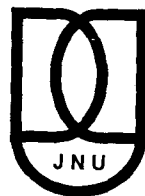


**STRUCTURAL AND SPATIAL REORGANISATION OF FOOD  
PROCESSING INDUSTRY IN INDIA:  
A COMPARATIVE ANALYSIS OF  
PRE AND POST LIBERALISATION PERIOD**

**Dissertation submitted in partial fulfillment of the requirement for the  
award of the degree of**

**MASTER OF PHILOSOPHY**

**MAHESH PRATAP SINGH**



**CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT  
SCHOOL OF SOCIAL SCIENCES  
JAWAHARLAL NEHRU UNIVERSITY  
NEW DELHI-110067  
2002**



जवाहरलाल नेहरू विश्वविद्यालय  
JAWAHARLAL NEHRU UNIVERSITY  
Centre for the Study of Regional Development  
School of Social Sciences  
New Delhi-110067

**CERTIFICATE**

I, Mahesh Pratap Singh, certify that the dissertation entitled “**STRUCTURAL AND SPATIAL REORGANISATION OF FOOD PROCESSING INDUSTRY IN INDIA: A COMPARATIVE ANALYSIS OF PRE AND POST LIBERALISATION PERIOD**” for the degree of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before the examiners for evaluation.

*Mahesh Pratap Singh*  
(MAHESH PRATAP SINGH)

Forwarded by

*Sucharita Sen*  
(DR. SUCHARITA SEN)  
SUPERVISOR

*S.K. Thorat*  
(PROF. S.K. THORAT)  
CHAIRPERSON

## **ACKNOWLEDGEMENTS**

*I owe my teacher and supervisor Dr. Sucharita Sen, a debt of gratitude by grace of whom this dissertation became a reality. Her invaluable suggestions and guidance with great patience during the research became a source of great inspiration for me to work hard inspite of hectic schedule.*

*My special thanks to the Centre For Studies in Regional Development for providing all necessary infrastucture required for completion of my work.*

*My heartfelt thanks to Verghese sir and Binod for helping me in preparing all the maps. I would also like to thank Manoj Bhatt sir, Rajeev, Abinash, Suneel, Ajit, Bhaskar and Jyoti for giving me valuable suggestions and help at all stages during completion of my dissertation.*

*I would like to specially thank Anoop and Sreoshi for giving me unconditional support and help whenever needed.*

*Last but not the least, I would like to show my gratitude to my family members especially my father without whose moral support and inspiration, this dissertation would have been a difficult task to accomplish.*

**MAHESH PRATAP SINGH**

# CONTENTS

Page No.

## CHAPTER I

### INTRODUCTION

1 - 21

- 1.1. Introduction
- 1.2. Selection of Food Processing Sector
- 1.3. Review of literature
- 1.4. Objectives of the study
- 1.5. Database
- 1.6. Methodology
- 1.7. Design of the study
- 1.8. Limitations of the study

## CHAPTER II

### POLICY PERSPECTIVES IN THE FOOD PROCESSING INDUSTRY

22 - 35

#### IN THE NEW ECONOMIC REGIME

- 2.1 Integration of Indian Economy with World Economy
  - 2.1.1. Foreign trade in goods and services
  - 2.1.2. Tariff Levels
  - 2.1.3. Extent of Foreign Investment
  - 2.1.4. Extent of state control on capital movements
- 2.2. Nature of State Intervention
  - 2.2.1. Regulatory Measures
  - 2.2.2. Compulsory Legislation
  - 2.2.3. Voluntary Standards
  - 2.2.4. Promotional Measures
  - 2.2.5. Foreign Industrial Approval
  - 2.2.6. Export Processing Zones/100% Export Oriented Units
  - 2.2.7. Food Parks

- 2.2.8. Agricultural Export Zones
- 2.2.9. Imports and Exports
- 2.2.10. Taxation Environment
- 2.3. Summing Up

### **CHAPTER III**

#### **TRENDS OF GROWTH AND STRUCTURAL CHANGE IN THE FOOD PROCESSING**

##### **INDUSTRY : A MACRO OVERVIEW**

**36 - 54**

- 3.1. Introduction
- 3.2. Food Processing Industry in Organized Sector
- 3.3. Employment Generation
- 3.4. Food processing Industry in the unorganized sector
- 3.5. Summing Up

### **CHAPTER IV**

#### **SPATIAL REORGANISATION OF FOOD PROCESSING INDUSTRY:**

##### **A COMPARITIVE ANALYSIS OF PRE AND POST REFORM PERIOD**

**55 - 77**

- 4.1. Introduction
- 4.2. Importance of Food Processing Industry in the industrial set up in the states
- 4.3. Distribution of Food Processing Industry
- 4.4. Structure of Food Processing Industry
- 4.5. Productivity and efficiency
- 4.6. Composition of Food Processing Industry
- 4.7. Changes In The Distribution And Concentration Of Food Processing Industry
- 4.8. Summing Up

**CHAPTER V**

**CONCLUSION**

**78 - 83**

**5.1. Summary of findings and Conclusion**

**APPENDICES**

**84 - 92**

**APPENDIX I (A)**

**APPENDIX I (B)**

**APPENDIX II**

**APPENDIX III**

**APPENDIX IV (A)**

**APPENDIX IV (B)**

**APPENDIX IV ( C )**

**APPENDIX V (A)**

**APPENDIX V (B)**

**BIBLIOGRAPHY**

**93 - 94**

## **LIST OF MAPS**

1. India: Per Capita Fixed Capital in Food Processing Industry 1990-91 and 1997-98.
2. India: Per Capita Value of Output in Food Processing Industry 1990-91 and 1997-98.

## **LIST OF FIGURES**

### **CHAPTER II**

- 2.1. India: Foreign Trade
- 2.2. India: Tariff Levels
- 2.3. India: Foreign Investment

### **CHAPTER III**

- 3.1. Performance of Food Processing Industry-Annual Growth Rates
- 3.2. Efficiency Parameters of Food Processing Industry-Annual Growth Rates
- 3.3. Trends in Fixed Capital Per Factory in Food Processing Industry
- 3.4. Trends in Workers Per Factory in Food Processing Industry
- 3.5. Difference Between Number of Employees and Workers as Percentage of Workers in Food Processing Industry:  
Pre Reform Period
- 3.6. Difference Between Number of Employees and Workers as Percentage of Workers in Food Processing Industry:  
Post-Reform Period

### **CHAPTER IV**

- 4.1. Composition of Food Processing Industry: Factories and Fixed Capital
- 4.2. Composition of Food Processing Industry: Employment and Output

## **LIST OF TABLES**

### **CHAPTER II**

- 2.1. Food Parks

### **CHAPTER III**

- 3.1. Share of Food Processing Industries in All Industries
- 3.2. Employment Elasticities in the Organized Food Processing Industry.
- 3.3. Trend Growth Rates in Workers, Fixed capital and Output in Food Processing Industry.
- 3.4. Trend Growth Rates in Capital and Labour Productivity and Capital Intensity in Food Processing Industry.
- 3.5. Share of Unorganized Food Processing Industry in total Food Processing Industry.
- 3.6. Employees Per Enterprise in Unorganized Food Processing Sector.
- 3.7. Growth Rate in the Enterprises and Employees in the Unorganized Food Processing Industry.
- 3.8. Growth in the Productivity in the Unorganized Food Processing Industry.

#### **CHAPTER IV**

- 4.1 Share of Food Processing Industry in All Industries in the State.
- 4.2. Distribution of Food Processing Industry in States.
- 4.3. Capital Intensity in Organized Food Processing Industry in the States.
- 4.4 Coefficient of Variation of Capital Intensity in Food Processing Industry in the States.
  
- 4.5 Correlation Coefficients for Food Processing Industry.
- 4.6. Productivity in Organized Food Processing Industry in the States.
- 4.7. Coefficient of Variation of Capital and Labour Productivity in Food Processing Industry in the States.
- 4.8. Theil's Index for Fixed Capital in the States.
- 4.9 Location Quotient of Fixed Capital in Food Processing Industry



## CHAPTER 1

### INTRODUCTION

#### **1.1. Introduction**

Over the last decade a new economic paradigm has come into being in the Indian economy; which amounts to a historical watershed. In July 1991 India underwent the Structural Adjustment Programme (SAP), which were marked by the three features of liberalization, privatization and globalization. Among the many features associated with this new paradigm, the first and foremost is the formation of a global economy as the operative economic unit of today (Chesnais, 1994). By the global economy we mean an economy in which, the strategically dominant activities function as a unit at the global level in real or in potentially real time. This is the case of capital markets, which are integrated worldwide. The technology, information and management of the multinational and transnational companies, and of their auxilliary branches, are so globally articulated as are increasingly industrial production, advanced services and markets through network of companies or exchange mechanism.

Other new feature of this new paradigm is the liberal economy, which means the relaxing of government controls and let the economy function with the market mechanism of demand and supply. Though the genesis of transition towards the liberal economy were visible in some measures during mid-eighties in the Indian economy but the more permanent structural reforms were undertaken in the decade of nineties, a process that is still ongoing. Several interpretations have been offered to explain the paradigm Change in the economic framework. The immediate precipitant of the policy

change was of course the balance of payment crisis, emanating from both internal fiscal profligacy and external developments in the Persian Gulf (Nayyar 1994). In response to the crisis situation, the government set in motion, a process of macro economic stabilization combined with fiscal adjustment and structural reform (Nayyar 1994). It needs to be said that this strategy was nothing new, for it broadly replicates the response of several developing countries in Latin America and Sub-Saharan Africa to debt crisis in 1980's, which was guided by International Monetary Fund Programme of stabilization and World Bank program of Structural Adjustment. The programme of stabilization was concerned with demand side and sought to reduce the level of aggregate demand in the economy. The objective was to pre-empt a balance of payment situation and to bring down the rate of inflation in the short run. Whereas the Structural Adjustment Programme based on reforms advocated by the multilateral financial situation were concerned with the supply side. The objective was to raise the growth of output in the medium term. The Structural Reform sought to shift resources:

- A) From the non-traded goods sector to the traded goods sector and within the latter from import competing activities to export activities;
- B) From the government sector to the private sector. Apart from resource allocation structural reform tried to improve resource utilization by
  - (i) Increasing the degree of openness of the economy and
  - (ii) By changing the structure of institutions and nature of incentives, which would reduce the role of state intervention and would make the development process to rely more on market, dismantle controls to

rely more on the market determined prices and wind down the public sector to rely more on the private sector.

In conformity with this objective which later was reinforced by multilateral trade regime and coming into force of the World Trade Organization, the government has embarked on the wide-ranging reform of the policy regime. Trade policy reform has eliminated most of the quantitative restrictions on imports except for some consumer goods, progressive reduction of tariff levels at par with international level, dismantling of negative list. The exchange policy was modified to introduce the partial convertibility of rupee. The desire to increase the degree of openness of economy extended beyond trade flows to capital and technological flows. The liberalization of the regimes for foreign investment and foreign technology were not only intended to expose domestic firms to international competition further but also to stimulate the domestic production. Industrial policy reforms which have removed barriers to the entry of new firms and limits on the growth in the size of the existing firms, investment in the erstwhile reserve areas, has been aimed to cut out state intervention in investment decisions. This process was sought to be reinforced by deregulation in the financial sector of the economy, so that the allocation and the utilization of investible resources is left to the market. Public sector reforms have progressively been introduced so as to redefine its role from an important player in the socialistic set-up to the limited role of the facilitator for private players in the liberalized economy. Similarly the labour reforms, agriculture sector reforms, power sector reforms etc are all intended to strengthen the market mechanism and make it competitive at the global level.

More than one decade of functioning of whole plethora of structural adjustment, first generation, second-generation reforms, liberalization and globalization process, has attempted to redefine the economic, political and social space. The free market players have now come to dominate the economic and political space, which for long has been dominated by the state. Central government has been the deciding factor in the economic development, as local and state governments depend on their part, in administrative and financial terms, on the central government, and have little power and resources than central government for controlling free market agents in the present era of reforms. Moreover, the macro economic framework in which these local and state governments are functioning have induced in them a competition to attract the investment from private players—both domestic & foreign.

From the economic point of view, the territorial context however paradoxical it might seem has become a decisive element in generating competitiveness in economic units in a globalized economy. It is because companies depend, to a large extent, on their operative environment to be competitive and also the liberalization of terms of trade particularly after setting up of World Trade Organization considerably limits the action of the national government in favour of the local companies. It is now the state governments that, operating in a regime increasingly marked with greater competition, can most effectively contribute to improving productive and competitive conditions. For indeed the competitiveness of companies in the new economy depends not so much on tariff barriers or political favours as on the generation of positive conditions for productivity within the area under which they operate. This includes the adequate technological infrastructure, a communication system ensuring that the territory is connected with global

the territory is connected with global flows of people, information and goods, sustainable market creating sufficient demand, market friendly political and social set up and above all existence of human resources capable of production and management in the new techno-economic system. With the functioning of the liberalized and globalized economy the link between private companies and state governments, in the framework of global relations between central government and international institutions, has become fundamental institutional and organizational foundation for the developmental process.

The development strategy of the country through the fifty years of planning, with reduction of regional disparity as one of its stated objectives, have not been able to bridge the difference between the more forward states and the backward regions of the country. The various economic platforms arising out of this disparity have not been able to ensure level playing field to different regions in this neo-liberal economy leaving the underdeveloped states particularly disadvantageous. This requires us to investigate and focus on whether the liberalized economy has led to a change in the regional structure of the country especially in terms of location and concentration of invested capital in the industrial sector. This study is an attempt towards this end, and takes food-processing industry as a case in point.

## **1.2. Selection of Food Processing Sector**

India is predominantly an agricultural economy and is likely to remain for some years to come. Hence management of agricultural economy is fundamental to India's prosperity. Activities related to food production and processing account for about 26% of India's G.D.P. and more than 60% of its employment. Therefore the developments that take place in the value-addition to food-products is likely to have a considerable effect throughout

the economy. As the different kinds of revolutions have shown that no other area of the economy has greater potential for catalyzing India's development. Yet no other area is more fraught with challenges. Currently India's agricultural growth lags far behind industry and services. After recording negative growth rates during 1997-98 and 2000-2001, agriculture has emerged as one of the most challenging sector in the process of reform. This challenge stems from the imbalance featuring the Indian agricultural sector in terms of the share of its income to GDP and the share of population it supports. The existing empirical evidence reveals that the agriculture sector of India is reaching the saturation point in terms of creation of additional employment opportunities. Increasing demand for the agricultural products and creation of employment opportunity through the rural industries would provide a viable answer to the challenge faced by our agricultural sector. Both these objectives could well be fulfilled by the food-processing industries, the importance of which also lies in its possible role of strengthening rural - urban linkages.

Modernizing the food sector can prove central to future development, acting as locomotive of growth. Food-processing industry assumes significant role in the modernization of the food chain. This industry, which is now regarded as the "Sunrise Industry", has become very important particularly in the new policy environment. The enormous significance it assumes because of vital linkages and synergies, that it promotes between the two pillars of the economy namely industrial and agriculture. By integrating these two sectors it establishes number of backward and forward linkages, which creates multiplier effects for the economy to at higher growth rate.

For the agriculture sector it not only provides a way for modernizing it but also helps it in becoming a propeller of growth in the rural areas by

changes, creates various linkages between producer and consumer, helps in minimizing wastage etc. Food processing has one of the highest economic multiplier of any industry. In India the multiplier for food industry is 2.4, which is much higher than that of industries like power and telecom. The multiplier of 2.4 means that for every 100 million rupees of new revenue generated in food-processing, revenue of 240 million rupees will be generated elsewhere in the economy. The reason for this is that this industry directly or indirectly triggers growth in a number of other industries, such as transport, refrigeration, pesticides and fertilizers. (Report by Mckinsey and Company, 1997). Despite all these recognizable importance of food-processing industry, this industry did not get priority and was not included in one of the thrust areas in the previous development models. However, with the change in the economic paradigm, the potential of this industry is coming into focus. The growing perception of it's importance as a means of increasing food availability on the one hand and as a high dynamic multiplier growth industry for the whole economy on the other, was officially acknowledged with the creation of the 'Ministry Of Food Processing' in 1988. Since then there have been conscious efforts to develop this sector on a priority basis. But the development of this industry, in the new economic scenario as the vehicle of growth of different regions has still to be analyzed. The Food Processing Industry serves as an suitable case to analyze impact of new economic reforms on regional structure of Indian economy as much of the growth of this industry has come in the post 1991 regime. Also the food-processing sector represents the best link between agriculture and industry, rural and urban areas, traditional and modern economy. Whether this industry has been able to serve its objectives of creation of employment opportunity and

bridging the gap between the developed & less developed regions in the new economic regime is the prime focus of our analysis.

### **1.3. Review of literature**

The impact of liberalization on general economic performance has been debated much, but the impact of Food Processing Sector with special reference to regional development have not got due attention and consideration. Most of the studies on Food Processing Sector either concentrated on investment opportunities or on the linkages with the agriculture. By covering wide aspects of food processing industries the present studies has been divided into four subtitles according to available literature.

#### **1.3.1. Employment generation and productivity in manufacturing sector**

Chadha and Sahu<sup>1</sup> (2002) in their study have presented a comprehensive analysis of the rural employment in the post reform period. The study examines the pace and pattern of employment growth in the nineties and compares it with that of eighties, based on national sample survey data. According to the study informal sector is undergoing structural transformation, as it is experiencing expansion and contraction pari passu in the rural economy. Expansion is visible in the sectors like construction, retail trade, transport storage and communication while contraction is visible in the field crop production, livestock, fishing, and personal services. The study also reports the decrease in public sector real investment as a proportion to total investment since eighties. Although public sector's real investment in

---

<sup>1</sup>Chadha, G.k. and Sahu, P.P. (2002): "Post Reform Set Backs in Rural Employment: Issues That Need Further Scrutiny;" Economic and Political Weekly; May 25; PP 1998-2026.



investment in agriculture has been declining since eighties, the decline in non-agriculture sector occurred during nineties.

Unni, Lalitha and Rani<sup>2</sup> (2001) have examined the trends in growth and efficiency in the utilization of resources in the Indian manufacturing industry before and after the introduction of economic reforms. They have used the comparative analysis of all India figures with Gujarat, one of the most industrially developed states of the country. The study has shown that both the organized and unorganized sectors in Gujarat are doing better than the all India average in terms of growth of value added. Growth in the manufacturing sector in Gujarat was also more than average of all India growth after the reforms were introduced. According to the study Gujarat's strategy of physical infrastructure development, leading to industrialization has been the main reason for the growth of state's manufacturing sector.

Goldar<sup>3</sup>(2000) has analyzed the growth of employment in the organized manufacturing sector during the reform period, which he attributes to the liberalization of industrial and trade policies. His study reveals that there has been increase in employment in small and medium sized factories but not in the large establishments. He observes that the entire increase in the employment in organized manufacturing in the 1990's was accounted by private sector factories and was not specific to any industry group but across the board in all industries.

Nagaraj<sup>4</sup> (2000) in his paper has examined the growth of the employment in small sized factories. He argues that growth in small sized factories should also be reflected in the unorganized manufacturing sector.

---

<sup>2</sup> Unni, Jeemol. Lalitha, N. and Rani Uma (2001); "Economic Reforms and Productivity Trends In Indian manufacturing"; Economic and Political Weekly, October 13, PP 3914-3922.

<sup>3</sup> Goldar, B. N (2000): "Employment Growth in Organized Manufacturing in India", Economic and Political Weekly, Vol. 35. No. 14, PP. 1191-1195.

<sup>4</sup> Nagaraj, R. (2000): "Organized Manufacturing Employment", Economic and Political Weekly, Vol. 35. No. 38, PP-3445-3448.

According to him the growth in the small sized organized sector spilling over to the unorganized sector need not be true in the context of reforms. Because the scale of production in the unorganized sector may not be sufficiently equipped to handle the pressures of competition under liberal industrial and trade policies.

Goldar and Mitra<sup>5</sup> (1999) in their study have emphasized on the growth and productivity pattern in the unorganized manufacturing sector. They estimated the Total Factor Productivity growth for unorganized manufacturing using the 45<sup>th</sup> round (1989-90) and 51<sup>st</sup> round (1994-95) NSS surveys. The estimates were made separately for the Own Account Manufacturing Enterprises (OAME) and the Non Directory Manufacturing Enterprises (NDME) in rural and urban areas. The results show that at the aggregate level there was no growth in the Total Factor Productivity either in OAME or NDME in rural areas. In the urban areas OAME recorded a modest growth rate of 1.2 percent per annum between 1989-90 and 1994-95 and the NDME showed a decline in the productivity during the same period. They also found out that at the all industry level labour productivity grew only in OAME in urban areas and in NDME in the rural areas.

