to the people engaged in agriculture. It reduces the wastages and ensure the adequate supply of food products and hence, stabilizing the economy by maintaining the price at a moderate level. Bung (2012), in the paper on "Indian Fruit Processing Industry- Import and Export Analysis", has come to a conclusion that the Indian fruit processing has tremendous scope for unparalleled growth prospects in future. The Govt. of India has taken a lot of initiatives and policy decisions for commercialising agriculture with specific importance to high tech horticulture and developing the fruit processing sector to its full capacity. He has found that India has to focus on exporting processed fruit products than fresh fruits and they will help in higher value addition, higher earnings of foreign exchange, bring down post harvest losses and generate employment and it was also found that there has been an increase in the import because of rapid explosion of middle class population and a sharp increase in disposable income. A well coordinated, integrated and strategic effort of all the people who are involved in this, like fruit growers, fruit processors, channel members, nodal bodies (Governmental & Non- Governmental) and the consumer is a must for the success of this industry in the coming years. According to Roy, Begum & Selvakumar (2012) the strategies suggested by them to overcome the problems are national plan for improvement and extension; identify areas for research and development, establishment of new food processing plants, improvement in infrastructure, financial incentives and support and arrangement to supply the required market information to the farmer or the Agro processor. Kachru (2010) has suggested some measures like National plan for improvement and extension of agro-processing technology at farm. Traditional small and modern industry should prepare thrust areas for research and development programme. It should be analysed and implemented to support the national plan for improvement and extension of agro-processing technology at different levels. The national plan should provide for management of agro-industrial activities in the catchment area, both by private companies and individuals as well as cooperatives. Financial incentives and support should be given on a large scale to promote the modernization of agro-processing industry and for establishing new such industries. From the study Jose (2005) has concluded that the food processing industry in Kerala is facing a variety of problems right from its inception. Some of the major problems are the availability of raw materials, the seasonal nature, lack of uniform quality, unavailability of skilled and efficient labour etc. The infrastructure is also not much developed and there is unhealthy competition and lack of storage facilities that are causing hardships to the food processing industry. The lack of effective laws and regulations to be passed by the governments are also hindering the growth of food processing industry in Kerala.

Scope of the study

The study entitled Growth and trends of FDI in Food Processing Industry has investigated the global nature of the food processing industry and the growth and trend in the FDI India and also FDI equity inflows with respect to the food processing industry in India and Kerala. A comparative study of the total annual FDI inflow in India has been done with the FDI in food processing industry in India and the share of FPI in FDI. The study has analysed the effect of policy measures and economic reforms in Food Processing Industry in Kerala. The state of Kerala is the geographical coverage for the study and it is confined to and covers units from each district. The study is based on the opinion of the owners of the food processing units and it also explores the key initiatives taken by the central government for the holistic and overall growth of the sector.

Research Methodology

The design of the study is descriptive and analytical in nature. The study attempts to describe and analyse the effect of policy measures and economic reforms in the Food Processing Sector along with the share in the global food trade as far as India is concerned. The study required both primary and secondary data for meeting the objective. Primary data were collected from the sample respondents who are the owners of the food processing units using a structured interview schedule. The primary data for the study were collected from food processing units in the state of Kerala. The Secondary data were obtained from Publications of District Industries Center (DIC), Ministry of Food Processing Industries (MOFPI- Annual Reports), Department for Promotion of Industry & Internal Trade (DPITT), NABARD etc. To find out India's share in global food trade, data pertaining to 8 yrs, i.e., from 2014 to 2021 has been studied and to assess the trends in the growth of FDI in food processing sector, published data for a period of 20 to 22 years has been used. For analyzing the primary data both descriptive and inferential statistics were applied with statistical tools such as averages, percentages, mean percentage score, one sample t-test, independent sample t- test; ANOVA, friedman's test etc.

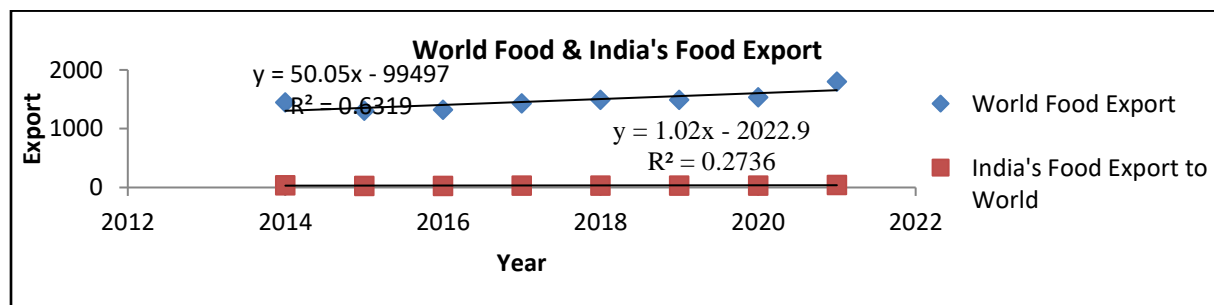
Data Analysis & Interpretation

India's Share in Global Food Trade

Table No: 1
India's Share in Global Food Trade (US \$ Billions)

