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India's food processing industry: Linkages and structure

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Abstract

The fast-growing Indian economy has changed the country's diet from cereal to fruits, vegetables, milk, fish, meat, and dairy products. Food Processing Industry has grown due to this consumption shift. Our country's key sector, agriculture, meets our basic needs, but it can't boost economic growth by itself. Industries are crucial to national development. Food processing is one of the key industries that will propel India's growth. The Indian food processing industry dominates production, consumption, export, and growth. Due to leading food processing companies like Nestle India Ltd., Cadbury's India Ltd., Kellogg's India, Hindustan Unilever Ltd., ITC-Agro, Godrej Foods, MTR Foods Ltd., etc., this industry has become India's growth engine. Global companies in India have also helped India's economy. It's encouraging to see that while the country's GDP grew from 3.5 percent in 2002-03 to 9 percent in 2006-07, the food processing industry grew from 7 percent to 13.1 percent. The Food Processing Industry has greatly benefited the Indian economy by increasing agricultural yield, productivity, job opportunities and living conditions for a large number of people, particularly in rural areas. When the Indian government created its industrial policy, it included food processing as a priority sector. With the 2002 Competition Act, food processing industry reforms began. Industrial reforms aim to make industry an asset. This Act was intended to accelerate the growth of the food processing sector, particularly through raw material use, as the growing demand for processed food has also contributed significantly to GDP growth over the last two decades. Both developed and developing nations depend on the food processing industry. High-value commodities replace traditional agriculture commodities as income and wages rise.

Keywords: Fast-growing, economy, industries, productivity, job opportunities and living conditions

Introduction

Industrial growth is of paramount importance to boost the growth of an economy. Only industrially developed countries are considered strong affluent nations in the world. There is no denying the fact that agriculture also constitutes the core of an economy and agrarian growth is not less important to meet the basic needs of life. But agriculture alone can't put an economy on a high growth trajectory. Agriculture compiled with industrial growth can ensure the robustness of an economy.

India though primarily an agrarian economy is engaged in industrial development to consolidate its economic position. Industrial growth is facilitated in India due to a number of conducive factors like rich natural resources, such as minerals, forests, fisheries etc. required to install industries. Commercial crops such as sugarcane, raw cotton, jute, tobacco, oil seeds are produced in abundance which can make a way for the setting up of agro based industries and there is no scarcity of power resources such as thermal plants, hydro power and atomic energy required to operationalize industries. Another favourable factor is the availability of cheap labour in abundance. Moreover, India being immensely populated, has a vast consumption market to create demand for its industrial products. Thus, numerous factors tend to contribute to ensure its fast industrial expansion. The theory of economic development tells us that the installation of food processing unit would create significant effects on the rural economy by increasing income generating capacity and employment opportunities for the people. Food Processing Industry plays an important role in meeting the demand for the sophisticated products by improving the quality of the produce. Most of the agricultural products: including milk, fresh fruits and vegetables require some processing before final use. Food processing helps in adding value to the raw agricultural produce.

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It has contributed to the development of the advanced industrial nations and India should also move in this direction in order to achieve higher stage of growth.

The term 'Industrial Structure' refers to the composition of the attributes which are relatively significant for an Industry. The structure of an industrial sector is generally defined in terms of size, financial requirements, resource ownership, technology and such other characteristics. Economic development and structural changes are highly associated with each other. Structural changes characterize not only changed economic development, but also effect sustained economic growth. Structural changes can be studied in respect of different outcomes like change in gross value added, capital investments, net income, number of persons engaged, wages etc. among different units of the industry. The Food Processing Industry in India plays a very vital role in the Economy. It provides not only job opportunities, but also acts as a source of market outlet and value addition for agricultural produce. The Ministry of Food Processing Industry (MOFPI) had decided to accord top priority to Food Processing Industry for industrial development. The decision to accord top priority was taken considering its potential contribution in generating jobs, foreign exchange, gross value added and capital formation. Food, being a basic necessity for everyone, has tremendous potential for investment. By choosing Food Processing sector as a priority sector in the formulation of its industrial policy, Indian Government has helped stimulate its growth in terms of investment. The utilization of local raw materials is being boosted. The structure of the Indian food processing sector is marked by duality. On the one hand, India has well organized large Food Industries based upon modern techniques which are capable of facing all the challenges posed by the dynamics of change. On the other hand, there are many labour intensive and small industries relying upon low-level technologies. These medium industries are bagged down by low level of investment, inefficient management, the problem of credit marketing and supply of raw material and labour.

The History of Food Processing

If the history of food processing is traced, it dates back to ancient Egypt, and the development is also symbolic of the history of the growth of the civilization and culture of mankind. Nowadays bread which involves the process of fermentation of yeast by using wheat flour as its raw material is baked globally. The manufacturing of beer started in Babylon and Egypt in the period from 3000 to 5000 BC. The foundation of modern Industry was laid by Germany by introducing machinery and technology of new method.