Chandrasekhar<sup>6</sup> (1996) in his attempt to explain the post reform industrial growth has done a close scrutiny of the estimates of capital formation in the post reform period. The study has highlighted that no causal linkages can be established between liberalization, private investment and industrial growth. According to the study what liberalization has done is to unleash a consumption boom, fuelled by a surge in consumer credit that has

---

5. Goldar, B. N and Arup Mitra (1999): "Productivity Growth in Informal Manufacturing Sector in India". Presented at the Workshop on "Measurement of Productivity in India", sponsored by the Deptt. of Statistics, GOI, July, N. Delhi.

6 Chandrasekhar, C. P. (1996); "Explaining Post Reform Industrial Growth"; Economic and Political Weekly, Special Number, September, PP 2537-2545.

accompanied financial sector reform. Such a boom not only increases the balance of payment vulnerability, but also offers to markets, only a once for all boost, that would exhaust itself unless some other stimuli ensure expansion of the market for the manufacturers.

Ghose<sup>7</sup> (1994) in his study has attempted to explain the reasons for the sharp decline the employment elasticities of organized sector during eighties. Using the Annual Survey of Industry data the study examined the empirical evidence in support of the phenomena. According to him the decline is explained essentially by the fact that there was a strong tendency for capital intensity to rise and this tendency is largely explained by the rising relative prices of labour. The major finding of the study is that the tendency for the relative prices of labour to rise was generated by both macroeconomic and labour market policies pursued by the government.

Nagraj<sup>8</sup> (1994) in his study has attempted to examine the employment and wage structure in the manufacturing sector. The study argued that decline in registered manufacturing employment that took place in eighties reflected the substitution of capital for labour, as the wage rate reportedly increased because of growing rigidities in the labour market. The study, brought out that, earnings per worker increased at the faster rate than per capita income growth mainly due to increase in the number of man days per worker. Findings of the study also suggested that there has been a decline in the power of the organized labour.

---

7. Ghose, Ajit K. (1994); "Employment in Organized Manufacturing in India"; *The Indian Journal of Labour Economics*, Vol. 37; No.2, PP 143-161.

8 Nagraj, R. (1994); "Employment and Wages in Manufacturing Industries: Trends, Hypothesis and Evidence"; *Economic and Political Weekly*, January 22, PP 177-186.

### **1.3.2. Economic reforms and liberalization**

Nayar<sup>9</sup> (2001) has examined the extent of external openness of Indian economy. The study traced the nature of India's economic policy since 1970 and attempted to find out the historical nature of economy's external openness. The external openness has been measured using four indicators they are (1) the proportion of country's gross domestic product (GDP) that is involved in the international trade of goods and services. (2) Level of tariffs to measure the degree of protection offered to local producers. (3) Transnationalisation of production and exchange of foreign capital. (4) Extent of state control on capital movements. The study concluded that there has been significant advance in the India's external integration but it still lacks far behind some of the fast developing countries of South East Asia and Latin America.

Chesnais<sup>10</sup> (1994) in his attempt to address to the evolution of global economy has emphasized that while global capital is not functioning within the confines of any country, Transnationalisation of labour is not taking place with the same vigour. According to study one of the most important feature of the global economy is it's inclusive and exclusive nature that is, it includes anything that creates value and is valued in the world. It excludes what is devalued or is undervalued. Study suggests that to take advantage of new forces unleashed by global economy local players have to increase their bargaining power by strengthening democratic set up and evolving new production systems in tune with global requirement.

---

9 Nayar, Baldev Raj. (2001); "Opening and Openness of Indian Economy"; Economic and Political Weekly, September 15, PP 3529-3537.

10 Chesnais, Arnhem. (1994); "Global Economy and Transnationalisation of Capital"; American Economic Association, Supplement to American Economic Review, September PP 15-26.

Nayyar<sup>11</sup> (1993) in his study has explored the process of economic reforms in India. He has addressed the macroeconomic framework, which has led to the initiation of the process of stabilization and structural adjustment. According to the study the process of reforms, which started through the stabilization and structural, has been extended to all the sectors of economy, the results of which will be clearly visible in the years to come. The study concludes that, present agenda of reforms does not address the development of human resources and agrarian economy and these are one of the most important determinants of success of any policy measures.

Subramaniam<sup>12</sup> (1993) used general equilibrium model to address several key issue in the debate of agriculture policy reform. According to the study trade liberalization is generally expected to raise the efficiency but if resources are not perfectly mobile then the liberalization may fail to raise the out put in short and medium run. So the major concern of policy makers in the era of liberalization should be to increase the mobility of resources. He argued that reduction in the protection of industrial sector, which has been heavily protected in the pre reform period, would benefit agriculture sector more then compared to trade liberalization.

### **1.3.3. Opportunities and prospects in food processing sector**

Dharmrajan<sup>13</sup> (2002) in his study has attempted to discuss the opportunities opened up by the new industrial and agricultural policies. The focus of the policies to develop the food processing industry on the priority basis has been highlighted in his study. The study presents a strong case for developing more food parks on the basis of cluster approach, which will not

---

11. Nayyar, Deepak. (1993); "Economic Reforms in India: A Critical Assessment"; International Labour Organization, Asian Regional team for Employment promotion, New Delhi.

12. Subramaniam, Shankar. (1993); "Agriculture trade Liberalization and India's Economic Development"; Organization for Economic cooperation and Development, London, PP 129-146.

13. Dharmrajan, k. (2002); "Food processing Lures Massive Investments"; South Asian Agribusiness and Horticulture, February-March, PP 22-23.

only help to reap the benefits of economies of scale but will also strengthen the backward and forward linkages.

Biswas<sup>14</sup> (2000) in his book has analyzed the opportunities and prospects; the process of liberalization has opened up for the Food Processing Industry. He argued that Food Processing Industry which is mainly consumer oriented is undergoing major structural change. The coming of large integrated companies, investment by multinational food chains etc. not only provides a mechanism to increase the efficiency of the sector but also the opportunities to tap the growing demand of the branded products. According to him the transition from protected, inward looking economy to export oriented and outward looking economy provides a great opportunity to strengthen the linkages, which in turn will modernize the agriculture. He concludes that large country like India cannot grow and develop in isolation and competition and trade are essential to improve the quality and the quantity and to consolidate the inherent advantage.

Mckinsey and Company<sup>15</sup> (1997) in his study has attempted to present the case of modernizing the food chain right from the stage of agricultural production to the final stage of consumption. According to the study the multiplier of 2.4 of the Food Processing Industry is one of the highest in the manufacturing sector and has the capability of propelling the whole economy. The study highlights that the increased investment in the sector will not only benefit to make product cheaper but will also create new employment opportunities in the rural economy. The study argues for the strengthening of the infrastructure base and increased capital investment in plant and machinery to modernize this sector.

---

14. Biswas, N. Guha. (2000); "Impact of Liberalization on Food Processing Sector in India"; Minerva Press, New Delhi.

15. Mckinsey & Company. (1997); Food and Agriculture Integrated Development: Modernizing the Food Chain.

Price water house association<sup>16</sup> (1995) in his report presented a comprehensive view of the food processing industry and analyzed the scope and potential of different component of the food processing industry. The report highlighted that low cost production would form the base for capturing the export market in future. Report argued that decontrol of the economy, which has offered scope for food processing industry to explore the new products, and market will help the food processing industry to increase its efficiency and economy in general.

Mukherjee<sup>17</sup> (1990) dealt with the integrating role of the food processing industry between rural and urban economy she presented the increasing activity of processing the food products in the rural economy. The policies prepared by west Bengal and their emphasis on modernizing food-processing industry has been analyzed in this study. The study also presents the projected nature of demand of the food products in 2005 on the basis of demand in 1995.

#### **1.3.4. Dynamics of the food processing sector**

Panini<sup>18</sup> (1999) in his study tried to present the impact of globalization at cultural level and change in agribusiness in Karnataka. He found that globalization polices with respect to agriculture have witnessed tremendous change after 1991. He found that traditional subsistence agriculture has changed to more technology and business oriented activity. The development of floriculture in Karnataka according to him is the example of transformation of agriculture. Its progress, is now determined more by the export demand

---

<sup>16</sup> Price Water House Association. (1995); Food Processing Industries in India: Investment Opportunities.

<sup>17</sup> Mukherjee, Durjati. (1990); "Food Processing Industry: Can India Play a Leading Role"; Khadi Gromodyog, August, PP 439-443.

<sup>18</sup> Panini, M. N. (1999); "Trends in Cultural Globalization: From Agriculture to Agribusiness in Karnataka"; Economic and Political Weekly, July 31, PP 2168-2173

then the internal consumption. He concludes that farmers of the Karnataka are now more optimistic about the recent opportunities.

Sareen<sup>19</sup> (1998) in his study tried to bring out the infrastructure bottlenecks in Food Processing Industry, which has been one of the most important debilitating factors in the development of this sector. According to the study, lack of infrastructure has been one of the major causes of high degree of wastage in the Food Processing Industry. The study argues for increased government support for improvement in the infrastructure. Private sector is willing to invest provided it gets support from government agencies.

Singh<sup>20</sup> (1997) has examined the entrepreneurship in agriculture and primary processing activities in Punjab with respect to paddy milling and oilseed milling. In his paper he looked at these activities as possible entry point for industrial entrepreneurship and tried to explore the nature, pattern and problems of entrepreneurship in these industries. He has also examined the pattern of investment of agricultural surplus and attempts to find the trading and merchant castes. These castes have earned considerable income in the food grain trade in the wake of green revolution. He found that most of the present owners of the units are predominantly commissioned agent who made their fortune from food grain trade. He concludes that green revolution in the Punjab have led to "cow dung capitalism" wherein gentlemen farmers operate in the intermediate zone of agriculture and industry.

Baghel and Pendse<sup>21</sup> (1996) studied the role of agro-based industries in the industrial development of Madhya Pradesh. Their study examined the development of agro-based industries between 1973-74 and 1991-92 using

---

<sup>19</sup> Sareen, K. P. (1998); "Infrastructure for Food Processing Industries: A Growing Need"; Saket Food Processing handbook, Saket Projects Ltd. Publication, Ahmedabad, PP 195-200

<sup>20</sup> Singh, Sukhpal. (1997); "Aspects of Entrepreneurship in primary Food Processing Industries in Punjab"; The Journal of Entrepreneurship, Sage Publications, New Delhi. PP 223-231.

<sup>21</sup> Baghel, L. M .S and Pendse, N. G. (1996); "Role of Agro based Industries in Industrial Development in the State Madhya Pradesh"; Khadi Gromodyog, July, PP 474-482.



the data from the annual survey of industries and industrial compendium. The study categorized the districts in to advanced and backward and then analyzed the development of these districts in terms of employment, investment occurred in small-scale industries. The study found that small-scale industry has considerable presence in backward districts and contribute significantly in the industrial setup of these districts.

Sinha<sup>22</sup> (1995) presented a brief overview of the Food Processing Industry and then examined the linkages between agricultural production and development Food Processing Industry. By using data from Ministry Of Food Processing Industry he traced the growth of primary Food Processing Industry. The main bottlenecks according to him in the development of Food Processing Industry are the absence of strong market industry linkages.

Hicks<sup>23</sup> (1993) in his study has attempted to identify the specific policies with respect to agro processing industries. The study observes the continuous promotion given to develop this industry. However the attempt to protect and reserve the industry in small-scale sector has not helped the industry to achieve high level of efficiency and competitiveness, report observes. The study advocates the strategy of promoting the industry by strengthening the infrastructure and market of food products.

Desai and Namboodari<sup>24</sup> (1992) have analyzed the development and financial performance of the four food processing industries, that is food grains, milling, edible oilseeds processing, sugarcane processing and milk processing. The performance of these industries has been analyzed with special reference to working capital management. They attempted to

---

<sup>22</sup> Sinha, A. K. (1995); "Food Processing Industry: An Overview"; Yojna, March, PP 127-128

<sup>23</sup> Hicks, P. A. (1993); "Policies And Strategies for Agro-Industries in the Pacific Region"; Part 2, Food and Agriculture Organization of the United Nations, RAPA Publication, Bangkok, Thailand, PP 46-78.

<sup>24</sup> Desai, B. M. and Namboodari, N. V (1992); "Development of Food Processing Industries"; Economic and Political Weekly, March 28, PP A27-A42.

prioritize these industries for development base on four performance criteria. The criteria used are (a) potential for resource used (b) efficiency in resource (c) efficiency in liquidity and solvency management (d) liquidity and solvency cushion management. Based on their findings they suggested that order of priority among these four food-processing industries should be food grains milling, edible oilseeds processing, sugar factories and dairy products.

Sinha and Sinha<sup>25</sup> (1992) in their study pertaining to the dynamics of small scale fruit and vegetable processing industry has concentrated mainly on the resource use and nature of interaction among the small scale industry themselves. The study found that ready to serve beverages section on account of its phenomenal growth has captured about 46 percent of the market of all processed fruit and vegetables. The study demonstrates that processing of fruits and vegetable was dominated by home scale industries, which account for largest food products order through out the period, the study also found that incidence of subcontracting, ancillarisation and franchising has increased tremendously owing to the partial liberalization introduced in the 1980's. Study concludes that tremendous prospects exist for future development; especially in the atmosphere of increased spending power of consumers.

#### **1.4. Objectives of the study**

- 1) To study changes in the policy framework Food Processing Industry in the pre and post liberalization period.
- 2) To trace the growth of Food Processing Industry in terms of it's capital base, employment generation in the pre and post reform period.

---

<sup>25</sup> Sinha, Sanjay and Sinha, Saurabh. (1992); " Small Scale Fruit and Vegetable Processing: Dynamics of Development"; Economic and Political Weekly, June 27, PP A93-A99.

- 3) To analyze the comparative organization and structure of industry across states in the pre and post reform era.
- 4) To study the changing composition of food-processing industry in various regions and relate them with their stage of development.
- 5) To evaluate the comparative status of regional concentration of food-processing industry in the two periods under consideration.

### **1.5. Database**

This study is based on published secondary sources of data, which are as follows:

- 1) Annual Survey Of Industries; Central Statistical Organization, New Delhi.
- 2) Unorganized Manufacturing Sector In India: It's Size Employment and key Estimates: 40<sup>th</sup>, 45<sup>th</sup>, 51<sup>st</sup> Round; National Sample Survey; Department of Statistics; Government Of India.
- 3) World Bank Indicators Database.

### **1.6. Methodology**

Simple statistical tools have been used for data analysis. At the India level time series data have been analyzed while at the state level cross sectional data have been analyzed. All the variables have been deflated at the 1980-81 prices using wholesale price deflators given in Economic Survey 1999-2000. (Page 5-63).

#### **1.6.1 Ratios Used For The Analysis are as follows:**

1. Fixed capital per unit of factory
2. Value of output per unit of capital and per unit of worker
3. Capital labour ratio.

These ratios have been constructed to study the capital intensity, capital productivity and labour productivity. Coefficient of Variation has been used to analyze the variation across the states in the industry and also in industry across states. Coefficient of correlation and Regression are used to analyse the relationship between selected variables. The inequality has been measured with the help of Theil's Index. Location Quotient has been used to find the concentration of different variables.

### **1.7. Design of the study**

The study has been planned in the following manner. Chapter 1 states the relevance and objective of study, survey of relevant literature, information on the basis of data, methodology and limitations of the study. Chapter 2 describes the India's process of opening of economy and government policies with regard to food-processing sector. Chapter 3 contains analysis of food-processing sector at national level using the organized and unorganized sector data. Chapter 4 attempts to demonstrate the region wise and industry wise performance of food-processing sector using 3-digit level and 2 digit level data of industries from data published by Annual Survey Of Industries. Chapter 5 provides the summary of findings, conclusion & policy implications.

### **1.8. Limitations of the study**

The study has a few limitations. The study has used secondary sources of data and is subject to data availability in specific forms. The study is limited to the time period of 1997-98 as at the 3 digit level data from the Annual Survey of Industries were not available beyond this point and also the format in publication of data has changed since 1998-99. The availability of unorganized sector data published by National sample Survey Organization was limited to India level information for the variables considered by us.

The trend and impact of the Foreign Direct Investment in Food Processing Industry is an important issue, given the new investment regime. In this study this specific issue has not been dealt, though trends and patterns of capital investment in general has been analysed.

TH-10701



DISS  
338.4766400954  
Si645 St  
  
TH10701

## CHAPTER 2

### POLICY PERSPECTIVES IN THE FOOD PROCESSING INDUSTRY

#### IN THE NEW ECONOMIC REGIME

##### **2.1 Integration of Indian Economy with World Economy: -**

With the change in development model from import substitution to export led growth, there has been emphasis on the integration of the Indian economy with world economy. This integration is sought by giving various incentives for increasing exports on one hand and decreasing protectionism on the other hand. External openness does provide significant opportunities for growth but also involves significant risks. External openness by itself does not assure growth unless it is part of larger strategy for economic growth, focusing on investment in physical and human capital and all the provision of appropriate social and political institutions for macro-economic adjustments. (Nayar, 2001)

Harping on this argument, there has been continuous effort to open the economy alongside the structural adjustment and internal liberalization. Four elements can be considered in determining the openness of economy

1. The proportion of G.D.P that is involved in the international trade of goods and services.
2. Tariff level, which speaks to the degree of protection, accorded to local industries.
3. Extent of Foreign Investment
4. Extent of state control on capital movements

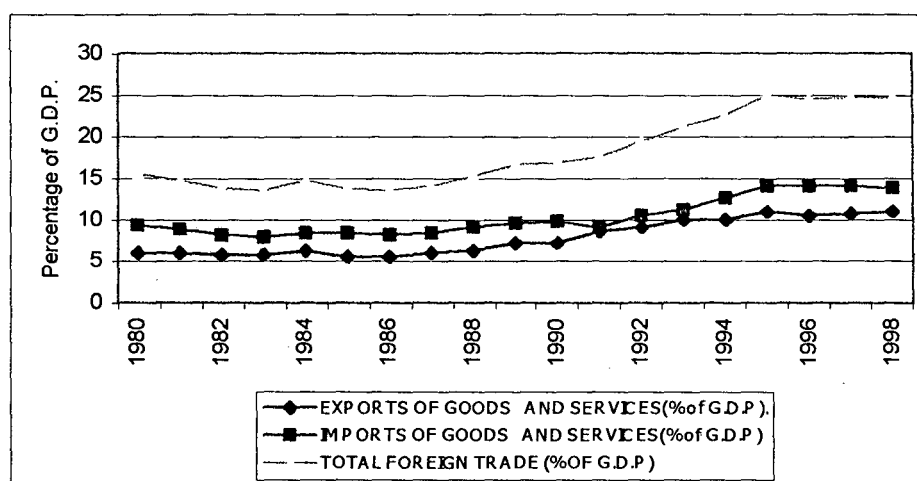
##### **2.1.1. Foreign trade in goods and services: -**

Opening of Indian economy regardless of whether it was result of deliberate policy change or sparked by contingent events has been a

continuous phenomenon. For the period between and 1981 and 1987 there has been fluctuating change of the proportion of foreign trade in goods and services to G.D.P, showing the highest of 14.8% in 1981 and lowest of 13.48% in 1983. However in the post-liberalization period there has been constant increase in proportion of foreign trade in goods and services to G.D.P, reaching the unprecedented level of 25% in 1995. However throughout the period, the imports have exceeded the exports. The growth of exports exceeded the imports during post-reform period. In terms of India's own economic past, the extent of increase represents a significant change in the relationship with the world economy.