Year	2014	2015	2016	2017	2018	2019	2020	2021
World Food Export	1448.24	1304.99	1325.68	1432.27	1493.35	1491.66	1535	1804.69
World Food Import	1459.12	1333.35	1336.42	1449.51	1524.46	1524.49	1573.45	1852.15
India's Food Export to World	37.74	30.41	29.19	34.42	34.07	33.62	35.2	44.71
India's Food Import from World	19.28	20.78	21.93	25.09	19.6	19.18	20.37	28.71
% Share of India's Food Export in World	2.61	2.33	2.2	2.4	2.28	2.25	2.29	2.48
% Share of India's Food Import in World	1.32	1.56	1.64	1.73	1.29	1.26	1.29	1.55

Source: MOFPI Annual Reports 2022-2023



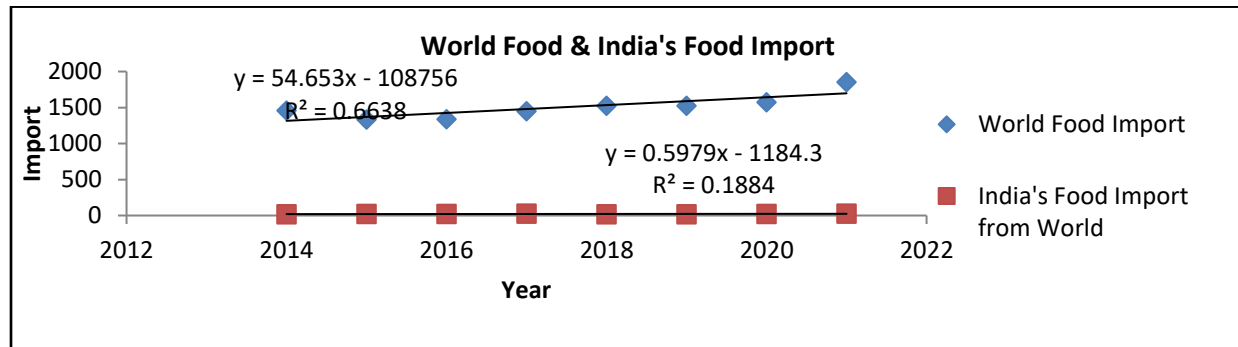
Source: MOFPI Annual Reports 2022-2023

Fig 1
World Food Export & India's Food Export

International food prices dipped in 2015, the fourth consecutive annual fall, due to substantial decline in dairy, sugar and vegetable oil prices according to the United Nations food agency (Economic Times, Jan

11, 2016). Abundant supplies in the face of a timid world demand and an appreciating US dollar are the main reasons for the general weakness that has dominated food prices in 2015. According to FAO, "Over the full year, the index has averaged 164.1 points, nearly 19 per cent less than in 2014, marking the fourth consecutive annual decline.

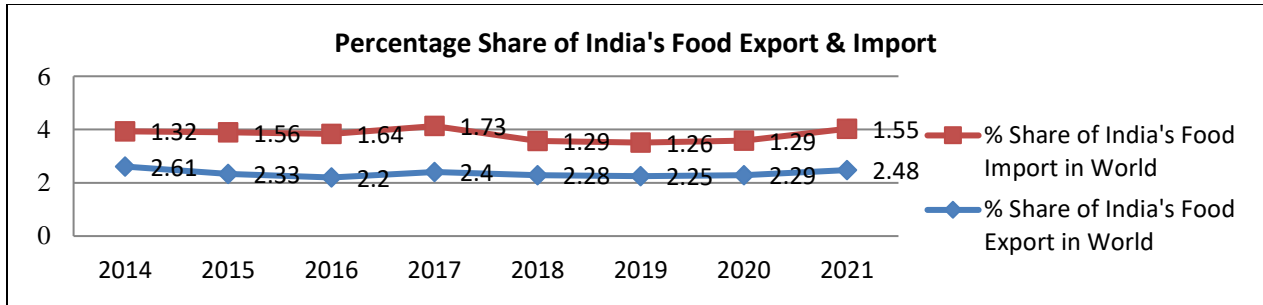
The decline in worldwide pricing over the past few years has largely been to blame for the relative stagnation of global agricultural commerce. A significant factor in the global agricultural commodities prices' softening was the sudden decline in oil prices. But trade volume remained stable, indicating that there is still a lot of demand in the world market. Due to the effects of the decline in world pricing, the percentage of India's food exports has showed a near constant decreasing trend in 2014, from 2.61 % to 2.48 % in 2021. The tight global market environment hasn't stopped India's agri exports from recovering significantly, though, thanks to regular output in 2016–17. The eight-year comparison of India's food exports paints a positive image. India's food exports, which totalled USD 33.6 billion in 2019 and represented only a small percentage of its production, have remained constant over the past five years, with processing accounting for almost 15% of total exports. Despite having a solid starting position, India ranks 13th globally with a market share of 2.5%, trailing other nations including the Netherlands, Belgium, and Italy in both export volume and export value (fincomindia 2020). Concerns over national food security and wellness have grown as a result of the COVID-19 worldwide pandemic, which has also increased the impact of these trends. However, the precise extent of the damage is unknown because the pandemic is continuously changing and there are many factors at play. From the table, R^2 expresses the explanatory degree of the relationship between the x and y variables. The values of R^2 range from 0 to 1. The higher the R^2 value, the closer is the relationship between the x and y variables.



