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Growth and Prospects of Agro-Processing Industries in Punjab

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Abstract. Present study attempts to examine the growth and prospects of agro-processing industries in Punjab in the post liberalization period. Punjab that used to perform reasonably well in terms of industrialization, few years back, is today facing the industrial crunch owing to obvious reasons. Keeping present trends in mind, the state needs to emulate the growth path adopted by China, explicitly, wherein thrust to development had been on the manufacturing sector. With availability of food grain production round the year, it seems viable also in the state to develop the agro processing industries. In fact, researchers have pointed out that Punjab's agriculture has reached a stage where its sustainability is in doubt. If such apprehensions turn out to be true, then future of masses will also land in darkness. Development of agro-processing industries at this juncture, are perceived to be the stimulator that can revamp the vanished glory of the state. The study is an attempt made through empirical framework to find out the conditions for the development of agro-processing industries in the state.
Keywords. Prospects, Agro-processing, Development.
JEL. L52, L66, L67.

1. Introduction

A look at the growth pattern of developed economies generally indicates one thing in common i.e. their agriculture sector was developed first vis-à-vis industrial and the tertiary sectors. One of the principal reasons for the initial development of agricultural sector is the inelastic nature of the agriculture encompassed products in relation to the non-agricultural sectors. However, during the course of development, importance of agriculture sector decline whereas the prominence of industrial and tertiary sectors tend to increase. The nature of development away from agriculture towards industrial and tertiary sectors also does vary in different economies. For example, a comparison of Indian and Chinese economy show how migrated workers from agriculture sector found more jobs in service activities in context of India, whereas their counterparts were absorbed more in manufacturing industries in China. Though, the route to development differs between different economies, yet, the importance of agriculture sector cannot be negated at any stage of development. Of course, the limitations of agriculture sector like absorption of labour, use of technology and paucity of land etc. acts as a barrier to agriculture led economic growth.

During the process of industrialization too, predominantly the agricultural produce processing industries or more commonly the agro-processing industries are developed. Specifically, the agro-processing industries are the subset of

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manufacturing sector which are engaged in processing raw materials and intermediate products derived from agriculture, fisheries and forestry (Hansen & Cranfield, 2009). Planning Commission has defined agro-industries as the industries that are concerned with the processing of agricultural products, including animal husbandry, horticulture and poultry, and also those concerned with the manufacture of inputs required for agricultural production like agricultural implements (Government of India, 1993). Where on supply side, agricultural sector serves as a provider of resources to the industrial sector (constituting the forward linkages of the agricultural sector), it plays a pivotal role for the process of industrial development by demanding the industrial input (constituting the backward linkages of the agricultural sector). Agro-industrial sector with its strong forward and backward linkages and its potential to generate employment opportunities holds the key to the economic development of a country. In case of India, economists argue that dependence of industry on agriculture and services is getting more pronounced than it used to be in 1970s and 1980s (Sastry *et al*, 2003). But the state of agro-processing industry still seems to be in its infancy which processes only 8 percent of the total food production. Further, only 2 percent of horticulture products are estimated to be processed and more than 30 percent is wasted due to lack of storage and processing facilities (Arunajatesan & Balaji, 2004). Value addition of food products is expected to rise to 35 percent and from current 10 percent by the end of 2025. Furthermore, wherein developed countries, up to 14 percent of the total work force is engaged in agro-processing sector directly or indirectly, figure hovers at only about 3 percent in India revealing its underdeveloped state and vast untapped potential for employment. Above discussion clearly throws a light on the fact India has missed the opportunity to foster a sturdy non-farm rural economy. Not only this, fruits of green revolution seem to have been partially successful in providing transformation to the rural economy.

Punjab that turned out to be the food basket of India by contributing significantly to the agricultural production after green revolution has now restricted itself to wheat and rice crops only and that too at a cost of depleting water table as well as increasing soil salinity and micro-nutrient deficiencies. A Report by Ground Water Quality for Irrigation in Punjab (2009) has found that 42 per cent of the groundwater has saline and sodic elements that make it unfit for irrigation as well as drinking. Henceforth, scholars like Johl (2011, 2012), Sidhu (1996, 2002), Shergill (2001) etc. argue that to make further headway on economic front, state needs to concentrate more on crop diversification pattern (away from wheat and rice crops) and develop the agro-processing industries which can provide inherent benefits to the state. Present study attempts to examine the performance of agro-processing industries in Punjab in the post reforms period and its prospects in state's future industrialization policy. Specifically, the study intends to fulfil the following objectives:

1. To find out the share of Punjab's industries in all India manufacturing the post reforms period
2. To identify the share and total factor productivity growth of agro-processing industries in Punjab
3. To examine the nature of agro-processing industries in Punjab