Figure 2.1

### INDIA'S FOREIGN TRADE



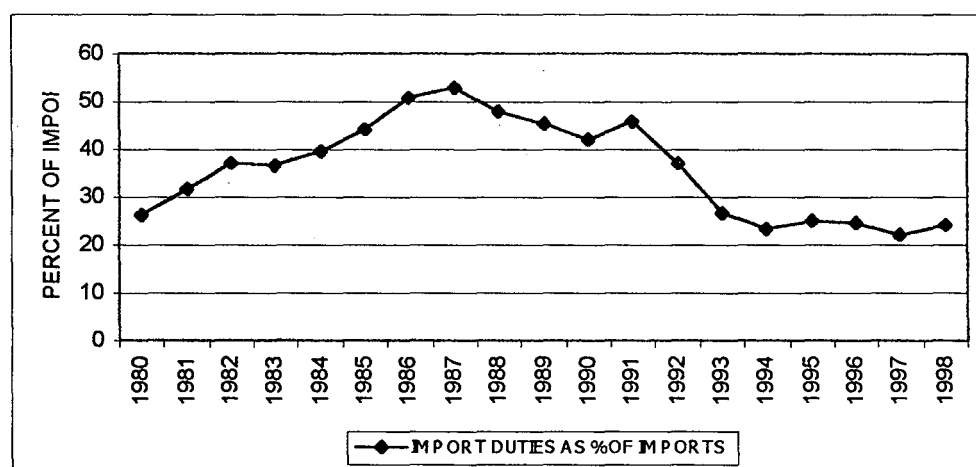
#### 2.1.2. Tariff Levels: -

Tariff levels are regarded as the proxy for the protection accorded to local firms. However, besides tariffs levels, non-tariff barriers also serves to protect domestic firms against foreign competition. Tariff levels after 1991 conforms to the expectation derived from the policy measures for liberalization. The period between 1981 and 1991 shows first arising trends in

tariffs and then declining trends. This shows the increased 'tarriffication' i.e. replacing quantitative restrictions and discretionary controls with high tariffs in first half and then decrease revealing the pre-history of liberalization since 1990. It is significant nonetheless that the falling tariff levels after 1987 have been accompanied by rising share of foreign trade in Gross domestic product. Figure 3.2 show's weighted average level of tariff level as percent of imports indicates the relative openness of economy.

Figure 2.2

### INDIA'S TARIFF LEVELS



#### 2.1.3. Extent of Foreign Investment: -

Prior to 1985, foreign investment in India was absent or was nominal relative to the size of Indian economy. Even the higher flows between 1985 and 1991 were meager.

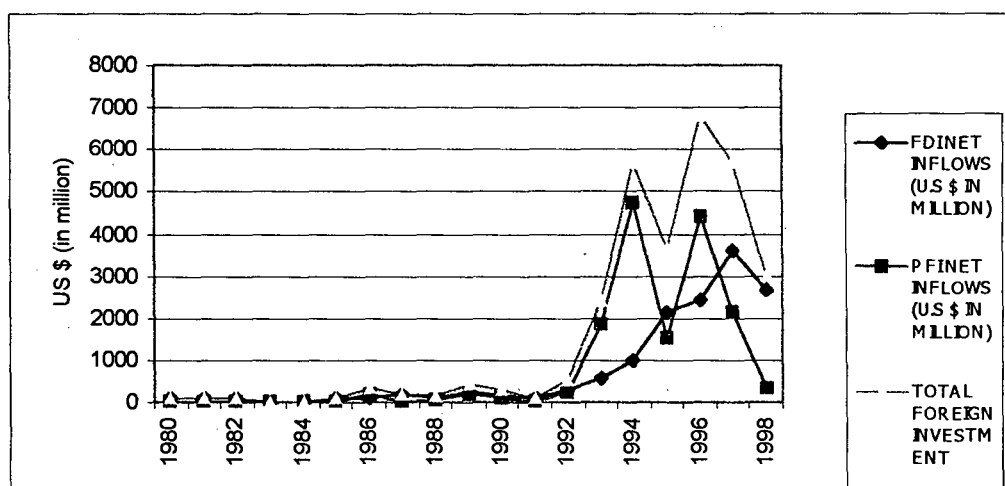
After the decisive shift to liberalization in 1991, the role of foreign investment in Indian productive system began to change. The F.D.I as a share of G.D.P has shown tremendous increase in 1993 and after it. More over the F.D.I that India has been able to attract has largely been for the



purpose of accessing the Indian market or for the acquisition of local firms, rather than using it as a platform for export or for the offshore resourcing to make India an integral part of the worldwide production system. A close at the figure 3.3 tells us that year 1993 can be considered as the watershed in the Indian economy from where foreign investment showed remarkable increase. However volatility of foreign investment should also be understood.

Figure 2.3

### FOREIGN INVESTMENT IN INDIA



#### 2.1.4. Extent of state control on capital movements: -

Controls on capital movement insulated the Indian market as did controls on foreign trade insulated India's economic market. Stringent restrictions on capital movements were part and parcel of the larger vision on building an autarkic industrial economy independent of world economy. System of licensing, regulations, prevention of monopolistic dominance, foreign exchange regulation act etc. all were designed to control the Indian market. The broader shift in economic policy in 1991 had reverberations for policy on capital movements as well. The state however, proceeded with caution and moderation. Restrictions were relaxed first in respect with trade, current account payments and F.D.I, followed by liberalization of portfolio

investment (P.F.I). Since the critical breakthrough in capital movement, capital account convertibility exists only as long-term aspiration, with India refusing to accept any significant change in this respect for the present. Such changes are conditional on certain prerequisites, being met first, principal among them being fiscal consolidation, a low rate of inflation and a strong overall financial system.

Alongside with external economic framework there has also been change in the major sectors of economy. There has been a continuous shift from agriculture dominated to service and manufacturing dominated economy. Shift is also observed in the composition of exports where percent share of agricultural products to total exports have been decreasing where as of manufactured products have been increasing.

There has also been increase in proportion in the exports of processed agricultural products to the agricultural exports. The difference in the value of processed agricultural products between pre and post reform period has also increased.

## **2.2. Nature of State Intervention In Food Processing Sector**

Before we attempt to outline the implications of new economic paradigm, it is necessary to examine the range of government policies with respect to food-processing sector. Needless to say, many of these policies are explicitly motivated by perceived market failures.

For an industry whose current magnitude of operations is rather small, the panoply of government policies, institutions and promotional measures are impressively large both in terms of number and diversity. The reason of course to commonly view that it is the " Sunrise Industry", which is at stage terms of its growth. This also explains why some of its institutions are of relatively recent origin.

Ministry of food-processing Industries, which is the youngest ministry, was established in 1988 and because of its young age it is constrained to some extent in its activities. Unlike other economic ministries whose stables include an array of autonomous, semi autonomous and departmental agencies involved in various aspects of the concerned economic sector, most of the relevant institutions in the food-processing industries come under the administrative control of the other ministries (mainly the Ministries of Agriculture and Commerce).

Nature of state intervention can be studied under the regulatory measures and development measure. Many of the measures with respect to this sector have overlapping effect and operate in a holistic manner especially with regard to agriculture, industry, commerce, etc. However, there are various which were evolved to ensure the proper growth and development of this sector.

### **2.2.1. Regulatory Measures**

The various regulations that government the food-processing industry can be broadly classified into

- a. Compulsory Legislation
- b. Voluntary Standards

### **2.2.2. Compulsory Legislation**

#### **a. Prevention of Food Adulteration Act 1954: -**

This Act is the basic statute that is intended to protect the common consumer against the supply of adulterated food. This specifies the different standards for various food articles. The standards are in terms of minimum quality levels intended for ensuring safety in the consumption of these food items and for safeguarding against harmful impurities and adulteration. The Central Committee for Food Standard, under the Directorate General of

Health Service, Ministry Of Health and welfare is responsible for operation of the Act.

**b. Essential Commodities Act 1954: -**

A number of control Orders have been formulated under the provisions of this Act. The main objectives of the Act are to regulate the manufacture, commerce and distribution of essential commodities including food. These include

**c. Fruit Products Order 1955: -**

This order regulates the manufacture and distribution of all fruit and vegetable products, sweetened aerated water, vinegar and syrups. The manufacture or relabelling of these products can be carried out only after obtaining a valid license from Ministry Of Food-processing Industries.

**d. Solvent Extracted Oil, De-Oiled Meal and Edible Flour Control Order 1967 And Vegetable Products Control Order 1976: -**

These orders control the production and distribution of solvent extracted oils, de-oiled meal, and edible flour and hydrogenated vegetable oil. Both the orders are operated by the Directorate of Vanaspati, Vegetable Oils And fats under the Ministry Of Civil supplies consumer Affairs and Public Distribution. For the production and distribution of the above products, a license is necessary from the Directorate.

**e. Meat Products Control Order: -**

This order regulates the manufacture, quality and sale of all meat Products and is operated by the Directorate of Marketing and Inspection.

**f. Milk And Milk Products Order 1992: -**

This order provides for setting up an Advisory Board to advise the government on the production, sale, purchase and distribution of milk powder. Units with an installed capacity for handling milk over 10,000 liters

per day or milk products containing milk solids in excess of 500 tonnes per year, are required to obtain registration under this Department of Animal Husbandry.

**g. Standards On Weights And Measures (Packaged Commodities)**

**Rules 1977:**

These rules lay down certain obligatory conditions for all commodities that are in packed form with respect to declarations on quantities obtained. The Directorate Of Weights And Measures under the Ministry Of Civil Supplies, Consumer Affairs and Public distribution operates these rules.

**h. Export (Quality Control And Inspection) Act, 1963: -**

The Export Inspection Council is responsible for operation of this Act. Under the Act, a number of exportable commodities have been notified for compulsory pre-shipment inspection. The quality control and inspection of various export products is administered through a network of more than 50 offices located around major production centers and port of shipment. Recently the government has exempted agriculture and food products, fruit products, fish and fishery products from compulsory pre-shipment inspections provided that the exporter has a firm letter from overseas buyer that the overseas buyer does not require pre-shipment inspection from official Indian agencies.

**2.2.3. Voluntary Standards: -**

There are two organizations that deal with voluntary standardization and certification systems in the food sector.

**a. Bureau Of Indian standards (B.I.S.): -**

The activities of B.I.S. are two-fold; the formulation of India Standards in the processed food sector and the implementation of standards through promotion, through voluntary and third party certification systems. In general

these standards cover raw materials permitted and their quality parameters, hygienic conditions under which products are manufactured along with packaging and labeling. Manufacturers complying standards laid down by B.I.S. can obtain an "I.S.I." mark.

**b. Directorate Of Marketing And Inspection (D.M.I.): -**

The D.M.I. Enforces the agricultural produce (Grading and Marking) Act, 1937. Under this Act, Grade Standards are prescribed for agricultural and allied commodities. These are known as "Agmark" standards. Grading under the provisions of this Act is voluntary. Besides these measures, there are other measures which though regulatory in nature, have been successively liberalized so that they are now more promotional in nature.

**2.2.4. Promotional Measures: -**

**a. Licensing System**

In this sector, there are only three industries till 2001 (distillation and brewing of alcoholic drinks, sugar and animal fats/oils) that are in the list of industries subject to compulsory licensing. In addition, a few industries in this sector are reserve for the small-scale sectors. Investments in the sector (other than in alcoholic drinks, sugar, animal fat /oils and in areas reserved for the small scale sector) have been exempted from licensing requirements and investors only need to file a memorandum with the Secretariat of Industrial Approval.

**2.2.5. Foreign Industrial Approval: -**

Food-processing Industry has been included in the list of high priority industry since 1993 that qualifies for automatic approval for foreign investments up to 50% equity. These include

- a. All food-processing industries other than milk food, malted foods and flour, but excluding items that are reserved for the small-scale sector.

- b. All items of packaging of food-processing industry excluding items that are reserved for the small-scale sector.
- c. Soya products which include
  - a. Soya texture proteins
  - b. Soya protein isolates
  - c. Soya protein concentrates
  - d. Other specialized products of soyabean
  - e. Winterized and Deodorized, refined soyabean oil

#### **2.2.6. Export Processing Zones/100% Export Oriented Units: - (2000)**

Certain areas have been designated as free trade zone (F.T.Zs) or Export Processing Zones (E.P.Zs). These are located in Kandla (Gujarat), Santa Cruz (Bombay), Cochin (Kerala), Chennai (Tamil Nadu), Falta (West Bengal), Noida (Uttar Pradesh), Vishakhapatnam (Andhra Pradesh). All export-processing zones except the one Santa Cruz are open for investments in the food-processing sector. Units located in the export processing zones or elsewhere as hundred percent export oriented units are allowed foreign equity holding up to 100%. In general the minimum value addition for such units have been prescribed as 20%. The primary advantage of setting up an unit in an export processing zone or as an 100% export oriented units are –

- a. Full duty exemption on all imports
- b. Tax holiday for any five consecutive years, within eight years from the commencement of production.
- c. Full exemption from sale taxes and excise duties on all local purchases.
- d. Permission to have up to 100% equity. An E.O.U. or an unit in an E.P.Z. engaged in agriculture, aquaculture, animal husbandry, poultry

can sell up to 50% of production in value terms in the Domestic Tariff Area

### 2.2.7. Food Parks: -

As part of strategy to develop food-processing infrastructure, food parks have been set up in different parts of the country in 2001. The idea behind setting up of food parks is that small and medium entrepreneurs find it difficult to invest in capital-intensive activities, such as cold storage, warehouse, quality control labs, effluent treatment plants etc. Assistance for development of such facilities can make the food parks not only become more competitive and have a better market orientation, but also be accessible to small or medium entrepreneurs. P.S.U.s/ Joint/ Assisted/ Private Sector/ N.G.O.s/ Cooperatives are eligible for grants up to Rs. 4 crore for common facilities such as uninterrupted power supply, water supply, cold storage, ice plant, warehousing facilities etc. as part of Food Park. Till April 2002 food parks have been sanctioned in different parts of the country.

Table 1.1

<b>FOOD PARKS</b>			
<b>Districts</b>	<b>States</b>	<b>Districts</b>	<b>States</b>
Khaunmoh in Srinagar	Jammu and Kashmir	Bagalkot	Karnataka
Sirhind in Fatehpur Sahib	Punjab	Malapuram	Kerala
Soha in Ambala	Haryana	Alapuzha	Kerala
Ghaziabad	Uttar Pradesh	Virudhnagar Madurai	Tamil Nadu
Kursi Road Barabanki	Uttar Pradesh	Chittor	Andhra Pradesh
Varanasi	Uttar Pradesh	Hooghly	West Bengal
Mandsaur	Madhya Pradesh	24 Parganas, South	West Bengal
Neemrana	Madhya Pradesh	Bedh Jung Nagar	Tripura
Hoshangabad	Madhya Pradesh	Chhingchip	Mizoram
Butibari in Nagpur	Maharashtra	Imphal	Manipur
Kolar	Karnataka	Kamrup	Assam

Source- Ministry of Food Processing Industry



**2.2.8. Agricultural Export Zones: -**

The EXIM Policy 2001 has introduced the concept of agricultural export zones to give primary importance to promotion of agricultural exports and to give effect to reorganization of our export efforts on the basis of specific products and specific geographical areas. By focusing specially on areas where there is convergence of these two factors, the intention is to transform these zones into regional rural motors of export economy. The scheme is centered on the cluster approach of identifying the potential products, the geographical regions in which these products are grown and adopting an end-to-end approach of integrating the entire process right from the stage of production till it reaches the market. Measures envisaged to promote exports from such zones include financial assistance by developing and extending existing financial assistance to various agri exports related activities; financial incentives like the benefits under the Export Promotion Capital Goods Scheme; exports of value added agri products would eligible for sourcing duty free fuel for generation of power provided the cost component of power in the ultimate product is 10 percent or more and the input output norms are fixed by the Advance Licensing Committee of the director general of foreign trade; and entitlement of agri exporters to recognition as Export House/Trading House/ Star Trading House/ Super Star trading House on achieving only one-third of the threshold limit prescribed for exporters of goods. The scheme is already under operation in three agri export zones viz. for pineapple in Darjeeling and Jalpaiguri region of West Bengal, Gherbins in and around Bangalore, Karnataka: and lichis in Udhamsinghnagar and Nainital of Uttaranchal have already been notified. Setting up of five more agri export zones viz. for fruits and vegetables in and around Pune, vegetables in areas of Punjab, potatoes in and around Uttar Pradesh; meat in Aligarh, Uttar

Pradesh and mangoes in and around Lucknow an Uttar Pradesh are also under consideration.

### **2.2.9. Imports and Exports**

On grounds of public policy certain goods of the food-processing sector have been put under "negative list"; "negative lists of imports" and "negative lists of exports". Besides this there has been a canalized list, the items in which items can be imported or exported through certain agencies. However over the years, and especially after the coming into effect of the W.T.O., these lists have been proved. From 1<sup>st</sup> April 2000 with the removal of quantitative restrictions on 715 items the canalized lists have totally been abolished and only few items remain in negative lists.

### **2.2.10. Taxation Environment**

Tax benefits have been given to stimulate activity in this sector. Excise duty has been totally abolished for processed fruit sector. Also 30% deduction in taxable income for a period of 10 years from the date of commencement of production is in place. This tax incentive is available for all manufacturing enterprises, except in few specified industries which include:

- Beer, wine and alcoholic spirits.
- Aerated waters, in the manufacture of which blended flavoring concentrates in any form are used.
- Confectionery and chocolates.

Besides this macro-economic framework of liberalization and promotion of food- processing sector, Ministry of Food-processing Industries with its sub-sectors takes special measures for promotion of this industry.

Sub-sectoral bodies in the food-processing sector, at the central level include

- a. National Horticulture Board (NHB).
- b. Marine products export Development Authority (MPEDA).

- c. Agriculture and Processed Food Products Export Development Authority (APEDA).
- d. Fisheries Survey of India.
- e. The Spices Board.
- f. The Coffee Board.
- g. The Tea Board.
- h. Cashew Export Promotion Council.
- i. The Coconut Development Board.

Institutions like the Central Food Technology Research Institute (C.F.T.R.I.), The National Dairy Research Institute (N.D.R.I.) and the Central Institute of Fisheries Technology (C.I.F.T.) are involved in tasks of research and development.

### **2.3 Summing Up**

The transformation of the Indian Economy from the inward looking protected economy to the growth and export oriented economy has been an ongoing process which started in the mid-eighties but a determined effort towards integrating it with the world economy was undertaken by the Government since 1991 .

Several measures were introduced to increase the efficiency by removing protection and increasing competition in the economy as a whole and to the Food Processing Sector in particular. The reform process has sought to increase the role of market forces in determining the resource utilization. In the Food Processing Sector greater role is sought from the private sector to help it emerge as an engine of the modern economy.

## CHAPTER 3

### TRENDS OF GROWTH AND STRUCTURAL CHANGE IN THE FOOD

#### PROCESSING INDUSTRY : A MACRO OVERVIEW

##### **3.1. Introduction**

In the economic framework of greater openness and greater policy support to the processing of agricultural products analyzing the development of Food Processing Industry through the period can give as to what effects new policies are having on whole economy. Food processing industry has always been an important part of our industrial set up. Two most important reasons that has led it to be identified as the thrust area is its labour intensiveness and it's strong backward linkages with agriculture and equally important forward linkages with modern markets. It is expected that developing and modernizing this industry can set up the crucial development linkages up in the economy for all round development.

Food processing industry comprises of three groups.

- a) Primary food processing
- b) Unorganized and cottage scale industries
- c) Organized processed food industries

The first group was made up predominantly of industries like rice hullers, flour chakkis, dal mills and oil mills, beside scores of simple small scale dehydration and processing industries in rural and semi-urban areas. The small bakeries, pasta food units, traditional food units, poha making units, fruits, vegetable and spice processing units dominate the unorganized sector. The organized food processing industry produces variety of products and contributes significantly in the industrial output. In the backdrop of the significant policy changes discussed in chapter 2, it would be relevant to

compare the pre and post reform performance of the Food processing industry at all India level.