Source: MOFPI Annual Reports 2022-2023

Fig 2
World Food Import & India's Food Import

World food import has seen a decreasing trend from 2015 and 2016 as compared to 2014. From 2017 it has started to increase and has been steadily increasing. But India's food import has shown an increase consecutively from 2014 to 2017 and in 2018 and 2019 it has decreased as compared to the previous years. From 2019, it is showing an increase and in the year 2021, it has reached the highest value of 28.71 when compared to the previous 7 yrs.



Source: MOFPI Annual Reports 2022-2023

Fig 3

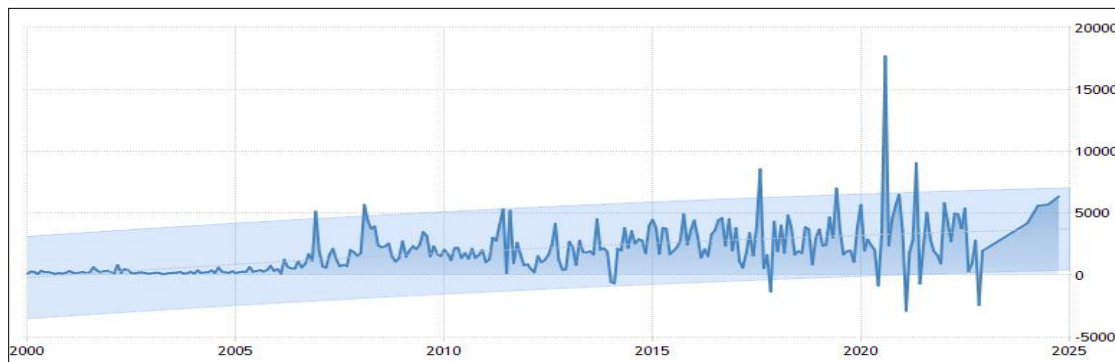
Percentage share of India's Food Export & Import

The percentage share of India's Food Export has decreased from 2014 (2.61) and is showing an increase only in the year 2021 (2.48) and the percentage share of Import has steadily increased from 2014 (1.32) to has reached the highest point in 2017, with 1.73 percentage and then decreased for the three years consecutively from 2018, 2019 and 2020. From 2021, it has shown a remarkable revival with 1.55 percent.

Growth and Trend of FDI in India

India remains a bright spot in the **world economy** despite a decrease in FDI due to global headwinds. India's growth factors include a large labor market, enabling policies, and an expanding digital economy. We have received its' highest-ever FDI inflow of US \$ 83.57 billion in the fiscal year 2021-2022. But, 2023 saw a drop in FDI inflows due to global uncertainties. Total FDI inflows in 2023 amounted to US \$ 70.97 billion. A census conducted by the Reserve Bank of India (Business today 2023) has revealed that the United States was the largest source of foreign direct investment (FDI) in India in 2023. It was followed by Mauritius, the United Kingdom and Singapore, which collectively accounted for 60 per cent of the inward FDI in the country. The FDI in terms of market value amounted to Rs 50 lakh crore in 2023. As per the RBI data, the US brought in Rs 8.58 lakh crore (\$103 billion) FDI in 2023 as against Rs 8.05 lakh crore in the previous fiscal. This was about 17.2 per cent of the share. FDI from Mauritius was Rs 7.43 lakh crore (Rs 7.79 lakh crore in 2022) accounting for a share of 14.9 per cent and the UK Rs 7.08 lakh crore (Rs 5.83 lakh crore in 2022).