2. Data and methodology

For the purpose of study, secondary data is collected from various issues of Annual Survey of Industries (ASI) published by the Central Statistical Organization, Ministry of Planning, Department of Statistics, Government of India

for the years 1990-91, 2001-02 and 2011-12.Data for the state of Punjab has been obtained from various issues of Statistical Abstract of Punjab published by the Economic and Statistical Organization. Comparison is carried out for three years i.e. 1990-91, 2000-01 and 2009-10. Broad classification of industries listed in the group of agro-processing industry has undergone drastic reclassification from 1990-91 to 2009-10. Therefore, in order to calculate accurate and reliable growth rates, grouping of agro-processing industry has been reclassified on uniform basis. In other words, growth rate of the total factor productivity so calculated for the three periods 1990-91 to 2000-01; 2000-01 to 2009-10 and 1990-91 to 20091-10 is based on pattern of uniform industries reclassified according to the classification codes of 2009-10 (annexure I). Performance of agro-processing industries is evaluated from two aspects: share of agro-processing group in Punjab's manufacturing and growth of agro-processing industries besides nature of output, since 1990-91.

First of all, we have assessed the share of manufacturing industries of Punjab in total manufacturing at all India level in terms of number of factories, fixed capital, number of employees, output and net value added. It has been carried out to find the performance of industries of Punjab in the post-liberalisation period. Share of agro-processing industries in total manufacturing in the state is assessed to find out the supremacy of agro-processing industries in Punjab vis-à-vis other manufacturing industries.

In order to study the growth of agro-processing industries, compound growth rate of each of the selected indicators have been calculated for the selected time periods. Trends in growth are studied by computing the compound growth rate through principle of least squares, using following formula

$$Log\ Y = Log\ a \quad + \quad (Log\ b)t \tag{1}$$

The data given in ASI reports is on current prices but for proper comparison, values are deflated with the help of suitable deflator (1979-80 to 1981-82 = 100).Dismal growth in one of the parameters in no way signifies the poor performance in all the parameters. Therefore, growth rates are computed for five different variables at different periods of time.

Further, in order to estimate the productivity, Translog Index has been used.

$$\log V(T) - \log \bar{V}\,(T-1) = \bar{V}_K \left[\log K(T) - \log K(T-1)\right] + \bar{V}_L \left[\log L(T) - \log L(T-1)\right] \tag{2}$$

Where

$$\bar{V}_K = \frac{1}{2}\left[V_K(T) + V_K(T-1)\right] \tag{3}$$

And

$$\bar{V}_L = \frac{1}{2}\left[V_L(T) + V_L(T-1)\right] \tag{4}$$

V_K and V_L are the income shares of capital and labour respectively. Perpetual inventory accumulation method is used to generate the capital series (Kaur and Kiran, 2008). Capital stock at any year is calculated as:

$$K_t = K_0 + \sum_{t=1}^{T} I_t \quad (5)$$

Where, I_t, is investment in time period t and K_0 is the capital stock for benchmark year, i.e. 2004-05. Investment figures were obtained using the formula:

$$I_t = (B_t - B_{t-1} + D_t) / R_t \quad (6)$$

where B is book value of fixed capital, D is depreciation and R is the wholesale prices index of industrial machinery (base 1975-76 = 100).To estimate the nature of agro-processing industries in terms of factors used, regression analysis is used i.e.

$$Y = A K^{\alpha} L^{\beta} e^{u} \quad (7)$$

Where Y is the output, L is the number of employees, K is the fixed capital, u is stochastic term. Estimates of α and β are obtained by regressing Log Y on log L and log K using principle of OLS (Other Least Squares). Coefficient of determination between log Y and joint effects of log L and log K has also been assessed and to check the overall significance F – test is used.

The study is divided into five sections. Section I is introductory in nature. In section II database and methodology is discussed. Performance of Punjab's industries vis-à-vis all India industries is assessed in section III. Estimates of total factor productivity growth and nature of agro-processing industries are discussed in section IV. Concluding remarks follow section V.