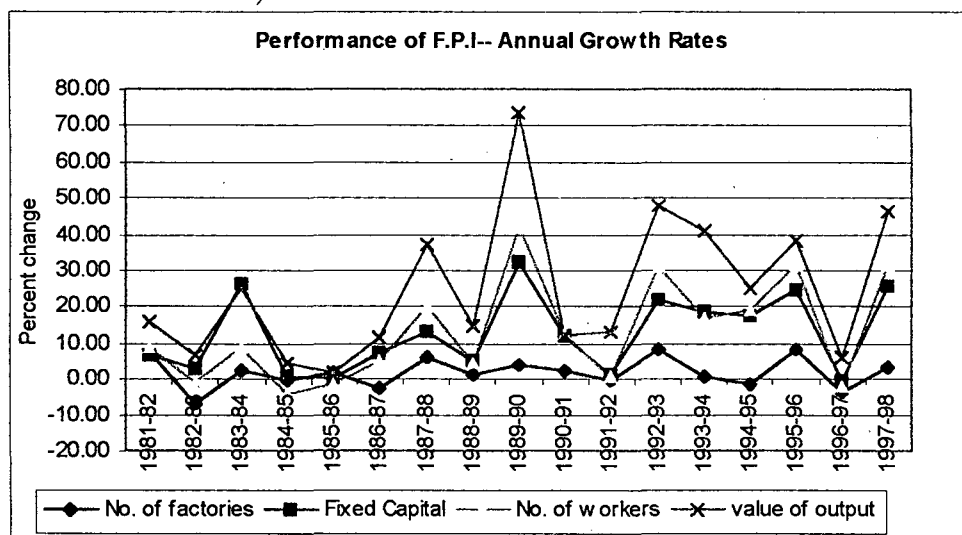
### **3.2. Food Processing Industry in Organized Sector: -**

Organized food processing is of special significance in the analysis of post-reform economic development: As observed from analysis in chapter 2 that in the recent years there is special emphasis on the increase in the unit value of exports on the one hand and increased investment of capital on the other hand. This process has resulted in the increased capitalization of Food Processing Industry. Organized food processing always formed an important component of our industrial structure. Table 3.1 brings out the importance of Food Processing Industry with respect to all industries. Analysing the table 3.1 we find that in the post-reform period the share of factories in Food Processing Industry F.P.I has come down mainly due to faster growth in the factories in other sectors than in the F.P.I. However, in the case of proportion of fixed capital in F.P.I we find that there was constant increase except in the periods 1995-96 and 1996-97 where some decrease was noted. This highlights the growing incidence of capital intensity in the food-processing sector, the magnitude of which was higher than in other industries. The average fixed capital per factory in F.P.I in the pre reform period was Rs. 10.81 lakhs /-, which has increased to Rs. 22.82 lakhs/-, in the post reform period, registering an average growth of 111.07 per cent, while average growth rate in the fixed capital per factory in all industries was only 72.35 percent. This indicates the nature of transition in F.P.I and growing importance of capital in F.P.I. The mechanism of growing capital intensity in the Food Processing Sector will become clearer in the further analysis. Also accompanied with growing proportion of fixed capital is the increase in the proportion of value of output of F.P.I in the total industrial output. The

proportion of value of output has shown constant increase with the exception of years 1992-93 and 1995-96. This increase in the proportion of value of output is significant as there has been decrease in the proportion of the number of factories and increase in the proportion of fixed capital. This implies that there is greater efficiency with which few larger factories are operating in the food-processing sector as compared to all other industries.

Although there has been overall increase in the number of workers but the growth in employment always lagged behind the growth in fixed capital. With the exception of the year 1996-97 which showed decrease in number of the factories and number of workers and also low growth in fixed capital, rest of the period recorded very high growth in the fixed capital. Capital-intensive growth, a prominent feature of liberal trade and industrial policies has also been highlighted by the studies of Goldar (2000) and Unni, Lalitha and Rani (2001).

**Figure 3.1**



**Table 3.1**  
**Food Processing Industry as Proportion of all industries**

	<b>No. of Factories</b>	<b>Fixed Capital</b>	<b>No. of Workers</b>	<b>Number of Employees</b>	<b>Net Value Added</b>	<b>Value of Output</b>
<b>1980-81</b>	17.69	4.04	16.56	16.72	6.11	6.80
<b>1981-82</b>	17.48	3.82	11.50	16.74	7.66	6.53
<b>1982-83</b>	18.37	3.64	15.61	15.41	6.70	6.09
<b>1983-84</b>	18.12	3.94	13.19	12.93	7.31	6.95
<b>1984-85</b>	18.01	3.71	12.74	12.66	7.18	7.16
<b>1985-86</b>	17.55	3.63	13.06	12.80	7.10	7.14
<b>1986-87</b>	17.66	3.74	12.80	12.53	6.86	7.58
<b>1987-88</b>	17.87	3.58	13.11	12.81	6.82	8.27
<b>1988-89</b>	17.86	3.68	13.09	12.84	7.18	8.26
<b>1989-90</b>	17.91	4.35	13.65	13.31	8.43	9.43
<b>1990-91</b>	17.93	4.15	13.82	13.41	6.84	8.69
<b>1991-92</b>	17.56	4.24	13.79	13.37	7.01	8.83
<b>1992-93</b>	17.91	4.16	14.17	13.67	5.71	8.58
<b>1993-94</b>	17.67	4.35	13.98	13.65	6.73	9.85
<b>1994-95</b>	17.18	4.58	13.53	13.25	7.36	9.38
<b>1995-96</b>	17.00	4.55	13.25	12.80	5.82	8.79
<b>1996-97</b>	16.37	4.44	13.44	13.11	6.71	10.01
<b>1997-98</b>	16.82	5.05	13.82	13.44	6.31	10.08

Source- calculated from data provided by Annual Survey of Industries

However the most important variable that concerns us is the employment generation, which has been one of the stated objectives of the F.P.I, and this is the area where liberalization is taken most cautiously. In the post liberalization period between 1992-93 to 1995-96 there has been constant fall in the proportion of workers in Food Processing Sector to all industries, which had earlier witnessed constant increase between the period 1986-87 to 1990-91 and modest increase in 1996-97 and 1997-98, this phenomena indicates that ability of employment generation by the Food Processing Industry as compared to all industries has decreased in the post-reform period. This phenomenon occurred at the time when there has been increase in the proportion of fixed capital and value of output of food processing industries in the industrial structure. This leads us to investigate

whether jobless growth has been taking place in the food-processing sector in the post reform period in F.P.I.

### **3.3. Employment Generation: -**

Perhaps the most critical problem that has been faced by the organized industry is of 'jobless growth'. Employment growth in the organized industry during the period 1983-84 to 1987-88 was recorded to be 1.54 percent and during the period 1993-94 to 1999-2000 it declined to 1 percent. Food Processing Industry in the organized sector also witnessed the same phenomena. The employment growth, both in organized Food Processing Industry as well as in all industries has been slower as compared to output growth throughout the eighties and nineties.

Now as, liberalizing policies progress further to define a very different economic environment, this problem needs to be addressed even more urgently than before. The paradox of high output growth with very low employment growth in an economy rich in labour resources has to be understood in consonance with policies designed to ensure, so far as possible the best use of the 'unlimited supply of labour' which is such a defining characteristic of the Indian economy. (Ghose, 1994).

Tracing the employment growth in the Food Processing Industry and comparing it with performance of all industries in the organized sector will give us some understanding of functioning of economy through reform period.

The employment elasticities for Food Processing Industries as well as all industries have been estimated by fitting regression equation ' $\ln(y)_t = a + b * \ln(x)_t$ ' where y is the number of workers and x is the value of output in real terms. The estimates of employment elasticities are presented in table given below for Food Processing Industries as well as for all industries for



period 1980–81 to 1990–91 (pre reform period) and 1991–92 to 1997–98 (post reform period).

**Table 3.2**  
**Employment Elasticities in the Organized Sector**

	1980-81to1990-91	1991-92 to1997-98
Food processing	-0.123*	0.245**
All Industries	-0.0268*	0.371**

Source- calculated from data provided by Annual Survey of Industries

Note- \* Statistically not significant even at 10 percent on a two- tailed test

\*\* Statistically significant at 1 percent on a two- tailed test

The table 3.2 shows that in the pre reform period organized industries as a whole witnessed negative employment elasticity and the Food Processing Industry recorded even lower employment elasticity than all industries and this low employment elasticity in the F.P.I is noticeable fact considering the labour intensive nature of industry. However the employment elasticities during post reform period i.e. 1991–92 to 1997-98 showed considerable increase both in the Food Processing Industry as well as in all industries. The negative and positive employment elasticities in the pre and post reform periods respectively are clearly features of the general industrial sector, but what is noticeable is that during both periods, F.P.I has lower elasticity as compared to all industries.

The behaviour of employment elasticity for Food Processing Sector, suggest that while output growth in the eighties can be almost wholly attributable to the growth in labour productivity, a part of the output growth in nineties can be attributed to the employment growth.

**Table 3.3**

**Trend Growth Rates**

	Number of Workers	Fixed Capital	Value of Output
1980-81-1990-91	-1.94***	7.976*	10.2*
1991-92--1997-98	2.794**	14.0*	11.0*

Source- calculated from data provided by Annual Survey of Industries

Note- \* Statistically significant at 1 percent on a two- tailed test

\*\* Statistically significant at 5 percent on a two- tailed test

\*\*\* Statistically significant at 10 percent on a two- tailed test

Since the trend growth in the output during eighties, as given in table 3.2, has remained quite high, so the drastic deceleration in employment growth in the eighties has to be sought in the factors explaining the rapid growth of labour productivity.

In theory, labour productivity may rise if capital employed per unit of labour rises and/or the general efficiency with which capital and labour are used in production improves due to technological innovations. It may be possible that labour productivity rises solely because of improvement in factor use efficiency. If demand condition improves, capacity utilization in the enterprises will improve and productivities of both capital and labour will rise, capital intensity remaining constant. Improvement in factor use efficiency could also rise in association with modernization of technology (undertaken in response to either growing demand or pressures of competition) involving increase in capital intensity. In such situations, improvements in factor use efficiency and rise in capital intensity cannot be presumed to be mutually independent processes. Indeed, improvements in factor use efficiency are attributable to the rise in capital intensity in so far as the latter creates an opportunity for re-organizing production and management. However it is not inevitable that a rise in capital intensity is always accompanied by an improvement in the factor use efficiency. A rise in capital intensity may merely indicate a process of substitution of capital for labour rather than introduction of new types of capital goods employing improved technology. In both the cases there would be an increase in labour productivity. Thus, whenever capital intensity rises, this rise should be regarded as the critical factor in explaining growth of labour productivity. According to Ghose (94) productivity and capital intensity growth can be related as Rate of growth of

labour productivity = Rate of growth of capital intensity + Rate of growth of capital productivity.

Here labour productivity is defined as output (in real terms) per unit of worker, capital intensity is defined as the stock of fixed capital (in real terms) per unit of worker and capital productivity is defined as output (in real terms) per unit of fixed capital (in real terms).

The standard production with constant returns to scale indicates that, when capital intensity rises, if capital productivity either remains unchanged or rises, production efficiency can be unambiguously set to have improved. In other words with a positive rate of growth of capital intensity, if the rate of growth of labour productivity either equals or exceeds the rate of growth of capital intensity, a part of the growth of labour productivity is unambiguously attributable to an improvement in production efficiency. In this case, the rise in capital intensity is most likely to have been associated with technology up-gradation. When rise in capital intensity is associated with a substantial decline in capital productivity, it is more likely that there has been a mere substitution of capital for labour (Hahn and Mathews, 1967).

Table 3.4

**Trend Growth Rates**

	Labour Productivity	Capital Intensity	Capital Productivity
1980-81-1990-91	12.2*	9.93*	2.3*
1991-92--1997-98	8.25*	11.2*	-2.93**

Source- calculated from data provided by Annual Survey of Industries

Note- \* Statistically significant at 1 percent on a two- tailed test

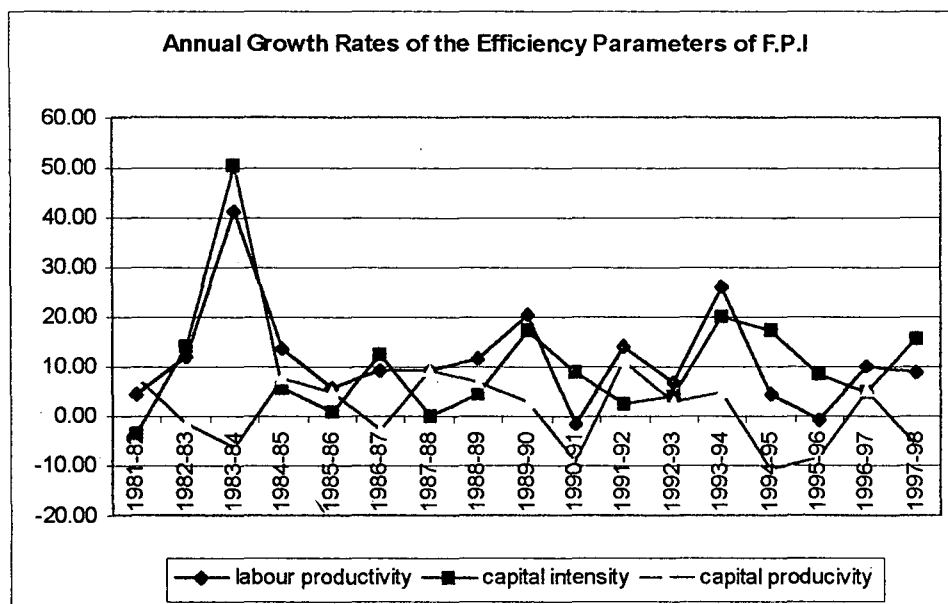
\*\* Statistically significant at 5 percent on a two- tailed test

From table 3.4 and it becomes clear that growth rate in labour productivity and capital intensity was quite high during pre reform period. In the post reform period, while labour and capital productivity growth declined and capital productivity even registering negative growth, the growth in

capital intensity increased as compared to pre-liberalization period. There is, thus some reason to believe that factor use efficiency significantly improved in the pre- liberalization period i.e. growth of capital intensity was associated with technology up-gradation. But rise in capital intensity in post reform period accompanied with substantial decline in capital productivity can be associated with the phenomena of substitution of capital for labour.

Looking at the year to year variation from figure 3.2, we find that during the years 1981-82, 1982-83 and 1983-84, there has been significant increase in labour productivity and capital intensity but alongside there has been significant fall in capital productivity which highlights the high rate of capital substitution. The year 1986-87 also shows the similar phenomena. However it is the post-liberalization period and especially the period after 1993-94 that requires our attention. Firstly taking the growth of labour productivity, it has shown significant growth during 1991-92 and 1993-94, thereby declining slightly in 1995-96 and again recovering to attain high growth in 1996-97. Likewise the capital intensity has shown constant high growth except between the period 1994-95 and 1996-97 where it slowed down. However the capital productivity has shown results opposite to other variables, it has shown drastic decrease during the period when capital intensity has shown high increase, indicating the increased capital substitution during these periods. The excessive infusion of capital into the industry, perhaps due to more liberal trade policies can be attributed as a cause of decline in capital productivity in post reform period. Similar results were also obtained by the study of Unni, Lalitha and Rani (2001) in the case all organized manufacturing.

Figure 3.2



This can be well understood in the macro-economic framework of liberalization and structural adjustment where the conditions are increasingly made favourable for the domestic as well as foreign capital. This has resulted in high growth in capital employed per factory and low growth in workers employed per factory. Figure 3.3 and 3.4 show the trend in capital and workers employed per factory.

Figure 3.3

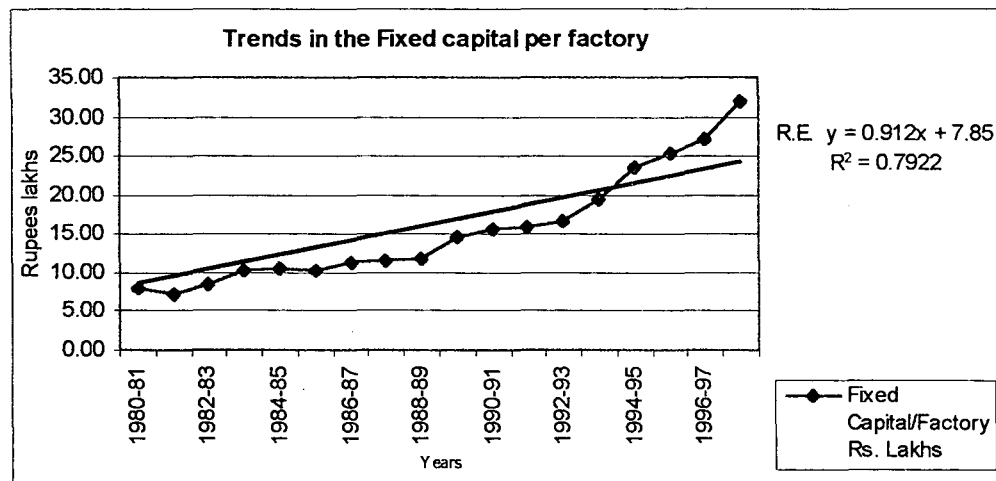
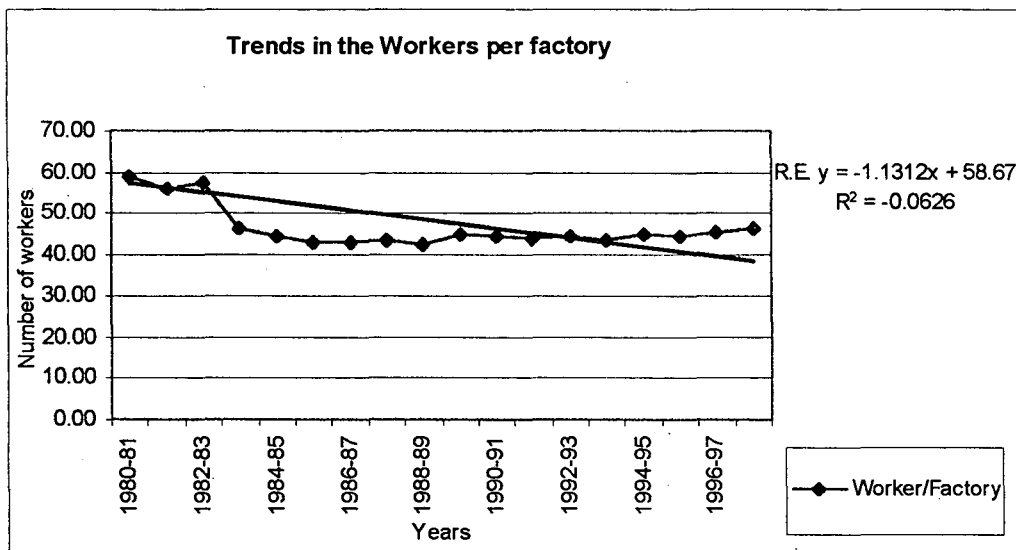


Figure 3.4



As also linked with the new economic framework is the rapid increase in per capita income in general and in new economic sectors such as software industries in particular. This could have shifted demand of the consumer products of the Food Processing Sector, hence resulting in shift of the emphasis from the production site towards packaging and sales side or say, towards service side of the industry. This effect is highlighted by the fact that difference between the number of employees and number of workers per

factory has showed continued increase in the post-reform period. As the workers include all persons engaged either in production or in maintenance work related to production whereas employees include all those engaged in supervisory management and administrative work in sales, purchase, store-keeping, welfare activities etc in addition to workers. So the emphasis on the service side and capital side of Food Processing Industry is upcoming phenomena, which for long has been regarded as labour intensive industry. Figure 3.5 and 3.6 show the nature of transformation and increase in the emphasis on the service of F.P.I in the post reform period.

Figure 3.5

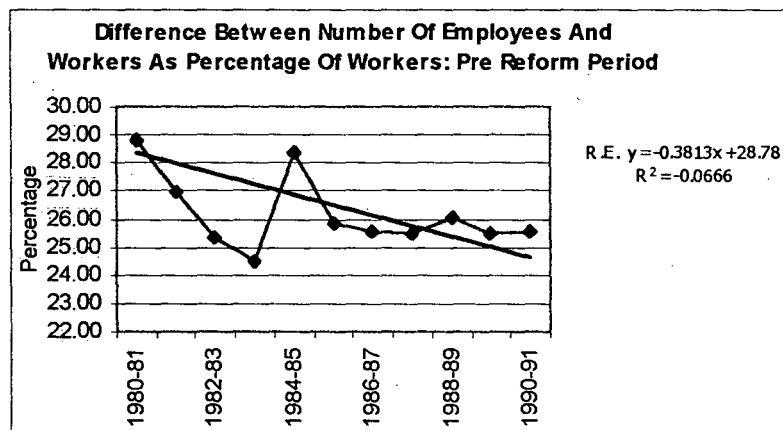
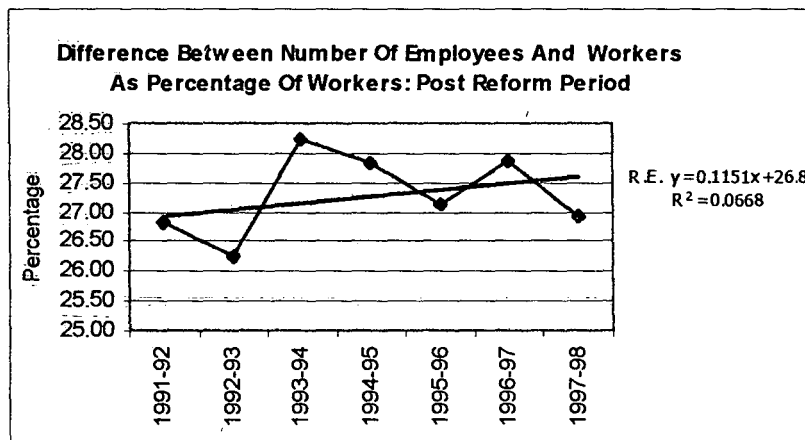


Figure 3.6



From the above analysis it becomes clear that although there has been increase in the employment in the F.P.I in the post liberalization period, the new investment, which was expected to create greater employment on the production side, is not able to fulfill its level of expectations.