Foreign Direct Investment in India for 25 Years



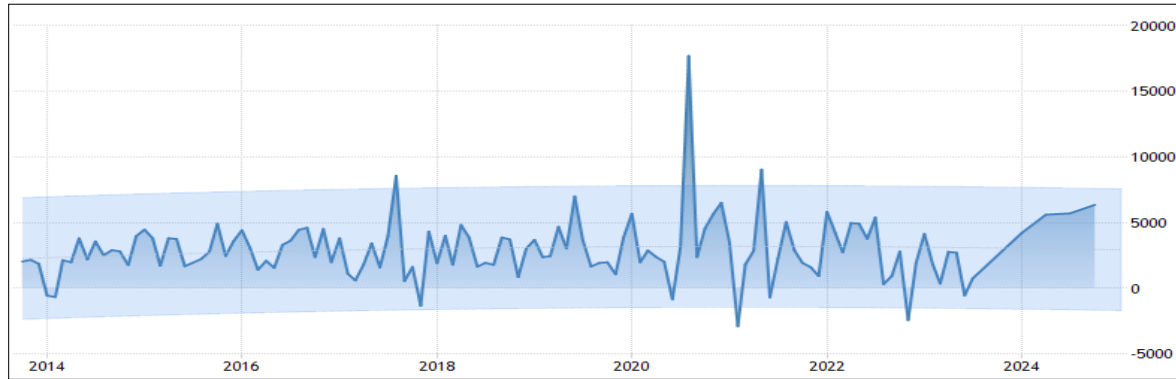
Source: tradingeconomics.com, RBI, 2023

Fig 4

Foreign Direct Investment in India from 2000 to 2025 (Projected)

Foreign Direct Investment in India is expected to be 3,100 USD Million by the end of this quarter, according to Trading Economics global macro models and analysts expectations. In the long-term, the India Foreign Direct Investment is projected to trend around 9,800 USD Million in 2024 and 10,700 USD Million in 2025.

Foreign Direct Investment in India for 10 Years



Source: tradingeconomics.com, RBI, 2023

Fig 5

Foreign Direct Investment in India from 2014 to 2025 (Projected)

Foreign Direct Investment in India averaged 1600.40 USD Million from 1995 until 2023, reaching an all time high of 17689.00 USD Million in August of 2020 and a record low of -2891.00 USD Million in February of 2021.

FDI Equity Inflows and FDI in FPI

Table No. 2

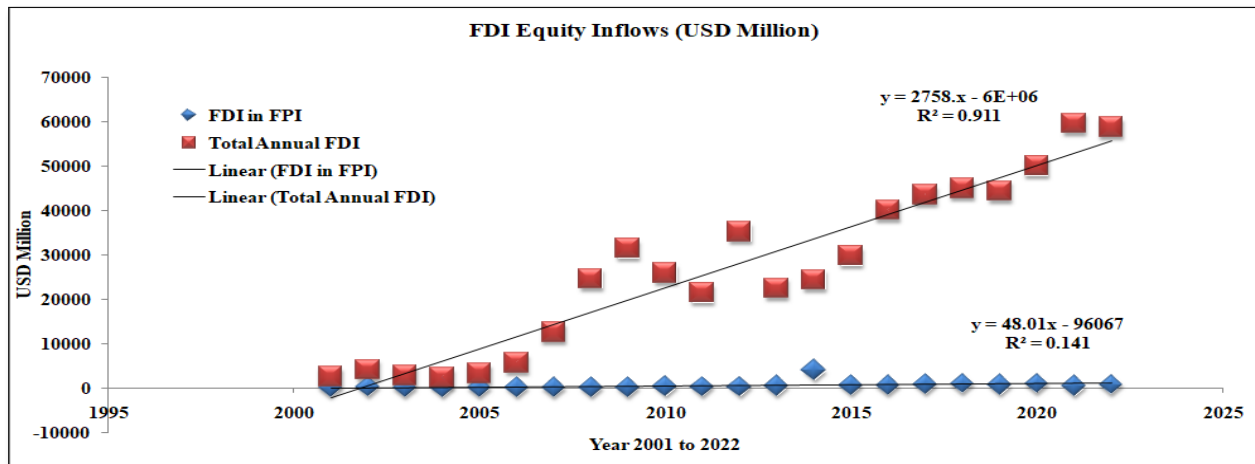
FDI Equity Inflows (Financial Year) 2001-2022