Nowadays processed foods that we see in grocery shops are modern processed foods and traditional foods, but their manufacturing technology, process control and packaging system have registered marvelous improvement in the last 30 years. Consequently, standardized and high quality products are getting manufactured. The most amazing development has come about in pre-cooked frozen foods, retort pouch foods and dried foods. Advances in processing technology, installation and packaging technology and materials and by avoiding unnecessary food additives and by grading and carrying out the inspection of process materials, mass production of excellent quality processed foods has been made possible in the last 30 years.

India's strength in food processing industry

Wide ranging activities such as agriculture, horticulture, plantation, animal husbandry and fishery fall within the purview of Food Processing sector. All those industries which use agricultural inputs for producing eatables also come under food processing sector. The Food Processing Industry is comprised of primary, secondary and tertiary food processors.

Primary food processors: Primary food industries process raw food materials. For instance, wheat into flour.

Secondary food processors: Secondary food industries make use of primary products to manufacture other foods. For instance, flour into bread.

Tertiary food processors: Tertiary food industries churn out ready-to-eat food such as frozen food, canned soup etc.

India ranks among the leading food producers of the world. Varied agroclimatic conditions and the availability of wide ranging raw materials apart from a huge untapped domestic customer base due to its massive population contribute to the growth of Food Processing Industry immensely. A great diversity conducive to round the year cultivation of crops also boost the Food Processing Industry – India being among the major food producers of the world, possess 17 per cent animals, 12 per cent plants and 10 per cent fish genetic resources of the world (KPMG 2009). These multiple advantages reinforced by other favourable conditions such as cheap labor stimulate industries. India is:

- Second highest fruit and vegetable producer in the world (134.5 million tonnes) though, cold storage facilities available are inadequate, accounting for 10 per cent of the produce only.
- Second highest producer of milk with insufficient cold storage capacity of 70,000 tonnes.
- Fifth largest producer of eggs.
- Sixth largest producer of fish with harvesting volumes of 5.2 million tonnes.

Review of literature

Hughes and Litz (1996) ^[2] tried to analyze that development of food processing industries is a fundamental device for facilitating growth in agriculture and in the economy in general. The spillover to the periphery economy from growth in core food processing was not small in terms of the percentage of total impacts that went to the periphery as opposed to the core. According to them, if food processing were to be used as a means of strengthening rural-urban linkages and facilitating growth in their periphery, feasibility analysis would be required to access potential output markets and firm profit.

Sen (2000) ^[6] in his study stated that India's Middle class segment will hold the key to success or failure of the processed food market in India. Of the country's total population of above one billion, the middle class segments accounts for about 350- 370 million. Though a majority of families in this particular segment have nonworking housewives who cannot afford or hire domestic help and prepare food in their own kitchens. The profit of the middle class is changing steadily and hiring the domestic help is becoming costlier. As a result of it, there is an expansion in demand for Ready-to eat Indian style foods.

Dev and Rao (2004) ^[1] sought to explore some advantages like high production of Raw materials, Cheap Labour, Manpower etc. for Food Processing Industry in the country. Their study also identified the significant Subsectors of Food Processing Industry. The study examined the opportunities and challenges in processing of Paddy, Mango, Vegetables, Oilseeds and Livestock products. The major recommendation in the study were exemption from sales tax and market cess for packing material industry, large scale publicity to promote processed foods, establishing food processing training centers, developing technology for tiny food processing units, establishment of courses for service and repair of food processing machinery and formation of expert consultant committee. However, there are many problems which hinder the growth of industry and it needs Government Support.

Mohanty (2006) ^[4] revealed that world trade in processed food has witnessed an impressive growth during the last few decades. In particular, world exports of processed food grew at the rate of 8.5% per annum during 1970-2003. In the Asia Pacific region, there has been a tremendous growth in the food processing industry. The share of processed products showed a clear upward trend throughout the 1990s, rising from 42% in 1990-91 to 48% of global Agricultural trade in 2001-2002.

Stadler (2006) ^[7] in her article illustrated that "India holds the second largest arable surface in the world and several agro-climatic zones. India has remarkable production advantage in agriculture, with the potential to cultivate a massive range of agricultural products. Because of its strong base in agriculture, it provides a large and varied raw material to food processing industries. The author further analyzed that however, the processing levels are low in the country." India, with a population of 1.08 billion, is a large and developing market for the food products. Monitoring the significance of cold chains, the author found that cold chain visibility solutions will endorse the quality maintenance in processed foods with accuracy and precision.

Murthy and Yogesh (2013) ^[5], in their paper perceived that although Indian food industry offers a very large prospect to each stake holder by rising agriculture produces and meeting efficiency in the country. The paper covers all chief segments of food processing such as fruits and vegetables, milk and milk products, meat and poultry fishers and sea food and alcoholic beverages, but somehow the growth of food processing companies has been sub optimal because of high-cost, low level of productivity, high wastage and lack of competitiveness of Indian food products in the global market. Apart from these, major challenges hampering growth of sector, constraints in raw material production, consumer educational on nutritional facts of processed food, low price elasticity for processed food products, need for distribution network and cold chain, backward- forward integration from farm to consumer etc.