Although jobless growth in the strict sense can be accorded to pre-liberalization period where increase in output was accompanied by decrease in the number of workers, yet the increased capital intensity during post-liberalization period signifies the change in emphasis from the labour side towards capital side of the F.P.I. The fast growing labour productivity, which has recorded growth higher than capital productivity, shows the improvement in incremental output ratio of labour. The tendency of increase in the capital intensiveness in the post reform period has demonstrated that the large organized sector units are better equipped to deal with the competitive conditions arising out of economic reforms.

#### **3.4. Food Processing Industry in the unorganized sector: -**

Analysis of this sector is limited by the availability of the data of only three time periods of 1984-85, 1989-90 and 1994-95. Since the time series data is not available, the analysis is limited to the data of the available time period.

Food processing in the unorganized sector constituted significant part of the total food processing. According to approach paper of Eighth five-year plan of Ministry of Food Processing Industry, unorganized sector constituted about 42% of total enterprises in the food-processing sector.

A comparison of unorganized and organized Food Processing Sector in table 3.5 shows the dominance of unorganized sector in terms of both number of enterprises and number of employees. However the number of



employees per enterprise in the unorganized sector is much less as compared to organized sector.

Table 3.5

**Unorganized and organized Food Processing Sector as a % of total Food Processing sector**

	Unorganized sector		Organized sector	
	NO.ENT.	NO.EMP.	NO.ENT.	NO.EMP.
1984-85	99.47	86.86	0.53	13.14
1989-90	99.25	84.10	0.75	15.90
1994-95	98.13	81.40	1.87	18.60

Source- NSS Report No. 363/1, 396/1, and 433

Small number of employees per enterprise invokes some skepticism as whether unorganized Food Processing Sector is as efficient as organized one in the employment generation but this skepticism is removed to some extent by the fact that an overwhelmingly large proportion of unorganized manufacturing is concentrated in terms of own account manufacturing which are more efficient in generating self-employment than creating large employment.

Table 3.6

**Employees per enterprise in unorganized Food Processing Sector**

	Rural	Urban	All India
1984-85	2.00	0.485	0.497
1989-90	0.46	0.389	0.445
1994-95	0.437	0.376	0.424

Source- NSS Report No. 363/1, 396/1, and 433

Another important fact, which also comes out from table 3.5 and 3.6, is that there has been constant decrease in both in number of enterprises and number of employees over the period. This decrease in unorganized food processing is occurring at the time when organized food processing is growing. This indicates that organized Food Processing Sector may be driving out the unorganized food-processing sector. Although there has been increase in value added per enterprise and in value added per worker as given in table 3.8, it may be occurring more due to decrease in the number of enterprises

than due to increase in the efficiency of enterprises. Also the compound annual growth rate shows that rate of decrease in enterprises was higher between 1984-85 to 1989-90 than in the period between 1989-90 to 1994-1995. Closure rate of enterprises was higher in urban areas during 1984-85 to 1989-90 and in rural areas during 1989-90 to 1994-95 which shows that crowding out of unorganized sector is taking place in the time when there has been attempt to develop this sector and link it with mainstream economy. Although the closure rate decreased during post-liberalization period as a whole yet higher closure rate in the rural areas than urban areas signifies that rural areas has still to adopt itself to new economic processes.

Table 3.7

**Growth rate in the enterprises and employment in the unorganized industry**

<b>ANNUAL COMPOUND GROWTH RATE 1989-90 OVER 1984-85</b>						
	RURAL		URBAN			
	TOTAL	TOTAL	TOTAL	TOTAL	ALL TOTAL	ALL TOTAL
	NO.ENT.	NO.EMP	NO.ENT.	NO.EMP	NO.ENT.	NO.EMP
20-21	-0.87	-0.54	-1.41	-0.57	-0.97	-0.55
All	-0.70	-0.28	-0.65	0.12	-0.69	-0.16
Industri es						
<b>ANNUAL COMPOUND GROWTH RATE 1994-95 OVER 1989-90</b>						
	RURAL		URBAN			
	TOTAL	TOTAL	TOTAL	TOTAL	ALL TOTAL	ALL TOTAL
	NO.ENT.	NO.EMP	NO.ENT.	NO.EMP	NO.ENT.	NO.EMP
20-21	-0.28	-0.08	-0.12	0.01	-0.25	-0.06
All	-0.61	-0.40	-0.05	0.02	-0.46	-0.26
Industri es						

Source- NSS Report No. 363/1, 396/1, and 433

There has been some increase in number of employees during the post-liberalization period both in food processing industries and in all

industries in the urban areas. This increase in number of employees has been witnessed at the time when there has been decrease in the number of enterprises in the urban areas. This may be due to consolidation in the unorganized food-processing sector in the urban areas where only few efficient enterprises remains. Also the incidence of sub-contracting may have become greater during the post reform period and only few enterprises would be benefiting from this process. This points out to the fact that unorganized Food Processing Sector in finding it difficult to cope with the competition induced by the ongoing process of liberalization.

#### **3.4.1. Productivity in unorganized sector: -**

One of the reasons cited in the favour of the liberalization policies was that, it would increase productivity in all the sectors of economy. Increase in the productivity in the unorganized sector was considered crucial in the overall increase in the productivity in the manufacturing sector. However the productivity results in the unorganized sector have not supported the hypothesis of increase in the growth of productivity. Unni, Lalitha and Rani (2001) found that growth in the labour productivity in the unorganized sector declined between 1990-95 as compared to pre-reform period of 1985-90. Similar results were also found in the case of capital productivity. Results of the studies by Goldar and Mitra (1999) also indicate towards slow down in the growth of productivity in the unorganized sector.

Food Processing Industry also witnessed decrease in the growth in the value added per worker and value added per enterprise in the post reform period. Table 3.8 indicates that growth in the pre reform period in the food-processing sector in terms of value added per worker and value added per enterprise was higher in the rural areas than in the urban areas. In the post reform period also food-processing industry in the rural areas witnessed

higher growth in the productivity than urban areas, but difference in the growth rates narrowed down between urban and rural areas in the post reform period. This shows that rural areas witnessed higher degree of slow down than compared to urban areas. The decreased attractiveness of the rural areas in the post reform period is also made clear by the greater decrease of enterprises and employees in the than urban areas as highlighted by table 3.7. Also growth in the value added in the Food Processing Industry was higher than all industries in both the periods indicating that demand of the unorganized Food processing continues to be higher than the other unorganized manufacturing.

Table 3.8

**Growth in the productivity in the unorganized sector**

	ANNUAL COMPOUND GROWTH RATE 1989-90 OVER 1984-85			
	Value added per worker		Value added per enterprise.	
	Rural	Urban	Rural	Urban
20-21	6.85	4.24	12.45	8.61
All Industries	3.47	1.57	7.84	9.62
	ANNUAL COMPOUND GROWTH RATE 1994-95 OVER 1989-90			
	Value added per worker		Value added per enterprise.	
	Rural	Urban	Rural	Urban
20-21	2.56	2.01	6.62	4.46
All Industries	1.89	1.27	6.36	7.53

Source- NSS Report No. 363/1, 396/2, and 433

The incidence of decreased importance of unorganized manufacturing in the economy has been continuing and it is interesting to note that unorganized sector as a whole has lost its share in favour of its organized counterpart, which is also true in the case of Food Processing Industry also. As is clear from table 3.5 that decline had started somewhat earlier, it become particularly severe after economic reforms. Thus the acceleration of economic growth during nineties marked a clear ascendancy of organized manufacturing over the unorganized one. According to Nagaraj (2000) growth

in the organized manufacturing spilling over to the unorganized did not materialized because scale of production in the unorganized sector may not equip it to handle the pressures of competition under liberal industrial and trade policies.

### **3.5. Summing Up: -**

Food Processing Sector has undergone significant change in the period under analysis. In the organized Food Processing the growth of value added, employment and capital surged forward after the introduction of economic reforms. In the pre reform period where there was negative growth in the employment, in the post reform period there was moderate increase in the growth of employment. However the capital intensity, which has been undergoing continued increase witnessed tremendous increase in the post reform period, indicating the increased pace of structural transformation in the post reform period. Although the pace of change increased in the post reform period the sudden change as was expected did not materialized in the post reform period, indicating previous stages of preparation in the period of partial liberalization.

Although the case jobless growth can not be accorded in the strict sense in the post reform period, where there was increase in the employment, but high growth rate of capital intensity coupled with substantial decline in capital productivity indicates that there has been increased substitution of capital for labour in the post reform period.

One of the most important facts, which comes out from the analysis is that the growth in the structural parameters have not led to increase in the growth of the productivity and efficiency as was expected out of the process of liberalization. Another trend, which is also visible in the organized Food Processing Sector, is the growing importance of service side of industry,

which can be understood from the increased incidence of competition among branded products. Which might have led to players shift their emphasis from production to service side of the industry.

The increase in competition, which was one of the main planks of liberalization policies, has resulted in the decrease in the importance of unorganized sector in the Food Processing Industry. Unorganized Food Processing is losing its share in comparison to organized manufacturing, indicating the inability of unorganized manufacturing to cope with the nature of demand created by the liberalization measures. The nature of competition introduced by the liberalization policies is expected to favour the large integrated units as they can better utilize the economies of scale.

## CHAPTER 4

### **SPATIAL REORGANISATION OF FOOD PROCESSING INDUSTRY :**

#### **A COMPARITIVE ANALYSIS OF PRE AND POST REFORM PERIODS**

##### **4.1. Introduction: -**

One of the main purpose of this study is to analyse the regional distribution of food-processing industry and its change over time. In this chapter, analysis has been done on the basis of data provided by the Annual Survey of Industries for the three time periods of 1980-81, 1990-91 and 1997-98. Total numbers of 20 states/Union Territories have been taken although some states and Union Territories have small industrial set-up, but in case of food processing industries, they show significant importance. In the post- liberalization period these states and Union Territories are expected to show significant growth in the consumer goods industries, of which, Food Processing Industry plays an important part on account of their significant increase in per capita spending capacity. States of northeast India are taken as one unit, as most of the development plans deal with the Northeast as one unit and also taking them as one unit has made it easier to compare them with other states.

##### **4.2 Importance of Food Processing Industry in the industrial set up in the states: -**

Analysing the percentage of the number of factories, fixed capital, number of workers and the value of output of the food-processing industries to total industries in the states/Union Territories, we find that food-processing industry forms an important part of the industrial set up in some states. Taking the example of the Northeast, where Food Processing Industry (F.P.I) is of special importance, F.P.I constituted in 1980-81, about 49% of total

factories, 20% of total fixed capital, 58% of total workers and 68% of total value of output. This composition changed to about 36%, 26%, 48% and 47%, of total factories, fixed capital, workers and output respectively in 1997-98. The change in the importance of F.P.I in the Northeast follows the trend observed in F.P.I at the national level where there is decrease in the proportion of the number of factories, workers and value of output but increase in the proportion of fixed capital of F.P.I in the industrial set up. This trend is also observed in the other states. This shows the growing importance of large factories with substantial capital investment in the F.P.I. This phenomenon can be understood in the macroeconomic framework, where more emphasis has been given to consolidation and integrated production. This trend of increasing capital intensiveness in the Food Processing Industry is of special significance, especially in the case of poor states such as Northeast, where F.P.I contributes significantly in the employment generation. Because poor states have always been given special assistance to increase the employment in their economy and increasing capital intensiveness without proportionate increase in the employment is certainly a cause of worry. Food Processing Industry (F.P.I) which has been known as the labour intensive industry contributed significantly in the industrial set up with relatively small amount of fixed capital.

Observing the trend of the proportionate contribution of food-processing industry to the all industries, we find that States like Goa, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra and Orissa followed the national trend of decrease in importance of food-processing industry in terms of number of workers in the pre-reform period. But these states witnessed increase in the proportion of workers in F.P.I in the post-reform period, indicating the revival of F.P.I in these states. States like Gujarat, West



Bengal and Delhi showed continuous increase in the proportion of workers in F.P.I to all industries. Most spectacular change was observed in the case of West Bengal where Food Processing Industry increased its work force contribution in the industrial set up to 17.63% in 1997-98 from 7.76% in 1990-91. Side by side there was decrease in importance of F.P.I in terms of number of factories and value of output in west Bengal. The increase in proportion of fixed capital and workers in F.P.I indicates that West Bengal is giving relatively greater importance to F.P.I. The case of increasing capital intensiveness in the F.P.I was also observed in the agriculturally rich states of Punjab and Haryana.

Table 4.1

## Proportion of Food Processing Industry to all industries in the state

	NUMBER OF FACTORIES			FIXED CAPITAL			NUMBER OF WORKERS			VALUE OF OUPUT		
	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98
ANDHRA PRADESH	25.84	29.18	28.01	5.61	2.51	8.80	18.74	15.43	13.70	23.98	23.53	20.99
NORTH EAST	48.88	39.86	36.28	19.57	21.63	25.51	58.42	56.12	47.89	68.01	50.43	46.53
BIHAR	16.85	9.39	8.25	0.55	1.41	1.85	13.34	5.27	4.69	4.62	3.28	4.69
GOA	13.76	7.33	7.62	2.12	4.14	6.09	16.20	7.68	9.00	5.94	3.85	3.71
GUJARAT	10.77	9.47	9.01	4.87	2.76	2.43	9.40	10.03	10.32	14.24	12.72	10.83
HARYANA	10.62	18.47	15.47	2.08	3.14	5.86	10.36	15.35	11.62	9.20	13.84	10.76
HIMACHAL PRADESH	8.67	7.45	8.15	0.85	0.36	2.54	2.56	1.27	9.62	3.08	3.24	9.03
JAMMU AND KASHMIR	11.01	21.28	17.07	2.07	2.03	2.41	8.33	17.85	11.40	20.04	30.27	28.01
KARNATAKA	18.32	18.44	16.31	7.30	6.39	4.56	20.49	13.19	8.70	15.81	14.21	11.36
KERALA	18.56	16.48	16.71	2.76	2.82	5.48	41.93	34.95	37.35	16.85	18.84	20.72
MADHYA PRADESH	26.35	21.55	23.62	0.88	2.18	3.22	10.92	8.81	10.31	9.30	13.50	11.65
MAHARASHTRA	9.44	9.73	10.00	5.65	5.04	6.12	9.11	8.89	12.15	9.38	10.14	10.74
ORISSA	25.40	21.77	22.48	1.26	0.75	1.80	8.34	6.33	8.60	7.14	5.20	6.98
PUNJAB	13.13	20.19	20.05	3.87	6.38	7.18	19.12	15.98	14.85	23.13	21.36	20.70
RAJASTHAN	12.98	10.39	8.87	2.25	1.78	2.95	7.62	4.69	4.40	12.60	10.63	10.72
TAMIL NADU	23.89	21.60	18.82	5.75	6.83	5.18	17.65	12.67	11.90	12.94	10.62	11.86
UTTAR PRADESH	26.82	22.96	22.37	5.63	6.82	6.63	34.75	26.13	23.14	25.28	19.48	15.27
WEST BENGAL	16.12	15.27	15.10	2.59	1.99	4.05	7.43	7.76	17.63	9.40	10.53	9.46
CHANDIGARH	12.38	10.17	9.44	9.35	7.63	2.63	8.05	6.01	2.48	26.20	13.17	7.94
DELHI	3.42	2.64	3.17	2.38	7.37	7.53	4.87	5.10	6.55	19.63	14.90	14.17
TOTAL ALL STATES AND U.T'S	17.69	17.96	16.97	4.04	4.14	5.16	16.59	13.85	14.35	13.84	13.57	12.77

Source- calculated from the data provided by the various issues of Annual survey of Industries

While Punjab showed continuous decrease in importance of F.P.I in terms of value of output and workers, in the case of Haryana there was greater contribution of F.P.I in the output and workers in pre-reform period than in the post reform period.

We can say that F.P.I received greater capital investment in the post reform period than all industries. The greater capital investment without proportionate increase in the value of output of F.P.I indicates a decrease in the capital productivity in F.P.I. This may be because most of the capital investment represents future capability and its effects are not visible immediately.

#### **4.3. Distribution of Food Processing Industry: -**

The distribution pattern of F.P.I followed the pattern of general industrial structure. States of Maharashtra, Andhra Pradesh, Tamil Nadu, Uttar Pradesh and Gujarat accounted for about 58% of total factories, 66% of fixed capital, 58% of total workers and 59% of total output of food-processing industry in 1980-81. This changed to 64% of total factories, 64% of fixed capital, 55% of total workers and 61% of total output in 1997-98. Even within these states, variations were observed. While Andhra Pradesh occupied first place in terms of number of factories, its contribution in the number of factories to all states increased over time. In terms of fixed capital Maharashtra occupied first position throughout the period of analysis. In terms of number of workers, however, Uttar Pradesh occupied first position in 1980-81 and also in 1990-91, but in 1997-98 Andhra Pradesh occupied first position closely followed by Uttar Pradesh and Maharashtra. The distribution as shown in table 4.2 highlights the fact that concentration of workers in food-processing industry has decreased over time and new states are emerging and increasing their percentage share of workers in F.P.I. The

increase in percentage share of Andhra Pradesh in the workers in F.P.I is due to increase in absolute number of workers over time. Decrease in the percentage share of workers in F.P.I of Uttar Pradesh can be attributed to the decrease in the overall importance of F.P.I in the state. So the relative change in position of states was due to both, decrease in number of workers in some states and increase in number of workers in some states. The noticeable point is that Kerala, which had very small share of factories, fixed capital and value of output of F.P.I had a high share of workers in the F.P.I. The number of workers in F.P.I in Kerala has increased over the period, although there has been some decrease in the number of workers between 1980-81 and 1990-91 but in the post liberalization period the increase in number of workers had offset the decrease in number of workers in pre-liberalization period. This increase in number of workers in Kerala in the post reform period has also been accompanied by increase in the fixed capital. So we can say that capital investment in Kerala has been able to generate relatively greater employment than all other states.

Table 4.2

## Distribution of Food Processing Industry in states as % of all states

	NUMBER OF FACTORIES			FIXED CAPITAL			NUMBER OF WORKERS			VALUE OF OUPUT		
	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98
ANDHRA PRADESH	16.92	22.51	23.06	8.46	7.15	12.94	10.58	12.42	12.90	9.05	10.70	11.48
NORTH EAST	5.39	3.91	3.80	6.01	5.43	6.01	6.84	6.90	6.21	5.21	4.16	3.86
BIHAR	4.20	1.62	1.20	1.56	1.77	1.23	3.81	1.70	0.89	1.70	1.16	1.31
GOA	0.15	0.10	0.11	0.28	0.20	0.45	0.18	0.13	0.16	0.15	0.11	0.15
GUJARAT	7.08	5.26	5.29	10.84	6.54	7.25	5.38	6.04	6.19	12.09	9.61	11.10
HARYANA	1.55	2.88	2.73	1.65	2.08	2.92	1.36	3.34	2.39	2.04	3.75	3.38
HIMACHAL PRADESH	0.09	0.11	0.21	0.14	0.07	0.40	0.04	0.05	0.41	0.05	0.10	0.39
JAMMU AND KASHMIR	0.21	0.25	0.31	0.17	0.14	0.15	0.19	0.22	0.23	0.26	0.37	0.34
KARNATAKA	5.79	5.53	4.98	7.84	5.60	5.25	6.19	4.67	3.76	4.86	4.84	4.68
KERALA	3.32	2.91	3.59	1.83	1.36	2.11	9.75	9.17	10.11	4.18	3.14	3.99
MADHYA PRADESH	5.39	4.33	4.40	1.53	4.08	3.21	2.52	2.92	3.05	2.70	5.26	4.97
MAHARASHTRA	8.63	7.70	9.01	22.36	20.23	21.67	9.00	9.28	12.36	16.01	17.05	17.97
ORISSA	2.33	1.62	1.63	0.78	0.64	1.28	0.86	0.85	1.07	0.87	0.69	1.00
PUNJAB	4.38	6.41	5.79	4.33	6.55	5.26	3.35	5.73	4.61	6.83	7.30	6.39
RAJASTHAN	2.05	1.77	1.96	2.50	1.64	2.06	1.14	0.98	0.87	2.41	2.47	2.94
TAMIL NADU	14.43	16.02	16.31	9.72	14.08	8.38	11.27	11.17	11.06	10.17	8.04	9.45
UTTAR PRADESH	11.26	12.13	10.40	14.43	18.14	13.66	21.32	18.62	12.48	11.32	14.07	10.58
WEST BENGAL	6.02	4.34	4.58	4.53	3.06	4.92	5.62	5.16	10.68	6.68	4.70	3.82
CHANDIGARH	0.15	0.15	0.14	0.12	0.06	0.03	0.07	0.06	0.04	0.29	0.16	0.10
DELHI	0.65	0.46	0.50	0.94	1.17	0.81	0.52	0.60	0.55	3.14	2.30	2.09
ALL STATES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source-calculated from the data provided by the various issues of Annual survey of Industries

#### 4.4. Structure of food-processing industry: -

Increase in the capital intensity in the F.P.I has been one of the most important phenomena. As has been observed in the chapter 3, the growth of the capital intensity increased tremendously in the post reform period. Analyzing the state level structural change we find that capital intensity has shown continuous increase in all the states, and Compound Annual Growth Rate of capital intensity was higher during the post reform period. In 1980-81 highest capital intensity was found in Himachal Pradesh and lowest in Kerala. Industrially developed states like Maharashtra, Gujarat and Karnataka had

high capital intensity than national average. However agriculturally developed states of Punjab and Haryana showed moderate level of intensity. Less developed and agriculturally dominant states of Uttar Pradesh, Bihar and Madhya Pradesh have shown the low level of capital intensity. The states/Union Territories, which showed the higher capital intensity than national average in 1980-81, had a share of 50.89% of total fixed capital and 36.23% of total workers. In 1990-91, the share of states having higher capital intensity than national average constituted about 47.91% of fixed capital and 32.24% of total number of workers. This shows that the relative value of states having capital intensity higher than average of all states has decreased while those having capital intensity less than national average has increased in the period 1980-81 and 1990-91. The decrease in the disparity between the states in this period in terms of capital intensity has been revealed by the decrease in the Coefficient of Variation. The Coefficient of Variation of capital intensity decreased from 60.9 percent in 1980-81 to 45.3 percent in 1990-91. In 1990-91 there was some re-organization among states. Maharashtra showed high increase in capital intensity to occupy first position, while Kerala showing very low increase in capital intensity again occupied lowest position. However the highest growth in capital intensity between the period 1980-81 and 1990-91 was observed in the case of Bihar. As observed in the 3<sup>rd</sup> chapter, the growth in the capital intensity between the period 1980-81 to 1990-91 was more due to the decrease in the number of workers than due to increase in the fixed capital, except in the case of states of Haryana, Punjab, Himachal Pradesh and Andhra Pradesh where increase in capital intensity was accompanied by increase in the number of workers.