0	FDI IN FPI		TOTAL ANNUAL FDI		Share of FPI in total FDI (USD million)	% growth over previous year
	INR Crore	USD million	INR Crore	USD million		
2001	198.13	45.75	10733	2463	1.86	0
2002	1036.12	219.39	18654	4065	5.40	65
2003	176.53	36.88	12871	2705	1.36	-33
2004	510.85	109.22	10064	2188	4.99	-19
2005	174.08	43.98	14653	3219	1.37	47
2006	182.94	41.74	24584	5540	0.75	72
2007	457.28	102	56390	12492	0.82	125
2008	279.01	70.17	98642	24575	0.29	97
2009	455.59	102.71	142829	31396	0.33	28
2010	1314.23	278.89	123120	25834	1.08	-18
2011	860.99	188.67	97320	21383	0.88	-17
2012	859.02	170.21	165146	35121	0.48	64
2013	2193.65	401.46	121907	22423	1.79	-36
2014	25106.78	3982.88	147518	24299	16.39	8

2015	3164.72	515.86	181682	29737	1.73	22
2016	3312	505.88	262322	40001	1.26	35
2017	4865.85	727.22	291696	43478	1.67	9
2018	5835.62	904.9	288889	44857	2.02	3
2019	4430.44	628.24	309867	44366	1.42	-1
2020	6414.67	904.7	353558	49977	1.81	13
2021	1670.37	393.41	442569	59636	0.66	19
2022	6536.97	709.71	437188	58773	1.21	-1

Source: DIPP, Ministry of Commerce. FDI fact sheet 2022 (Compiled by the researcher)

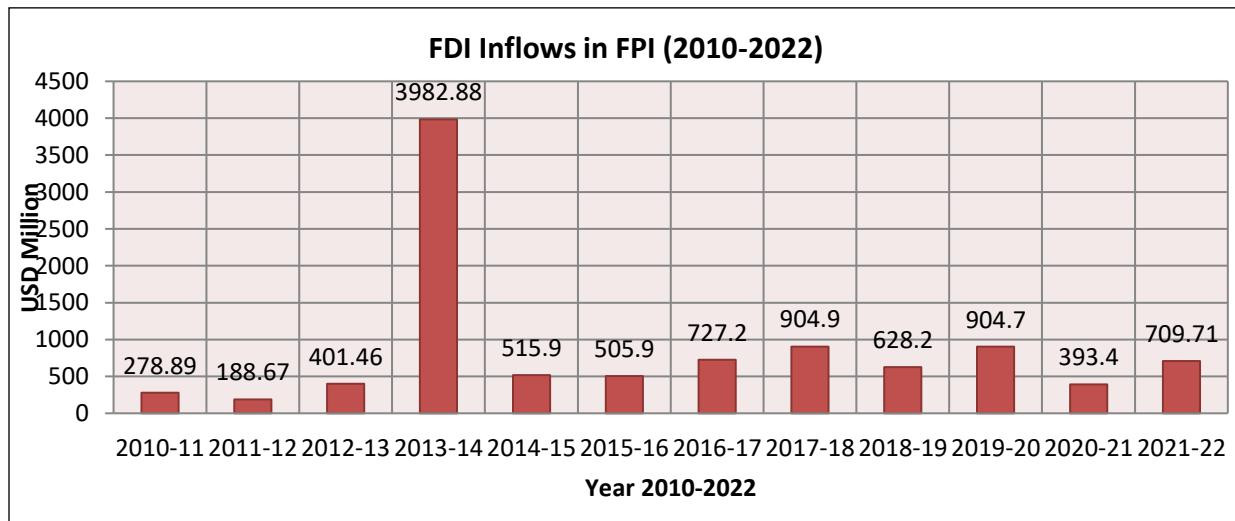
Total Annual FDI and FDI in FPI



Source: DIPP, Ministry of Commerce. FDI fact sheet 2022

Fig 6

Annual FDI Equity Inflows and FDI in FPI from 2001-2022



Source: DIPP, Ministry of Commerce. FDI fact sheet 2022

Fig 7

FDI in FPI from 2010-2022

From Table No 2 and Fig 7, it can be seen that the FDI Inflows in the food processing sector was the highest in the year 2014 with 3982.88 million USD and it has decreased tremendously in the following years and from 2022, it is showing an increasing scenario with 709 million USD when compared to 2021 with only 393 Million USD.

Table No. 3
Top Five Country-wise FDI Equity Inflows in Food Processing Sector (India) US \$ Million

Country	2014-15	2015-16	2016-17	2017-18	2018-19
Mauritius	85.83	85.99	86.9	177.11	135.65
Singapore	83.06	56.75	85.52	211.05	249.66
USA	116.11	76.03	189.83	46.14	72.68
Japan	31.9	19.19	34.83	77.39	66.01
Netherlands	1.41	24.33	4.27	61.55	30.05
Total	515.86	505.88	727.22	904.9	628.24

Source: Lok sabha unstarred question no. 4881, 23.07.2019

Effect of Policy Measures and Economic Reforms in Food Processing Industry in Kerala

Hypothesis 1

H₀: The effects of policy measures and economic reforms on Food Processing Industry in Kerala are not significant