Kadam and Chandanshiv (2015) ^[3] tried to explain the need of Food Processing Industry in India. The study reveals that Food Processing Industry is of enormous significance for India's development as fast growth in Food Processing sector and simultaneous improvement in the development of value chain are of great improvement to achieve the favorable terms of trade for Indian agriculture both in the domestic and international markets. The study found that the sectors of Food Processing Industry such as, dairy (16%),

grain built products (34%), bakery-based products (20%) and fish and meat products (14%) subsidizes to a foremost share of industry profits, apart from the manufacture of beverages.

Scope of the study

The wastage of valuable commodities can be reduced if the commodities are processed into value-added products and further distributed properly in different parts of the country, as there is a great scope of both domestic and international market in food processing sector. If the processed valuable commodities are evenly marketed from the place of abundance to the place of scarcity, not only will the consumers get the produce at a reasonable price but also the producer will not be forced to sell it at throw-away prices.

Objectives of the study

The specific objectives of the study are as follows

1. To observe the growth prospects of Food Processing Industry of India.
2. To analyze the performance of Food Processing Industry of India.
3. To examine the structure of Food Processing Industry of India.
4. To compute the Inter-Linkages between Food Processing Industry and Agriculture sector of India.
5. To draw some Conclusions and policy Implications from the Analysis.

Significance of the study

The development of food processing industry brings about the development of agriculture and horticulture on the one hand and the entire set of industries, linkages, investments, exports that meet the demand of the masses with raising incomes and employment on the other. The Food Processing Industry is expected to generate a lot of benefits to the economy. Food processing sector will help in raising agriculture production, expansion in the income and living standards of the people especially in the rural areas. It also enhances productivity, efficiency and creates lot of employment opportunities. This all has resulted in new opportunities for diversification in Food Processing sector. In short, the Food Processing Industry has been recognized as a thrust area for development.

Research methodology

To realize the above mentioned objectives, the secondary data on the Food Processing Industry has been used. For the purpose, the time series data on various parameters of the Food Processing Industry are compiled for the period 1988-89 to 2014-15 from various publications of Annual Survey of Industries (ASI) (GOI, Various Issues). The ASI presents the data of industrial sector by NIC Classification of Industries. The study period encompasses four different NIC Classifications, formulated in 1987, 1998, 2004 and 2008. The 15 sub-sectors have been selected for the study of FPI which are further merged into 7 sectors. Various statistical and econometric techniques employed in the study are: Compound Annual Growth Rate (CAGR), Percentage Method, Student's t-test, Linear Regression Analysis, Augmented Dickey Fuller Test, Granger Causality Test and Vector Autoregressive (VAR) analysis using time-series data on required variables.

Conclusion

Further, the chapter demonstrates the percentage share of various sectors of Food Processing Industry in terms of GVA, invested capital, fixed capital, working capital, net income, number of persons engaged, wages and salaries etc. in the total food processing sector. There are some sectors which show a moving percentage share in the total food processing sector during pre and post Competition Act period. In the case of Meat Industry, the percentage increase in employment went to 1.89 per cent in 2014-15 which was 0.33 per cent in 1988-89. The share of Grains & Cereals sector in employment generation has also changed with time. The share of Plantation sector also called as 'Primary Sector' has also come down during the post reform period as the share of this sector was 53.85 per cent in 1988-89 and it diminished to 43.22 per cent in 2014-15. This indicates that the structure of plantation sector has changed in respect of employment generation. Less number of persons are engaged in plantation sectors after the Competition Act. This may be due to the mechanization of Plantation sector and use of capital intensive and labour saving technology. In the case of Grains & Cereals and Plantation sector, it is observed that there is a significant impact of Competition Act on these sectors in terms of working capital. However, in case of other sectors (Meat, Fishery, Dairy and consumer industry) Competition Act measures have not significantly affected their working capital. Structure of Food Processing Industry is explained by using the percentage share of various sub-sectors of Food Processing Industry in terms of total fixed capital, invested capital, working capital, wages & salaries, number of persons engaged, GVA etc in Food Processing Industry. To further investigate the growth structure of this industry, compound annual growth rates have been computed for the period 1988-89 to 2014-15. Results show that there is a significant improvement in the growth of Food Processing Industry following the implementation of reforms by government through Competition Act, 2002 to promote the role of Food Processing sector in India's economic development. On the basis of the study, it could be seen that there is an overall moderate growth rate of fixed capital in the Food Processing Industry i.e. 0.16 per cent in post Competition Act period as opposed to the growth rate of 0.14 per cent in the pre Competition Act period. The study clearly indicates that there is growth in all the selected variables in the post Competition Act period. However, Dairy and Grains & Cereals are exceptions as they have shown a declining trend in the fixed capital after the Competition Act. The growth rate of the fixed capital in case of Fishery, Fruits & Vegetables, Consumer Industry and Plantation was 0.25 per cent, 0.21 per cent, 0.18 per cent and 0.16 per cent respectively in the pre Competition Act period. However, their growth rates have shrunk in the post Competition Act period.

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