Table 4.3

**Capital Intensity (Rupees Lakhs)**

	1980-81	1990-91	1997-98
ANDHRA PRADESH	0.107	0.203	0.678
NORTH EAST	0.117	0.277	0.654
BIHAR	0.055	0.366	0.936
GOA	0.205	0.543	1.959
GUJARAT	0.269	0.381	0.790
HARYANA	0.162	0.219	0.823
HIMACHAL PRADESH.	0.461	0.487	0.661
JAMMU AND KASHMIR	0.116	0.233	0.451
KARNATAKA	0.169	0.422	0.942
KERALA	0.025	0.052	0.141
MADHYA PRADESH	0.081	0.492	0.710
MAHARASHTRA	0.332	0.767	1.184
ORISSA	0.121	0.266	0.804
PUNJAB	0.173	0.402	0.771
RAJASTHAN	0.294	0.592	1.607
TAMIL NADU	0.115	0.444	0.512
UTTAR PRADESH	0.091	0.343	0.739
WEST BENGAL	0.108	0.208	0.311
CHANDIGARH	0.236	0.361	0.543
DELHI	0.239	0.684	0.995
ALL STATES	0.134	0.352	0.675

Source- calculated from the data provided by the various issues of Annual survey of Industries

In the post-reform period there was tremendous increase in capital intensity and it was observed in all the states. Goa had highest capital intensity followed by Rajasthan and Maharashtra. Kerala retained the lowest position and showed slowest growth in intensity. The difference in the capital intensity between the highest and lowest ranking states, had also widened in the post-reform period. The states having capital intensity higher than average of all states accounted for about 65% of fixed capital and 59% of total workers in food-processing industry in 1997-98. So in general, increase in the capital intensity in the post-reform period was more due to faster increase in the fixed capital than workers employed in selected states as

compared to 1990-91 where increase in the capital intensity was accompanied by the decrease in the number of workers employed in Food-Processing Industry. The increase in the disparity between states is also indicated by the increase in the Coefficient of Variation for capital intensity from 45.3 percent in 1990-91 to 50.8 percent in 1997-98 as given in table 4.4. In the states and Union Territories like Haryana, Uttar Pradesh, Bihar and Chandigarh , the increase in the capital intensity was accompanied by decrease in the number of workers. In the post-reform period, very high increase in the fixed capital was observed in the case of states, which have a small share in the F.P.I like Himachal Pradesh, Goa and Orissa. Among the larger states, Maharashtra and Andhra Pradesh also witnessed growth, higher than that of national average in the fixed capital in F.P.I. The states having growth rate higher than the national average increased their percentage share in the fixed capital in Food Processing Industry from 48% to 62%.

Table 4.4

**Coefficient of Variation of capital intensity in Food Processing Industry**

C.V as %		
1980-81	1990-91	1997-98
60.987	45.304	50.868

Source- calculated from the data provided by the various issues of Annual survey of Industries

Some states like Madhya Pradesh, Punjab and Tamil Nadu that had high growth rate in the pre-reform period slowed down in the post reform period. This may be due to the excess capacity generated in pre-reform period which they utilized and did not increase their capital base in the post-reform period.

Highest growth in the number of workers employed was observed in Himachal Pradesh, a state that had also registered an increase in the fixed

capital in F.P.I. This increase was due to opening up of large number of new factories, which increased the capital and number of workers employed in the state. This highlights the fact that Himachal Pradesh, because of natural advantage in the produce of horticultural products, was able to attract new investment.

High growth in the number of workers was also observed in the case of West Bengal and Maharashtra. Political regime in West Bengal is generally not considered to be favorable to the process of liberalization and globalization of the economy. As a result, general expectations arise that there would be slow growth in new investment in the post reform but the high growth in the fixed capital accompanied with the growth in employment in F.P.I. shows that other factors would be more important in attracting investment than the assumed unfavourableness of the political regime.

The measurement of inequality among other states in case of capital intensity, with the help of Theil's Index shows that, inequalities are not large. However the index shows highest value in 1980-81, decrease in 1990-91 and again rise in 1997-98, which brings out the fact that post-reform period is benefiting some states more than others. The correlation coefficients as given in table 4.6, points out to the fact that there is positive correlation between per capita income and per capita fixed capital in the Food Processing Industry. The correlation has improved over the period indicating that developed states are in better position to attract the investment in the Food Processing Industry.



Table 4.5

**Results : Correlations Coefficients for Food Processing Industry**

	P.N.S.D.P VS P.C.F.C.	P.N.S.D.P. VS W	P.C.F.C. VS W
1980-81	0.602	0.168	0.475
1990-91	0.679	0.408	0.624
1997-98	0.786	0.445	0.562

P.N.S.D.P= Percapita Net State Domestic Product of the States

P.C.F.C= Percapita fixed capital in the Food Processing Sector in the States

W =Percentage of Workers in the Food Processing Sector to the Total Population in the States

Source-Statistical Abstracts and Annual Survey of Industries

Note-All Correlations are Significant at 5 percent Level

The correlation between per capita income and percentage of workers in F.P.I. to the total population in the state is weak but positive. Although this correlation has increased over the period it still remains weak, indicating that, employment in this industry is not significantly governed by the increase in the per capita income. However, with the increase in income and consequent increase in the demand for processed foods some improvement in the employment in the industry is noticed. Another noticeable fact is that correlation between per capita fixed capital and percentage of workers employed in F.P.I. has decreased in the post reform period, which shows that relation between employment generation and capital investment has become weaker in the post reform period. Such results point towards the dilemma of liberalization and globalization.

**4.5. Productivity and efficiency: -**

Increasing productivity has been one of the major goals of policy. One of the objective of the study was to analyse whether factor use efficiency has increased in the resource rich F.P.I. The trend in the capital and labour productivity shows that while labour productivity continued to increase

throughout the period, capital productivity first showed increase followed by decline. The decrease in the capital productivity during the post reform period indicates that there has been high growth in the fixed capital in the post-reform period but is not leading to a corresponding increase in productivity. From the analysis in chapter 3, it is revealed that more and more capital is going in to substitute labour than in technological up-gradation in the F.P.I. This effect is also highlighted by the continued increase in the capital intensity and labour productivity. Where most of the states and Union Territories have showed decrease in the capital productivity during the post-reform period, the states and Union Territories like Bihar, Gujarat, Madhya Pradesh, Punjab, Tamil Nadu, Chandigarh and Delhi have witnessed increase in the capital productivity in the post-reform period. Among these states and Union Territories only Gujarat and Chandigarh witnessed continued rise in capital productivity between 1980-81 and 1997-98. It also appears that period of high growth in capital growth is not accompanied by corresponding increase in the capital productivity. The states of Maharashtra and Uttar Pradesh which are the two most important states in terms of fixed capital have recorded capital productivity less than the national average of all states throughout the period between 1980-81 and 1997-98. Most of the states have registered an increase in the capital productivity in the eighties followed by a decline in the post reform period. The states and Union Territories that have shown an increase in the post reform period are Tamil Nadu, Bihar, Madhya Pradesh, Delhi and Chandigarh. All these states have registered a decline in the share of fixed capital to all India figures. This indicates that these states have utilized the factors of production of F.P.I laid in the pre reform period better than in the post reform period.

Table 4.6

## Productivity in Food Processing Industry

	Capital Productivity			Labour Productivity (Rs Lakhs)		
	1980-81	1990-91	1997-98	1980-81	1990-91	1997-98
ANDHRA PRADESH	6.37	10.54	6.04	0.82	2.14	4.20
NORTH EAST	5.16	5.40	4.37	0.73	1.50	2.93
BIHAR	6.47	4.63	7.24	0.43	1.70	6.95
GOA	3.18	3.73	2.32	0.78	2.03	4.66
GUJARAT	6.64	10.36	10.42	2.14	3.95	8.44
HARYANA	7.35	12.72	7.88	1.43	2.79	6.65
HIMACHAL PRADESH.	2.29	9.58	6.70	1.27	4.67	4.54
JAMMU AND KASHMIR	9.22	18.25	15.07	1.28	4.26	6.98
KARNATAKA	3.69	6.09	6.06	0.75	2.57	5.86
KERALA	13.58	16.27	12.87	0.41	0.85	1.86
MADHYA PRADESH.	10.50	9.09	10.54	1.02	4.48	7.68
MAHARASHTRA	4.26	5.94	5.64	1.70	4.56	6.85
ORISSA	6.62	7.59	5.36	0.96	2.02	4.42
PUNJAB	9.40	7.86	8.27	1.95	3.17	6.54
RAJASTHAN	5.74	10.62	9.72	2.02	6.30	16.03
TAMIL NADU	6.23	4.03	7.68	0.86	1.79	4.03
UTTAR PRADESH	4.67	5.47	5.27	0.51	1.88	4.00
WEST BENGAL	8.77	10.82	5.28	1.13	2.26	1.69
CHANDIGARH	14.81	18.52	20.06	4.20	6.68	11.18
DELHI	19.95	13.86	17.47	5.70	9.49	17.82
ALL STATES	5.95	7.04	6.80	0.80	2.48	4.71

Source- calculated from the data provided by the various issues of Annual survey of Industries

In the case of capital productivity also, the inequality as measured by Theil's Index given in table 4.7 experienced a decline between 1980-81 and 1990-91, and an increase during the post reform period. However the inequality was higher in the case of labour productivity. The Theil's Index values for the labour productivity was highest in 1980-81 recording a value of .28; thereafter it remained constant at the value of .17 for 1990-91 and 1997-98. In general the states and Union Territories, which recorded high value in the capital productivity, also recorded high value in the labour productivity. An exception was observed in the case of Kerala, which recorded high capital

productivity but low labour productivity. In the Kerala F.P.I is labour intensive and where capital plays a small role as compared to labour, the output value per unit of capital shows a high value as compared to labour. Though, in general, labour productivity has increased in all the states and Union Territories during the period 1990-91 and 1997-98, Himachal Pradesh and West Bengal experienced decline during this period. This can be attributed to high growth in worker employed during this period in these states.

Table 4.7

**Coefficients of variation of Capital And Labour Productivity**

	Capital Productivity	Labour Productivity
1980-81	55.74	87
1990-91	47.274	61.999
1997-98	52.455	62.834

Source- calculated from the data provided by the various issues of Annual survey of Industries

The states and Union Territories like Gujarat, Haryana, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Chandigarh and Delhi have constantly shown very high capital productivity throughout the period under consideration. These states and union territories have also recorded high capital productivity throughout the period. So these states and Union Territories were able to utilize both the factors of production efficiently.

**4.6. Composition of Food Processing Industry : -**

Composition of Food Processing Industry has undergone significant change in the post-reform period. Most of the factories in 1990-91 were accounted by grain milling, which contributed about 46.7 percent of total number of factories in Food Processing Industry. Manufacture of vegetable oils and fats/other than hydrogenated accounted for about 15.5 percent of

total factories. However in terms of fixed capital, manufacture and refining of sugar accounted for about 44.1 percent of total fixed capital in Food Processing Industry. This points out to the fact that large factories dominated manufacture and refining of sugar. Other sectors like grain milling, manufacture of vegetable oils and fats/other than hydrogenated, dairy products, and processing of tea accounted for 10.3 percent, 9.57 percent, 8.46 percent, and 7.61 percent of fixed capital in Food Processing Industry respectively. The dominance of small sized factories was witnessed in the grain milling, which accounted for about 46.76 percent of factories but had only 10.31 percent of fixed capital of Food Processing Industry in 1990-91. The concentration, which was witnessed in the case of factories and fixed capital, was not witnessed in the case of workers and value of output. However some sectors because of widespread processing accounted for most of the workers and value of output in Food Processing Industry. The grain milling, manufacture and refining of sugar, production of indigenous sugar, khandsari etc, manufacture of vegetable oils and fats/other than hydrogenated, processing of tea, and manufacture of ice accounted for about 80% of workers and about 75.48% of total output of Food Processing Industry in 1990-91.

The composition of Food Processing Industry, as shown in figure 4.1 and 4.2 has undergone change during post reform period, where, new sectors increased their relative position and old sectors lost their dominant position. This redistribution was witnessed in nearly all the sectors of Food Processing Industry. The grain milling, which accounted for about 46.76 percent of total factories, 10.31 percent of total fixed capital of Food Processing Industry in 1990-91, witnessed reduction in its percentage contribution in factories to 45.08 percent and in fixed capital 8.89 percent in the 1997-98. However its

Figure 4.1

**CHANGE IN COMPOSITION OF FOOD PROCESSING SECTOR : NO. OF FACTORIES AND FIXED CAPITAL**

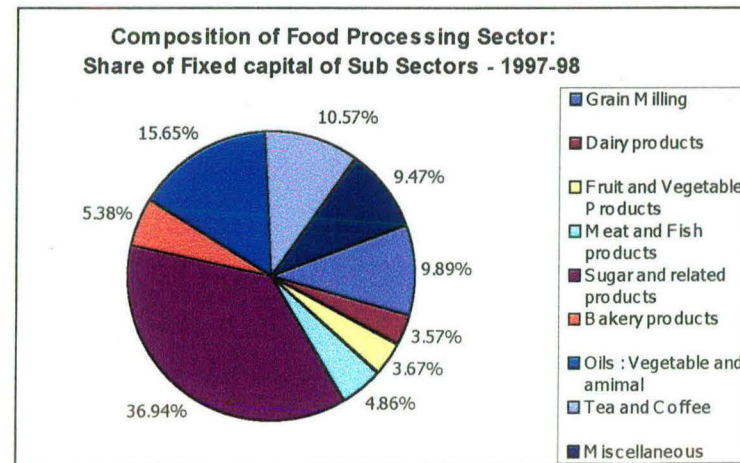
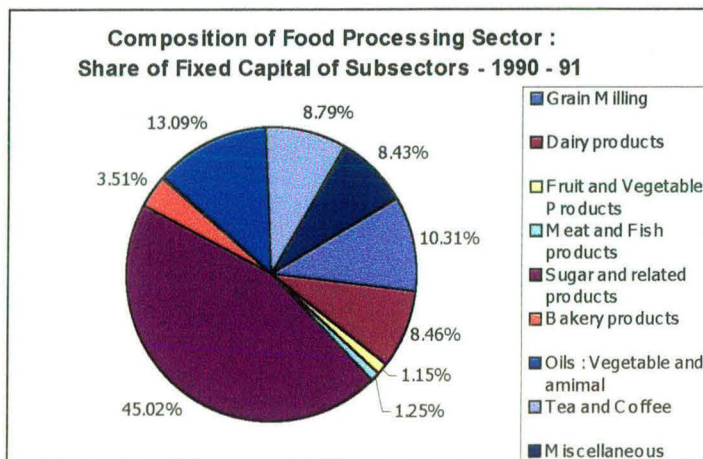
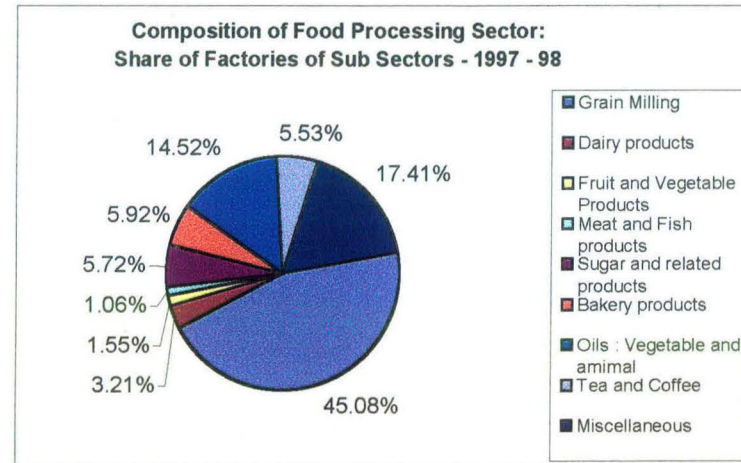
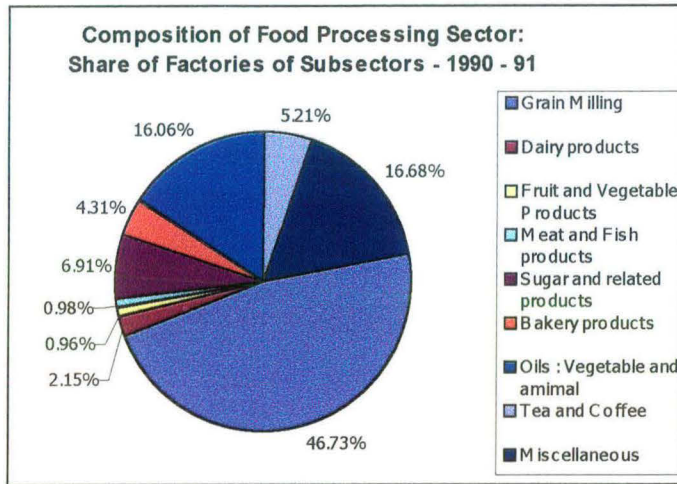
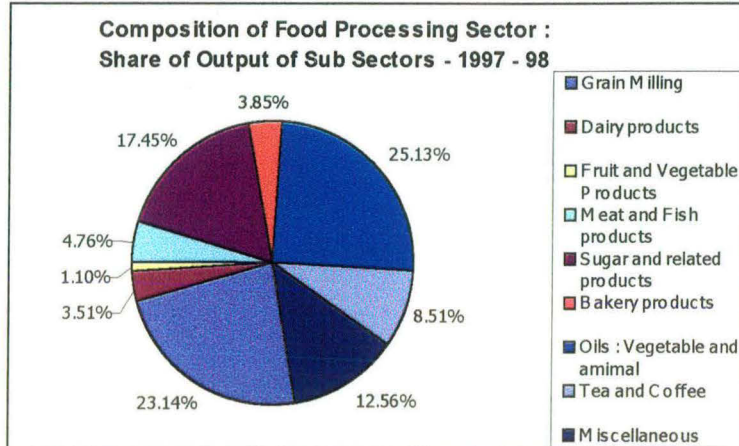
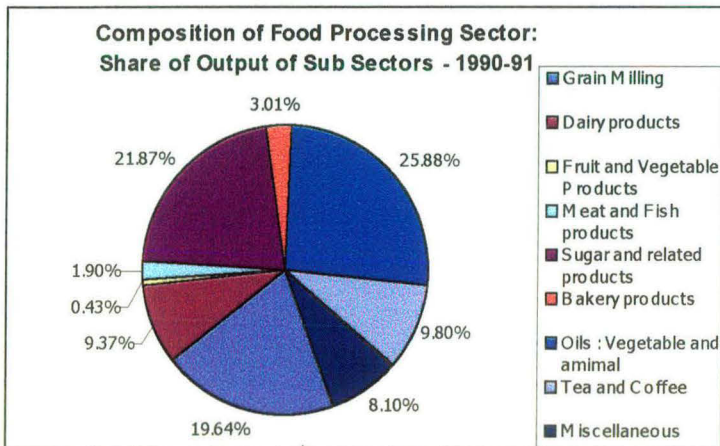
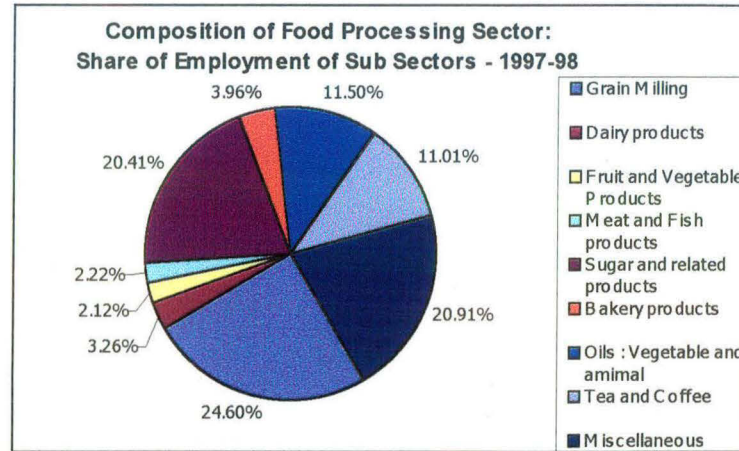
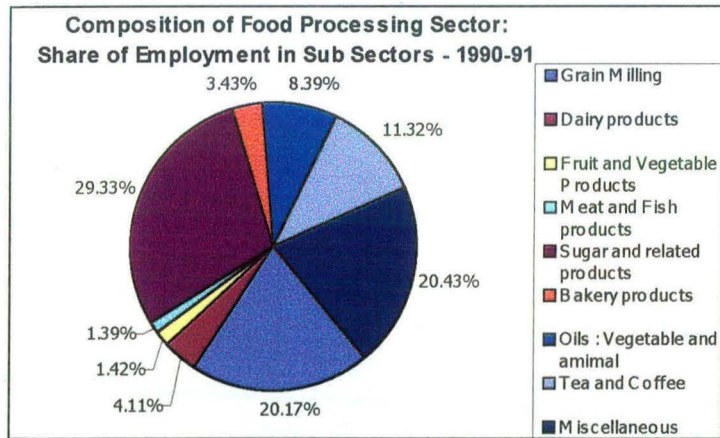