H₁: The effects of policy measures and economic reforms on Food Processing Industry in Kerala are Medium / Good

Table No. 4
Effects of Policy Measures and Economic Reforms - t test with MPS

Variable	Mean	SD	t-value	p-value	MPS	Group
Inflow of FDI	4.183	0.706	34.347	<0.001**	83.66	High/Excellent
Contribution to GDP	4.017	0.620	33.624	<0.001**	80.34	High/Excellent
Export Competitiveness	2.895	0.743	2.889	0.004**	57.90	Medium/Good
Better Advanced Technology	3.295	0.936	6.462	<0.001**	65.90	Medium/Good
Increase in International Trade	3.038	0.926	0.843	0.400	60.76	Medium/Good
Strengthening of Market Regulations	2.905	0.835	2.337	0.020*	58.10	Medium/Good
Reduction in Import Tariff	2.526	0.928	10.465	<0.001**	50.52	Medium/Good
Removal of Quantitative Restrictions	2.479	0.692	15.436	<0.001**	49.58	Average
Food Subsidies	3.610	0.561	22.259	<0.001**	72.20	Medium/Good
Exploration of Untapped Resources	3.693	0.556	25.553	<0.001**	73.86	Medium/Good
Value Addition in Unprocessed Foods	4.179	0.552	43.767	<0.001**	83.58	High/Excellent
Subsidies for Fertilizers, Power, Irrigation	4.398	0.567	50.536	<0.001**	87.96	High/Excellent

Priority Sector	4.729	0.529	67.022	<0.001**	94.58	High/Excellent
Minimize Wastage	4.117	0.511	44.810	<0.001**	82.34	High/Excellent
Promote Agro Based Industries	4.293	0.664	39.877	<0.001**	85.86	High/Excellent
Competitive Environment	3.531	0.588	18.523	<0.001**	70.62	Medium/Good
Improve Productivity	4.207	0.631	39.189	<0.001**	84.14	High/Excellent
Attractive Investment Destination	3.333	0.613	11.148	<0.001**	66.66	Medium/Good
Adoption of Market Oriented Policies	3.221	0.794	5.713	<0.001**	64.42	Medium/Good
Overall Effect of Policy Measures and Economic Reforms	68.648	6.219	216.329	<0.001**	72.26	Medium/Good

Source: Primary Data. ** Significant at 1% level * Significant at 5% level

MPS=Mean Score*100/Maximum Possible Score

One-sample t-test with MPS (Mean Percentage Score) has been applied to test the hypothesis with respect to the effects of policy measures and economic reforms on Food Processing Industry in Kerala. Here the MPS (Mean Percentage Score) was found out based on the opinion of owners of the units related to food processing industry in Kerala by using a five point Likert Scale. While analyzing the effects of policy measures and economic reforms on food-processing industry in Kerala, majority of the MPS values are above the average level with MPS value more than 50.1 per cent, and the t- score is also significant at 1 per cent level (Table 4) except in one variable, i.e. Removal of Quantitative Restrictions with MPS value less than 50.1 per cent. In the case of Overall effects of policy measures and economic reforms on food-processing industry in Kerala, the MPS is at a Medium/ Good position (MPS=72.26 per cent). Hence the null hypothesis stating that the Effects of Policy Measures and Economic Reforms on Food Processing Industry in Kerala are not significant was rejected i.e. the Effects of Policy Measures and Economic Reforms on Food Processing Industry in Kerala are Medium /Good is accepted.

Hypothesis 2

H₀: The different demographic groups of respondents are having similar opinion on the effects of policy measures and economic reforms on Food Processing Industry in Kerala

H₁: The different demographic groups of respondents are having different opinion on the effects of policy measures and economic reforms on Food Processing Industry in Kerala

Table No. 5
ANOVA for Significant Difference among Demographic Profile of Owners with Overall Effects of Policy Measures and Economic Reforms

Demographic Variables		Mean	SD	One-way ANOVA	
				F-value	p-value
Sex	Male	68.695	6.343	0.199	0.655
	Female	68.261	5.149		
	Total	68.648	6.219		
Age	Below 30	69.652	5.228	1.403	0.232
	30-40	68.400	5.752		
	40-50	67.875	5.480		
	50-60	67.837	6.326		
	Above 60	69.384	6.741		
	Total	68.648	6.219		
Education	Below SSLC	68.000	5.292	0.654	0.659
	Plus Two	70.615	6.076		
	Graduate	68.111	6.572		
	Post Graduate	70.429	6.418		
	Technical	68.440	6.147		
	Others	68.831	6.199		
	Total	68.648	6.219		

Source: Primary Data

To test the hypothesis with respect to significant difference among demographic profile of owners with regard to the overall Effects of Policy Measures and Economic Reforms One-way ANOVA has been applied. Further to test the hypothesis the profile variables like age, sex, and education were considered. The analysis found that, the overall Effects of Policy Measures and Economic Reforms in the Food Processing sector of Kerala are similar to all owners of the food processing units in Kerala ($p > 0.05$) (Table No 5)

Hence, the null hypothesis stating that the different demographic groups of respondents are having similar opinion on the effects of policy measures and economic reforms on Food Processing Industry in Kerala are failed to reject (accepted).

Key initiatives taken by the Central Government

The Pradhan Mantri Kisan Sampada Yojana.

A cash outlay of US\$ 731.4 million (about Rs. 6,000 crore) has been allocated for the Pradhan Mantri Kisan Sampada (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) Yojana, a centrally funded program, for the years 2016 to 2020. From the farm gate to the retail outlet, this all-inclusive solution will lead to the development of contemporary infrastructure and effective supply chain management. It will encourage the growth of the nation's food processing industry. In addition, by minimizing agricultural waste, increasing processing levels, and promoting the export of processed goods, it will contribute to the farmers' ability to get a larger return on their investment. The PM Kisan SAMPADA Yojana will implement the following programs:

The Mega Food Parks Scheme

A contemporary food processing infrastructure based on a cluster concept is what the Mega Food Parks Scheme seeks to provide for the processing units. The plan aims to make it easier to construct a value chain with food processing at its core and the necessary forward and backward links.

Integrated Cold Chain and Infrastructure for Value Addition

The program calls for the development of end-to-end, uninterrupted cold chain facilities from the farm gate to the consumer in order to cut losses and increase the effectiveness of farmers' produce collecting, storage, transportation, and minimal processing. In order to qualify for the Scheme for Creation of Infrastructure for Agro Processing Clusters, produce must be both horticultural and non-horticultural. This program supports the creation of Backward and Forward Linkages Schemes.

Creation/ Expansion of Food Processing/ Preservation Capacities (Unit Scheme)

The major goal of the scheme is to build processing and preservation capacity and modernize/expand existing food processing units in order to increase processing levels, add value, and decrease waste. The processing tasks carried out by each unit include a variety of post-harvest procedures that enhance value and/or lengthen shelf life, requiring specialized facilities for the preservation of perishables. The use of current technology is meant to create a clear difference in terms of process efficiency as well as increasing the quality of the finished product, even though expansion of processing capacity is required to improve the level of processing and reduce wastage. It covers the installation of new units as well as the modernization and expansion of existing units.

Infrastructure for Agro-processing Clusters

The Scheme consists of two main parts: Core Infrastructure/Common Facilities (warehouses, cold storages, IQF, tetra pack, sorting, grading, etc.) and Basic Enabling Infrastructure (roads, water supply, electricity supply, drainage, ETP, etc.). Depending on the needs of food processing units that now exist outside of the cluster or that will be established in the cluster, different shared facilities may need to be created.

Formation of Forward and Backward Links

The Scheme has been put into effect since 2018. The Scheme's goal is to provide efficient and smooth backward and forward integration for the processed food industry by closing the supply chain's holes in terms of raw material accessibility and connections to the market. The program will make it possible for farmers to connect with processors and the market, assuring that their produce will fetch fair pricing.

Food Safety and Quality Assurance Infrastructure

For the country's food processing industry to thrive on all fronts and gain a competitive edge in the global food products market, quality and food safety are now top priorities. In addition, it is important to make sure that the high-quality food items produced and sold on the market adhere to the exacting standards set by the food safety regulator in the interest of consumer safety and public health. The following component of the program's financial assistance has been offered by the government while keeping in mind the aforementioned objectives:

Establishing or modernizing food testing laboratories: Establishing/improving quality control/laboratories for testing food, HACCP/ISO standards for food safety, and quality management systems

Human Resources and Institutions

It includes activities related to Research & Development, Promotional Activities, Skill Development and Strengthening of Institutions

Scheme Operation Greens

In accordance with the budget announcement for the 2018–19 fiscal year, MoFPI has been carrying out the central sector program "Operation Greens – A scheme for integrated development of Tomato, Onion, and Potato (TOP)" since November 2018 with a budgetary allocation of Rs. 500 crore. This program aims to support Farmer Producers Organizations (FPOs) and their capacity building, Primary/ Secondary Processing Facilities, Storage Infrastructure, Agri-Logistics, etc. To increase value addition in agricultural and related products as well as their exports, Operation Greens Scheme has been enlarged from TOP to Twenty-Two Perishable Products as of 2021.