Figure 4.2

CHANGE IN COMPOSITION OF FOOD PROCESSING SECTOR : EMPLOYMENT AND OUTPUT



contribution in workers employed and output, increased from 21.15 percent to 24.25 percent and from 19.66 percent to 20.18 percent in the output contributed to Food Processing Industry between 1990-91 and 1997-98. Similar changes were also witnessed in the other sectors. The measure of the degree of inequality in various sectors as given by Theil's Index shows that, highest degree of inequality was found in case of a number of factories followed by fixed capital. The inequality was lowest in case of workers employed.

Between 1990-91 and 1997-98 there was general decrease in the Theil's Index showing decrease in the concentration, maximum decrease was observed in the case of fixed capital, which shows that new investment was taking place in the non traditional sectors, increasing the diversification in the Food Processing Industry in the 1997-98.

This concentration of different sectors in different states or regions would be because of nature of agricultural produce in that region and also because of history of industry in that state, which has attracted the Food Processing Industry. As most of the food products are of perishable and semi perishable type we could expect that availability of agriculture produce on one hand and market demand on other would play an important role in concentration of different sectors of F.P.I. in different states.

Distribution pattern varied between processing in different sectors of Food Processing Industry. Processing of dairy products, grain milling, manufacture of bakery products, manufacture of vegetable oils and fats/other than hydrogenated, manufacture of ice, and manufacture of products not included in the n.e.c was important in most of the states and Union Territories. In 1990-91, slaughtering, preparation and preservation of meat was a significant sub sector only in states of Maharashtra, Uttar Pradesh,



Kerala, and Union Territory of Delhi. Maharashtra alone accounted for about 87% of total fixed capital in this sector. Similarly manufacture of animal oils and fats, manufacture of fish oil was carried out only in Uttar Pradesh in 1990-91, which stopped manufacturing of these products in 1997-98. Concentration of industries was witnessed in other sectors also, as states of Karnataka, Andhra Pradesh and Tamil Nadu accounted for about 99% of fixed capital and 97% of total workers employed in the manufacture of coffee.

In the post liberalization period, redistribution was witnessed in most of the sectors. In some sectors there was change in the leading position of the states. Maharashtra was the leading state in terms of fixed capital in 1990-91 in slaughtering, preparation and preservation of meat, manufacture and refining of sugar, manufacture of cocoa products and sugar confectionery, manufacture of prepared animal and bird feed, but it lost its leading position in all these sub sectors in 1997-98 sectors except in the slaughtering, preparation and preservation of meat. On the other hand Maharashtra it became leading state in the manufacturing of dairy products, canning and preservation of fruits and vegetables, and manufacture of ice.

Redistribution among the states was observed in terms of diversification and specialization. Theil's Index shows the states, diversifying and consolidating.

Table 4.6 shows that in the fixed capital, Bihar, Karnataka, Kerala, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal witnessed consolidation. These states witnessed higher capital growth in the traditional sectors than investment in the other sectors, while others states like Tamil Nadu, Goa, Bihar and Union Territory of Chandigarh showed diversification, that is, they were able to attract investment in new sectors or were able to increase relative importance of new sectors.

Table 4.6

**THEIL'S INDEX**

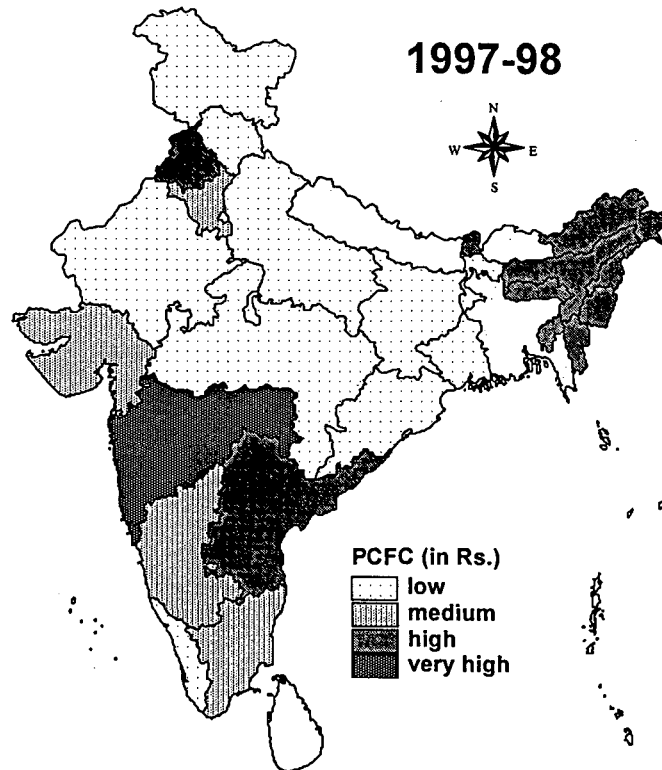
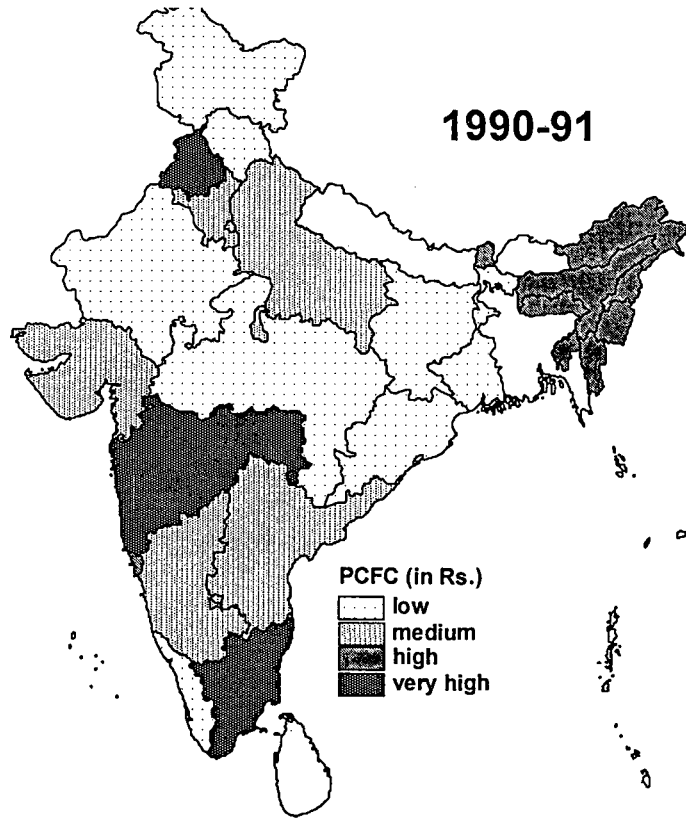
FIXED CAPITAL		
	1990-91	197-98
ANDHRA PRADESH	0.668	0.649
NORTH EAST	0.861	0.812
BIHAR	0.857	0.784
GOA	0.924	0.653
GUJARAT	0.689	0.676
HARYANA	0.729	0.706
HIMACHAL PRADESH	0.768	0.743
JAMMU AND KASHMIR	0.681	0.677
KARNATAKA	0.691	0.712
KERALA	0.642	0.669
MADHYA PRADESH	0.754	0.771
MAHARASHTRA	0.795	0.734
ORISSA	0.705	0.844
PUNJAB	0.672	0.701
RAJASTHAN	0.683	0.782
TAMIL NADU	0.827	0.705
UTTAR PRADESH	0.787	0.813
WEST BENGAL	0.771	0.834
CHANDIGARH	0.76	0.689
DELHI	0.742	0.73

Source-same as table4.5

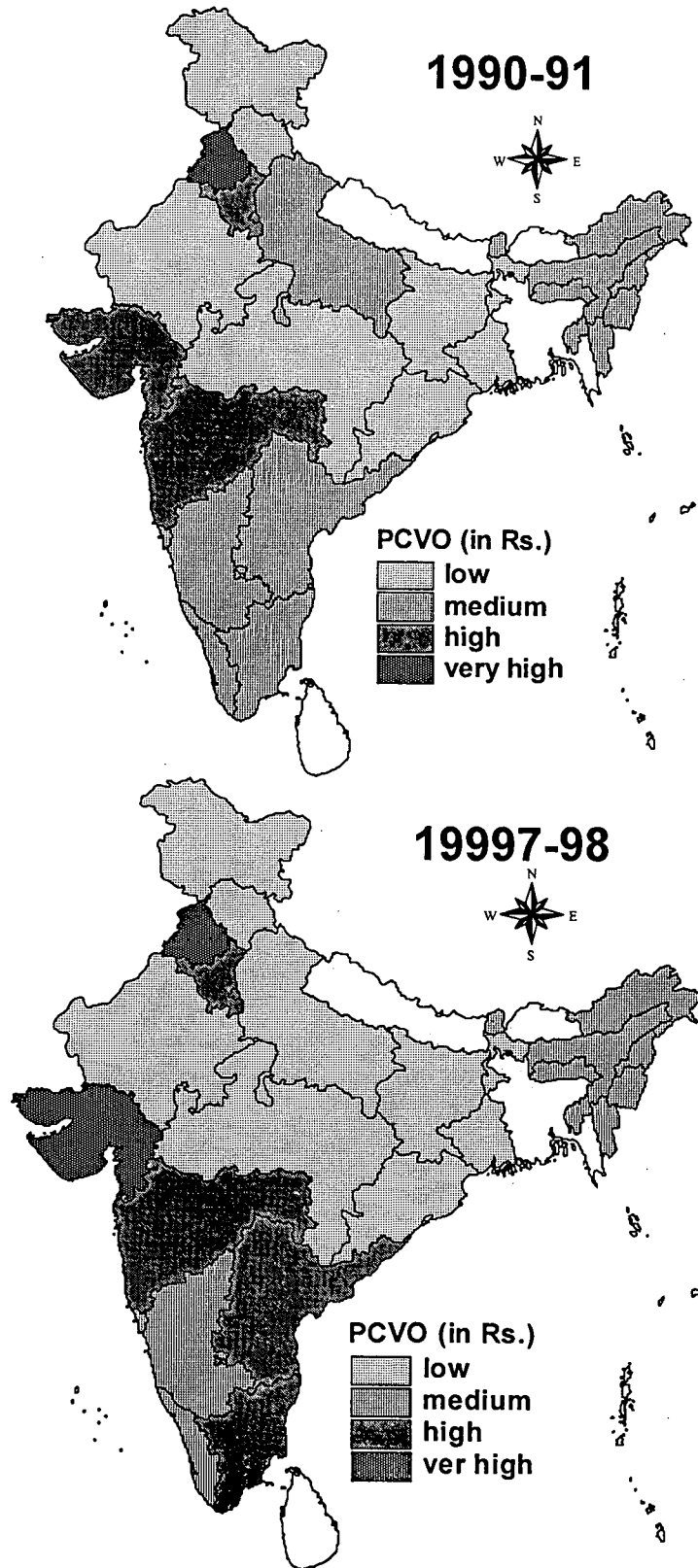
#### **4.7 Changes in the Distribution and Concentration of Food Processing Industry.**

Map 1 shows the regional distribution of per capita fixed capital in F.P.I in the two time periods of 1990-91 and 1997-98. Taking 1990-91 as pre reform period and 1997-98 as post reform period, we find that the two northern states of Jammu and Kashmir and Himachal Pradesh, and the three eastern states of Bihar, Orissa and West Bengal along with Madhya Pradesh and Rajasthan constitute the lowest class both in the pre reform and post reform period. In the post reform period, with the state of Uttar Pradesh and

# INDIA PER CAPITA FIXED CAPITAL IN FOOD PROCESSING INDUSTRY



# INDIA PER CAPITA VALUE OF OUTPUT IN FOOD PROCESSING INDUSTRY



union territories of Delhi and Chandigarh moving from the medium to the low class, most of the territory of north, central and east India, came under the lowest category in terms of per capita fixed capital in the F.P.I. An exception in the lowest class was the state of Kerala which being the only southern state had witnessed low levels of per capita fixed capital in the F.P.I. Among the states and Union Territories which recorded moderate level of per capita fixed capital in the pre reform period, Andhra Pradesh moved to the class of high level of per capita fixed capital in the post reform period. Among the states recording high and very high level of per capita fixed capital, Maharashtra had the distinction of being in the group of very high per capita fixed capital in both the periods. In the post reform period while Goa moved to the very high group, Punjab and Tamil Nadu moved to the high and moderate groups respectively. Increase in Goa's position was due to very high growth in the fixed capital in F.P.I. in the post reform period. Maharashtra's continued position in the group of very high-level of per capita fixed capital, despite moderate level of growth in the fixed capital in the post reform period indicates the already established strong base of F.P.I in the state. Importance of F.P.I in the North East is evident by the fact that, North East remained in the group of high level of per capita fixed capital in both the periods of analysis.

Analysing the regional distribution of per capita output in the F.P.I from map 2, we find that the agriculturally rich state of Punjab recorded very high level of per capita output both in the pre and post reform period. Gujarat which was in the group of high per capita output in the pre reform period moved to the very high category in the post reform period. Haryana, Maharashtra and Delhi remained in the group of high output per capita both in the pre and post reform period. Andhra Pradesh and Tamil Nadu recording

relatively high productivity growth moved from the medium to the high group in the post reform period. The Indo Gangetic Plain along with northern states of Himachal Pradesh and Jammu and Kashmir and states of Rajasthan, Madhya Pradesh and Orissa recorded low output per capita both in the pre and post reform period. As these states are referred to as backward states, any effort to reduce the regional disparities requires significant increase in the productivity. In case of these states, relative growth in per capita productivity has not been significant enough to remove the regional disparity in the post reform period. Hence, we find that the gap between the states recording highest and lowest per capita productivity in the post reform period has increased.

Concentration of fixed capital in the Food Processing Industry has increased in Andhra Pradesh, Haryana, Goa and Kerala in the post reform period and these states have recorded Location Quotient of more than 1 in the post reform period. Other than Goa, all the three states have recorded Location Quotient of less than 1 in the pre reform period indicating the increased preference for capital investment in F.P.I. in these states. Other states such as Maharashtra, Punjab, Tamil Nadu, Uttar Pradesh and region of North east and Delhi also recorded Location Quotient of more than 1 in the post reform period but in case of these Location Quotient has decreased in comparison to pre reform period. This indicates that the relative importance of capital investment in F.P.I. in these states has declined.

Table 4.7

**Location Quotient of Fixed Capital in Food Processing Industry**

STATES	1990-91	1997-98
ANDHRA PRADESH	0.61	1.71
NORTH EAST	5.22	4.94
BIHAR	0.34	0.36
GOA	1.00	1.18
GUJARAT	0.67	0.47
HARYANA	0.76	1.14
HIMACHAL PRADESH.	0.09	0.49
JAMMU AND KASHMIR	2.91	0.47
KARNATAKA	1.54	0.88
KERALA	0.68	1.06
M.P.	0.53	0.62
MAHARASHTRA	1.22	1.19
ORISSA	0.18	0.35
PUNJAB	1.54	1.39
RAJASTHAN	0.43	0.57
T.N	1.65	1.00
U.P.	1.65	1.29
WEST BENGAL	0.48	0.79
CHANDIGARH	1.84	0.51
DELHI	1.78	1.46

Source-same as table4.5

**4.8. Summing Up: -**

The most important feature of the Food Processing Industry that was observed, was the growing importance of capital in the industry. This trend was observed both in the pre and post reform period. Growth of the fixed capital exceeded that of the workers and output in the industry. Some regions witnessed tremendous increase in the capital investment in the industry in the post reform period. States like Andhra Pradesh, Goa, Himachal Pradesh, Kerala, Orissa and West Bengal witnessed more than 20 percent growth in the capital investment in the post reform period. Although there has been general increase in the employment in Food Processing Industry in the post reform period Bihar, Haryana and Uttar Pradesh witnessed decrease in the employment in the same period indicating the incidence of jobless growth

in the Food Processing Industry in these states in the post reform period. In case of Bihar, the jobless growth was also witnessed in the pre reform period and it was even greater in the post reform period. In the states of Uttar Pradesh, Bihar and Haryana agriculture contributes significantly to their economy. Incidence of jobless growth in the Food Processing Sector, which has significant linkages with agriculture, shows negative effect of reforms.

The objective of achieving greater capital productivity with the reforms, has not materialized in most of the states. Except the states of Bihar, Gujarat, Madhya Pradesh, Punjab, Tamil Nadu and Union Territories of Delhi and Chandigarh, all other states have witnessed negative growth in capital productivity in the post reform period.

The increased importance of Food processing Sector in the economy of states is visible from the increase in the share of fixed capital in the Food Processing sector to the all industries in the states. Increase in the share of fixed capital without the commensurate increase in the contribution of employment and output indicates the changing nature of Food Processing Industry in the post reform period. The mechanism of consolidation and diversification indicates that states are trying to maximize their benefits. Two southern states of Karnataka and Kerala witnessed consolidation while their neighbouring states witnessed diversification. Similarly consolidation was witnessed in the West Bengal, Orissa, Uttar Pradesh, Madhya Pradesh, Rajasthan and Punjab. All other states witnessed diversification in the Food Processing sector in the post reform period.

On the whole Food Processing sector is undergoing great transformation in the post reform period. However the increased pace of transformation in the post reform period was also due to preparation of the ground by partial liberalization in the years preceeding full fledged reforms.



Although some states were able to benefit more in the process of liberalization all the states were giving greater emphasis to capital investment in the Food Processing Sector.

## CHAPTER 5

### CONCLUSION

#### **5.1. Summary of Findings And Conclusion**

The crisis driven economic reforms were introduced as correctives for an industrializing economy in transition and introduced many fundamental changes in the objectives and strategy of development. As time progressed the changes introduced in the economy became significant enough to be characterized as a shift of paradigm. This paradigm introduced new dimensions in the economy. The objective of economic growth combined with economic efficiency became the foremost concern. The earlier concern about preventing concentration of economic power or attempting a redistribution of wealth has been abandoned. The state no more functions as a guiding force in the development process. Free play of market forces has evolved a new space where capital investment is considered as an engine of economy.

Food Processing Industry that was long considered as the labour intensive industry is transforming itself to accommodate greater capital investment. However greater capital investment seems to have been achieved at the cost of employment. Jobless growth, which was the characteristic feature of organized sector in the eighties, was also witnessed in the Food Processing Industry. The revival in the nineties was visible in the growth in employment. However the growth in employment was far surpassed by the growth in the capital investment indicating the increase in the capital intensity in the Food Processing Industry. Although increase in the Capital intensity in the Food Processing Industry was accompanied with increase in the labour productivity, it was also associated with negative growth in the capital productivity in the post reform period. The paradoxical situation of decrease

in capital productivity with increasing emphasis on capital investment is a matter of grave concern, as it amounts to more and more capital going in, to replace the labour rather than upgrading technology for production. The decrease in the growth of labour productivity along with increase in employment in the post reform period also requires attention of the policy makers.

The whole logic of improvement in the efficiency of utilization of factors of production with liberalization process does not seem to have happened in the case of Food Processing Industry. This warrants a closer look at the process of growth achieved in the Food Processing Sector.

Another emerging trend is the growing emphasis on the service side of the Food Processing sector. In the post liberalization period, where emphasis is on the development of branded products, increase in the emphasis on the service side indicates the strengthening of the forward linkages of the Food Processing sector. With the increase in the percapita spending capacity we can expect further strengthening of these linkages.

The unorganized sector, which is dominated by the Food Processing Sector, is losing its share in favour of its organized counterpart. Decline in the importance of unorganized food processing had started in the pre reform period and it became particularly severe after economic reforms. Thus the functioning of economic reforms marked a clear ascendancy of organized manufacturing sector over the unorganized one. Growth in the organized manufacturing spilling over to the unorganized did not materialize because scale of production in the unorganized sector were not sufficiently equipped to handle the pressures of competition under liberal industrial and trade policies. As expected by many, the informal Food Processing Industry did not experience a revival, even as ancillary units to the organized sector.

The objective of correcting the regional imbalances taking back seat, the market forces are free to take advantage of the structural parameters of the industrial production. The Food Processing Sector, which is widely distributed over the space, has shown growing importance in the economy of some states. Other than Karnataka and Union Territory of Chandigarh all other states witnessed increase in the share of fixed capital in the Food Processing Industry in the industrial set up in the post reform period. However the increase in the share of fixed capital was not accompanied with the corresponding increase in the share of value of output of the Food Processing Sector in the economy of the states. Only the states of Bihar, Himachal Pradesh, Kerala, Maharashtra, Orissa, Rajasthan, and Tamil Nadu witnessed increase in the share of output of Food Processing Industry to the total industrial setup in the post reform period. The share of workers in Food Processing Industry to all industries recorded increase in case of Goa, Himachal Pradesh, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa and West Bengal. An interesting point to note is that a majority of states also registered an increase in the share of F.P.I. in the industrial setup.

Food Processing Industry has been witnessing increase in the capital intensiveness. Maximum capital intensiveness was recorded in the case of Goa in the post reform period indicating tremendous increase in the capital investment in the state. States of Maharashtra and Rajasthan also witnessed high capital intensity in the post reform period. Increase in the capital intensity in most of the states was due to higher growth rate of capital investment than growth of employment. However states of Bihar, Haryana and Uttar Pradesh witnessed an increase in the capital investment but decrease in the workers employed in the Food Processing Industry in the post

reform period. This shows the paradoxical nature of capital investment in the Food Processing Industry in these states.

Inequality among the states, which was on the decrease in the pre reform period, again started increasing in the post reform period. Maximum inequality increase was observed in the case of capital productivity. Inequality among the states in the labour productivity was very high. Low labour productivity was observed in the states having large labour and low capital base as Kerala and it was particularly high in the case of Union Territories of Delhi and Chandigarh. The rich and industrially developed states recorded greater concentration of per capita fixed capital and also had high per capita output in the Food Processing Industry.

Food Processing Sector witnessed great transformation in the post reform period. However this transformation in the post reform period was as a result of due the partial liberalization undertaken in the mid - eighties. The achievement in terms of the significant increase in productivity, which was the rationale behind liberalizing of economy, did not materialize. The problem of regional disparity, as expected, could not be addressed by the market forces in the nineties as it got compounded during this time. Increased competition had resulted in marginalizing of the unorganized sector as a result of increased competition from the organized sector.

## **5.2 Policy Implications**

The restructuring of economy, if it is to be a success, must not only introduce correctives to eliminate weaknesses but also plan consolidation to build on the strengths that emerge from development experience. The reform process in India stresses the need to eliminate weaknesses, or what went wrong, but neglects the possibilities of building on strengths, or what turned right.

Two most important failures that emerge from the development experience in the post reform period are the neglect of regional disparity and the neglect of unorganized sector. The present agenda of reforms does not address these failures. Neglect of the problem of regional disparity raises question about the current development perspective and in future could threaten the economic and social stability of the country. Problems of unorganized sector is to be addressed urgently as these form an important base of our non farm activities in rural areas and is likely to be the answer for the increasing unemployment and underemployment within the agricultural sector. Repealing of the Monopolistic and Restrictive and Trade Practices Act on one hand and recommendations of the Abid Hussain Committee for dereservation of the small sector on the other are important in terms of the increased competition introduced within the industrial sector in general and Food Processing Industry in particular. It is indicated in our analysis that the scale of production of the unorganized and small sector cannot withstand the competition posed by the organized sector. Given this trend this phenomenon of gradual removal of protection given to unorganized and small-scale sector in the development process is of great concern.

It is important to note that in the earlier stages of industrialization, state intervention created the conditions for the development of industry by establishing a physical infrastructure through government investment or facilitating institutional changes. In the later stages of industrialization there was a change in the nature of state intervention. At one level, functional state intervention sought to correct market failures, and at another it interlinked activities and sectors and sought to promote balanced development across rural and urban areas and between developed and backward areas. In this manner state intervention constituted an integral part of their strategy of

industrialization which endeavoured to strengthen capabilities and develop institutions rather than rely on incentives of market alone.

In the era of economic liberalization, the emphasis was on inducing efficiency in the economy by allowing individuals households and firms more freedom to make economic decisions. This not only meant a reduced role for the state but also a transformation of its role from a regulator to a facilitator, primarily for private investment. It is clear that in the economy characterized by uneven development, which is moving towards rapid technological progress, ever-changing comparative advantage and imperfect market structures, the role of the state in the industrialization process remains vitally important and could account for the difference between success and failure.

### **5.3 Emerging Research Questions**

This analysis is not complete in itself and it raises several aspects and dimensions which could be considered for future research.

From the above analysis it emerges that the issue of capital intensiveness has become important in the Food Processing Sector in the post reform period. The impact of Foreign Direct Investment and multinationals in the transformation of the Food Processing Sector could be an area to be examined in greater details in the future.

The service side of the Food Processing Industry is being given increased attention in the post liberalization period. The promotion of sales and value added through development of branded products, packaging and advertisement in this industry could be considered an interesting area of analysis.

**APPENDIX I (A)****List of Goods In the Food Processing Sector Prohibited / Restricted for Import Till 1998**

**Prohibited :** - Tallow, fats and/or oils of animal origin, animal rennet

**Restricted:** - All consumer goods of industrial, agricultural, mineral or animal origin. Consumer goods include concentrates of alcoholic beverages, wines (tonic or medicated), saffron, cloves, cinnamon and cassia.

Consumer goods exclude asafoetida (hing), dry fruits including almonds and dates, edible wax for wax fresh fruits and vegetables, grape guard paper, prawn, shrimp and poultry feed, pulses, raw cashew nut, wheat, gluten, outboard motors, all edible oils excluding coconut oil, palm kernel oil, RDB palm oil and RDB palm stearin, coffee (roasted or decaffeinated in bulk packaging), dry fish, hilsa fish (chilled or frozen) and skimmed milk powder.

**Canalized:** - Coconut oil, RDB oil and RDB palm stearin –canalized through the State Trading Corporation of India Limited (S.T.C.) and Hindustan Vegetable Oil Corporation Limited (H.V.O.C.L.) Seeds (Copra, groundnut, palm, rapeseed, sunflower, soybean, safflower, cotton) canalized through STC and HVOCL Palm stearin, excluding crude palm stearin, palm kernel oil and tallow amines of all types– canalized through STC Cereals excluding feed grade maize for poultry or animals– canalized through Food Corporation of India (F.C.I.)

---



**APPENDIX I (B)**

**List of goods in the Food-processing Sector Prohibited/ Restricted for Export Till  
(1998)**

**Prohibited:** - Beef Tallow, fat and or oils of any animal origin excluding fish oil.

**Restricted:** - Cattle Deoiled groundnut cakes containing more than one percent oil and groundnut expeller cakes. Fresh and frozen silver pomfrets of weights less than 300 Gms

Fodder, including wheat and rice straw. Milk, baby milk and sterilized liquid milk. Pulses of all types, including lentils, grams, beans and flour made from them Paddy (rice in husk)

Rice bran, raw and boiled

Certain seeds and planting materials

Seaweeds of all types, including G.edulis but excluding brown seaweeds and egrophytes of Tamil Nadu coast origin in processed form.

Groundnut oil

Imported sugar

**Canalized:** - Gom Karaya - canalized through the Tribal Cooperative Marketing Federation Of India Limited (TRIFED)

Niger Seeds - canalized through the National Agricultural Cooperative Marketing Of India Limited (NAFED), TRIFED and National dairy Development Board (NDDB).

Onions - canalized through NAFED

**APPENDIX II****Industries in Food-processing Sector Reserved for the small scale sector till****1998**

Ice Cream

Pickles and chutneys

Vinegar

Rice milling

Dal (pulse) milling

Bread

Biscuits

Pastry

Confectionery (excluding chocolates, toffees and chewing gum)

Groundnut oil (except solvent extracted)

Sweetened cashew nut products

Poultry feed except in pellet form

Ground and processed spices other than spice oil and oleoresin spices

Tapioca sago

Tapioca Flour

Synthetic syrups

Saccharin (Other than cases of State Agro-Cooperatives and Growers Cooperatives)

Rapeseed oil (except solvent extracted)

Mustard oil (except solvent extracted)

Sesame oil (except solvent extracted)

**Packaging material: -**

Waxed paper, Corrugated paper and boards, Paper bags, Paper cups/ plates.

**APPENDIX III****Manufacture of Food Products**

<b>Industry Division</b>	<b>Description of industry.</b>
200	Slaughtering, preparation and preservation of meat.
201	Manufacture of dairy Products.
202	Canning and preservation of fruits and vegetables.
203	Processing, canning and preservation of fish.
204	Grain milling.
205	Manufacture of bakery products.
206	Manufacture and refining of sugar.
207	Production of indigenous sugar, boora, khandsari, gur etc.
208	Production of common salt.
209	Manufacture of cocoa products and sugar confectionery.
210	Manufacture of hydrogenated oils and vanaspati ghee etc
211	Manufacture of vegetable oils and fats / other than hydrogenated.
212	Manufacture of animal oils and fats, manufacture of fish oil.
213	Processing and blending of tea including manufacture of instant tea.
214	Coffee curing, roasting, grinding and blending etc.
215	Processing of edible nuts.
216	Manufacture of ice.
217	Manufacture of prepared animal and bird feed.
218	Manufacture of starch.
219	Manufacture of food products n.e.c.

## APPENDIX IV (A)

## India : Annual Growth Rate of Productivity And Capital Intensity

	Labour Productivity	Capital Intensity	Capital Productivity
1981-82	4.44	-3.40	8.12
1982-83	12.00	13.92	-1.68
1983-84	41.01	50.44	-6.27
1984-85	13.45	5.59	7.44
1985-86	5.68	0.84	4.81
1986-87	9.12	12.27	-2.80
1987-88	9.34	0.16	9.16
1988-89	11.42	4.43	6.69
1989-90	20.24	17.13	2.65
1990-91	-1.50	8.64	-9.33
1991-92	13.84	2.47	11.09
1992-93	6.99	4.07	2.80
1993-94	25.86	19.93	4.95
1994-95	4.35	17.17	-10.94
1995-96	-0.65	8.35	-8.31
1996-97	10.16	4.83	5.09
1997-98	8.74	15.78	-6.08

**APPENDIX IV (B)****Structural Parameters of All Industries**

	<b>FIXED CAPITAL PER FACTORY</b>	<b>FIXED CAPITAL PER WORKER</b>	<b>WORKER PER FACTORY</b>
	(Rs Lakhs)	(Rs. Lakhs)	
1980-81	34.31	0.55	62.66
1981-82	33.05	0.39	65.87
1982-83	42.73	0.63	67.76
1983-84	47.24	0.74	63.69
1984-85	50.46	0.80	62.83
1985-86	48.79	0.85	57.61
1986-87	53.62	0.90	59.28
1987-88	57.38	0.97	59.08
1988-89	57.01	0.98	57.91
1989-90	59.58	1.02	58.58
1990-91	67.20	1.17	57.24
1991-92	65.48	1.17	55.83
1992-93	71.17	1.28	55.65
1993-94	79.01	1.45	54.54
1994-95	88.34	1.56	56.66
1995-96	94.40	1.66	56.72
1996-97	99.86	1.81	55.04
1997-98	106.50	1.90	56.10

**APPENDIX IV ( C )****India : Annual Growth Rate of Variables of All Industries**

	<b>No. of factories</b>	<b>Fixed Capital</b>	<b>No. of workers</b>	<b>value of output</b>
1981-82	8.80	4.80	47.45	11.33
1982-83	-11.26	14.72	-29.19	15.36
1983-84	3.80	14.75	-2.44	1.99
1984-85	0.25	7.09	-1.09	5.19
1985-86	4.20	0.75	-4.47	3.75
1986-87	-3.03	6.56	-0.21	0.43
1987-88	4.74	12.08	4.39	7.32
1988-89	1.42	0.76	-0.58	10.68
1989-90	3.78	8.46	4.98	15.29
1990-91	2.03	15.09	-0.31	7.85
1991-92	1.91	-0.70	-0.60	11.13
1992-93	6.42	15.66	6.07	19.98
1993-94	1.76	12.97	-0.26	7.96
1994-95	1.16	13.12	5.09	11.40
1995-96	9.40	16.91	9.50	13.69
1996-97	-0.01	5.77	-2.97	-4.77
1997-98	0.74	7.43	2.69	14.05

**APPENDIX V (A)****Compound Annual Growth Rate of Productivity and Capital Intensity in Food Processing  
Industry**

	Capital productivity		Capital intensity		Labour productivity	
	1980-81 to	1990-91 to	1980-81 to	1990-91 to	1980-81 to	1990-91 to
	1990-91	1997-98	1990-91	1997-98	1990-91	1997-98
ANDHRA PRADESH	5.17	-7.65	6.60	18.81	10.12	10.10
NORTH EAST	0.44	-2.96	8.96	13.05	7.49	10.08
BIHAR	-3.30	6.60	20.91	14.33	14.84	22.29
GOA	1.62	-6.59	10.22	20.12	10.01	12.59
GUJARAT	4.55	0.09	3.53	10.98	6.31	11.46
HARYANA	5.63	-6.62	3.05	20.83	6.92	13.22
HIMACHAL PRADESH	15.38	-4.98	0.55	4.46	13.95	-0.40
JAMMU AND KASHMIR	7.07	-2.70	7.21	9.89	12.74	7.30
KARNATAKA	5.13	-0.06	9.57	12.16	13.15	12.47
KERALA	1.82	-3.30	7.58	15.26	7.59	11.85
MADHYA PRADESH	-1.43	2.15	19.76	5.38	15.94	8.01
MAHARASHTRA	3.37	-0.72	8.73	6.40	10.39	5.99
ORISSA	1.39	-4.86	8.21	17.10	7.76	11.78
PUNJAB	-1.77	0.73	8.81	9.73	4.98	10.92
RAJASTHAN	6.34	-1.26	7.27	15.33	12.04	14.28
TAMILNADU	-4.28	9.66	14.43	2.06	7.59	12.30
UTTAR PRADESH	1.59	-0.52	14.24	11.61	13.99	11.41
WEST BENGAL	2.12	-9.74	6.81	5.91	7.13	-4.08
CHANDIGARH	2.26	1.15	4.31	6.03	4.77	7.63
DELHI	-3.58	3.36	11.11	5.49	5.23	9.41
TOTAL ALL STATES AND U.T'S	1.69	-0.49	9.76	10.16	12.03	9.61





## BIBLIOGRAPHY

- Chadha, G.k. and Sahu, P.P. (2002): "Post Reform Set Backs in Rural Employment: Issues That Need Further Scrutiny;" Economic and Political Weekly; May 25; PP 1998-2026.
- Unni. Jeemol, Lalitha, N. and Rani Uma (2001); " Economic Reforms and Productivity Trends In Indian manufacturing"; Economic and Political Weekly; October 13, PP 3914-3922.
- Goldar, B. N (2000): " Employment Growth in Organized Manufacturing in India": Economic and Political Weekly, vol. 35. No.14, PP 1191-95.
- Goldar, B. N and Arup Mitra (1999): " Prductivity Growth in Informal Manufacturing Sector in India"; Presented at the Workshop on measurement of productivity in India; Sponsored by the Department Of Stasticts, Government of India, July, New Delhi.
- Chandrasekhar, C. P. (1996); " Explaining Post Reform Industrial Growth"; Economic and Political Weekly; Special Number, September, PP 2537-2545.
- Ghose, Ajit K. (1994); " Employment in Organized Manufacturing in India"; The Indian Journal of Labour Economics, Vol. 37; No.2, PP 143-161.
- Nagraj, R. (1994); " Employment and Wages in Manufacturing Industries: Trends, Hypothesis and Evidence"; Economic and Political Weekly, January 22, PP 177-186.
- Nayar, Baldev Raj. (2001); " Opening and Openness of Indian Economy"; Economic and Political Weekly, September 15, PP 3529-3537.
- Ahluwalia, M. S. (2000): "Economic Performance of States in Post-Reforms Period" Economic and Political Weekly, May 6.
- Chesnais, Arnhem. (1994); " Global Economy and Transnationalisation of Capital"; American Economic Association, Supplement to American Economic Review, September PP 15-26.
- Nayyar, Deepak. (1993); " Economic Reforms in India: A Critical Assessment"; International Labour Organization, Asian Regional team for Employment promotion, New Delhi.
- Subramaniyam, Shankar. (1993); " Agriculture trade Liberalization and India's Economic Development"; Organization for Economic cooperation and Development, London, PP 129-146.
- Dharmrajan, k. (2002); " Food processing Lures Massive Investments"; South Asian Agribusiness and Horticulture, February-March, PP 22-23.
- Biswas, N. Guha. (2000); " Impact of Liberalization on Food Processing Sector in India"; Minerva Press, New Delhi.

- Mckinsey & Company. (1997); Food and Agriculture Integrated Development: Modernizing the Food Chain.
- Price Water House Association. (1995); Food Processing Industries in India: Investment Opportunities.
- Mukherjee, Durjati. (1990); " Food Processing Industry: Can India Play a Leading Role"; Khadi Gromodyog, August, PP 439-443.
- Panini, M. N. (1999); " Trends in Cultural Globalization: From Agriculture to Agribusiness in Karnataka"; Economic and Political Weekly, July 31, PP 2168-2173
- Sareen, K. P. (1998); " Infrastructure for Food Processing Industries: A Growing Need"; Saket Food Processing handbook, Saket Projects Ltd. Publication, Ahmedabad, PP 195-200
- Singh, Sukhpal. (1997); " Aspects of Entrepreneurship in primary Food Processing Industries in Punjab"; The Journal of Entrepreneurship, Sage Publications, New Delhi. PP 223-231.
- Baghel, L. M .S and Pendse, N. G. (1996); " Role of Agro based Industries in Industrial Development in the State Madhya Pradesh"; Khadi Gromodyog, July, PP 474-482.
- Sinha, A. K. (1995); " Food Processing Industry: An Overview"; Yojna, March.
- Hicks, P. A. (1993); "Policies And Strategies for Agro-Industries in the Pacific Region"; Part 2, Food and Agriculture Organization of the United Nations, RAPA Publication, Bangkok, Thailand, PP 46-78.
- Desai, B. M. and Namboodari, N. V (1992); "Development of Food Processing Industries"; Economic and Political Weekly, March 28.
- Sinha, Sanjay and Sinha, Saurabh. (1992); " Small Scale Fruit and Vegetable Processing: Dynamics of Development"; Economic and Political Weekly, June 27, PP A93-A99.