PM Formalisation of Micro Food Processing Enterprises

The Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) Scheme, a centrally supported initiative, was introduced on June 29, 2020. With the aim of enhancing the current microenterprises in the unorganized sector of the food processing industry and formalizing the industry, this program is now being implemented in 35 states and union territories. Additionally, it includes US\$ 487.61 (about Rs. 40,000) in funding for operating capital as well as the purchase of minor tools for each Self Help Group (SHG) member engaged in food processing activities. A total of US\$ 24.74 million (Rs. 203 crore) has been provided to over 1 lakh SHG members.

One District One Product:

The One District One Product (ODOP) strategy is used by the PMFME Scheme to take advantage of economies of scale in the areas of input procurement, use of shared services, and product marketing. The ODOP product chosen is either a perishable agricultural product, a product made of cereal, or a food item that is produced in large quantities, Minor Forest Produce, or traditional food items in a district and its supporting industries. For capital investments, the PMFME Scheme supports currently operating individual micro units. For ODOP goods, new units would be supported for both individuals and organizations.

Production Linked Incentive Scheme for Food Processing Industry.

A financial outlay of US\$ 1.32 billion (Rs. 10,900 crore), has been designated for the central sector program, Production Linked Incentive Scheme for Food Processing Industry (PLISFPI) between 2021–2026. It aspires to support the creation of global food manufacturing leaders commensurate with India's endowment of natural resources and to promote Indian food product brands in international markets. The implementation of the plan would expand processing capacity by 2026–2027, producing processed foods worth US\$4.07 billion (Rs. 33,494 crore) and adding to almost 2.5 lakh employments.

Findings & Suggestions

Despite the pandemic and its negative economic effects, India continues to experience a boom in FDI inflows. While the nation offers a desirable consumer market for multinational corporations, as well as a well-regulated equity and expanding debt market, the recent increase in global attention is also due to India's emergence as a significant player in the global supply chain and important government initiatives like "Make-in-India" and "Atmanirbhar Bharat." MNCs are shifting away from merely importing and toward setting up assembly plants in India because of the Make-in-India program and the country's favorable economic environment. The government has also made a concerted effort to refocus policy from Make in India for India to Make in India for the World, an export-driven framework that encourages production through exports, maintains policy certainty, and facilitates easy implementation. In order to lessen their reliance on a single country, multinational corporations are expanding their supply chains

across multiple nations and reassessing how dependent they are on global trade and production. The other initiatives by the government and factors like attractive Indian markets, presence of skilled workforce, stable political environment have been favourable to the investors, inclining them towards investing in India. Cheap labour availability and policy reforms in India help the firms in cutting their financial costs, thereby making the Indian markets attractive. Mostly attractive market, skilled workforce and the political stability have influenced the decisions of their firms to enter and invest in India.

This could be an ideal time for the government to push for additional economic reforms for foreign banks, such as changes to the tax structure for domestic and foreign banks, relaxation of local governance structure for foreign banks operating in India taking into account foreign banks legal structure, and bringing parity between domestic and foreign banks, as global interest in India as one of the top destinations for FDI grows. By extending the scope of Priority Sector Lending, international banks will be able to connect with MNC clients on a deeper level, increasing their incentive to invest in India. It will also be beneficial to internationalize domestic debt markets by promoting reforms that make it possible for Indian bonds to be included in global indices.

Conclusion

The food processing industry in India, one of the largest in the world, is anticipated to reach US\$ 535 billion by 2025–2026 (Lal, 2023). Two global consumer megatrends are responsible for the rise in the preference for processed foods are the increasing demand for convenience and a growing emphasis on health and wellness. The Covid-19 pandemic has increased the acceptance of processed foods, while consumer desire for more morally and environmentally responsible products is rising as a result of social media and digital knowledge. The Indian economy is based primarily on agriculture and related industries. It is the primary source of income for more than half of Indians. Therefore, raising the agriculture sector's gross value addition will be a key lever in enhancing the socioeconomic situation of the nation. In the post-Covid-19 era, India has the ability to dominate the world's food supply and increase its export share. Quality and cost-effective export capabilities that fulfill international certification criteria are necessary for the sector to remain competitive. Due to its abundant agricultural resources, advantageous geographic location, close proximity to countries that import food, and vast network of food processing training, academic, and research facilities, India has a great deal of potential to become a global powerhouse in the export of processed foods. Recently announced ambitious scheme called Performance Linked Incentive scheme (PLI), received a great response and buoyed by the success of this scheme, the government expanded the PLI scheme to more sectors. India is taking a holistic approach to address other historical issues like labour reforms allowing more flexible labour related practices, power reforms and port-linked industrial cluster policy, and also to implement new digital technologies like IoT and AI and integrate them into physical operations. Other structural reforms within the agricultural sector will be enablers to attract FDI in the coming years. India will also need to concentrate on all three engines of its economy: Agriculture, Manufacturing and Services and that will enable the country to achieve the government's vision of a US\$5 trillion economy.

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