3. Industrial Performance of Punjab in the post liberalization period

Table 1 (see Appendices) shows the share of different states in terms of number of factories, fixed capital, employment, output and net value added in all India manufacturing. It is evident from the table that in case of all the variables, primarily, five states have dominated the industrial scenario in the economy that includes Maharashtra, Tamil Nadu, Andhra Pradesh, Gujarat and Uttar Pradesh. Besides, Karnataka and West Bengal also have fared well in selected variables. Apparently, the conclusion that can be drawn is that even after six decades of independence, we have failed to bring industrial parity in the economy. British policy of developing the port cities like Bombay, Madras and Calcutta etc. still seem to carry the legacy as the states in which the above mentioned capital cities are located, figure amongst the dominating state of India. On the other hand, many states that possess rich stocks of mineral resources like Bihar, Madhya Pardesh and Orissa still experience a stumpy or inconsistent economic growth. Since the study is restricted to Punjab only, it is imperative to state that condition of Punjab in terms of industrialization has deteriorated over a period of time. Specifically, capital accumulation which is also an indicator of increase in production capacity has exhibited a drastic reduction in its share in the last two decades from 4.27 percent in 1990-91 to 1.92 percent in 2011-12. Similar trends can also be observed in output and employment also. Ranking of the state vis-a-vis 21 other states of India has also witnessed a fall in the said variables. Only a marginal increase is observed in the percentage share in net value added and number of factories in the given time period. By and large, results demonstrated a deceleration in industrialization in Punjab. When the trends related to deteriorating industrialization in the state of Punjab, are placed simultaneously with the problems related to Punjab's agriculture (like practice of wheat-rice monoculture, shrinking farm size, dwindling water resources and degradation of soil etc.), it

becomes clear that two pronged strategy is required to resolve the problems. One, to counter the falling industrialization standards and second, diversification away from paddy and wheat crops. Scholars argue that agro-processing industries that serve as a link between agriculture and the industry are believed to provide a viable solution to the Punjab's aggravating problems on both the discussed fronts. An analysis of sustainability of agro-processing industries in Punjab is carried out in the following paragraphs.

Share of agro-processing industries in Punjab's total manufacturing is highlighted in Table 2 (see Appendices). It is evident from the table that in terms of all the variables i.e. number of factories, fixed capital, employment, output and net value added, share of agro-processing industries has seen an upward swing from 1990-91 to 2000-01. However, during the decade 2000-01 to 2009-10, share of agro-processing industries has decelerated in the state. Most plausible reason that may be attributed to the deceleration of the agro-processing industries in the last one decade or so, is the lack of governmental policy with respect to industrial development in the state in general and agro-processing industries in particular, beside taxation sops being extended by the neighbouring states like Himachal Pardesh and Uttarakhand. In addition, Agro-processing industries in Punjab generally being small-scaled in nature, limitations pertaining to infrastructural and operational facilities in comparison to the large and medium sized companies, lack of funds for using latest technology, absence of separate marketing and human resource departments, lack of international standardization of goods manufactured etc. also aggravated the problems (Gautam & Singh, 2012). The issue of diminutive growth of agro-processing industries in comparison to other manufacturing industries of the state is discussed in table 3. Argument pertaining to the industrial deceleration in the state becomes unblemished, when growth rate of industries in Punjab in the post–liberalization period is taken into consideration. It is evident from Table 3 (see Appendices) that barring few indicators, industries in Punjab have demonstrated a negative growth. Advocates of economic reforms pointed out that the incoming of multinational companies will create conditions for industrial parity throughout the economy. But the foreign direct investment or foreign companies, largely, hovered around the states of Maharashtra, Tamil Nadu, Gujarat, Karnataka and Andhra Pardesh. States like Punjab appears to have remain devoid of the foreign direct investment. Low level of foreign investment than expected and resultant decline in the developmental public expenditure on industries in the state may have resulted replenishment of all types of industries, including the agro-processing industries (Singh, 2007). Also, it has led to wide disparities in industrialization in the Indian economy. Hitherto, emerged industrial scenario in the economy is in total disagreement with what the advocates of liberalization perceived.

4. Nature of agro processing industries

Estimates of total factor productivity growth in manufacturing sector of Punjab are presented in Table 4. These estimates are based on the Translog index. Total factor productivity growth rates are shown for the time period 1990-91 to 2009-10. It is seen from the table that the total factor productivity estimates in case of agro-processing sector are better than other manufacturing industries in Punjab. Comparing the total factor productivity growth with the results obtained in table 3, attributable reasons for better performance of agro processing industries could be either the agro-processing industries in Punjab have gained the momentum in last one decade or so, or other manufacturing industries of Punjab have closed down /shifted to greener pastures. Authors of this study have failed to trace any evidence

of the establishment of bourgeoning agro-processing units in the recent past (as no such ground- breaking set ups have emerged) leading to the conclusion that manufacturing industries in the state have either closed down or shifted to some other states of the union. For example, auto parts manufacturer or steel manufacturers have committed Rs. 900 crore investment in Orissa state due to the greener pastures. It points toward good prospects of setting up agro-processing industries in the state in order to revive the wave of industrialization in the state. State government though late, also appears to have noticed the prospects of agro-processing in the state and henceforth made an attempt to invite ethnic private investors to invest in the agro-processing sector in the state recently.

Table 4. *Total factor productivity growth of selected industries in Punjab*

Industry	1990-91 to 2009-10
Manufacturing of food products and beverages	0.602
manufacturing of wearing apparel, dyeing of fur	0.585
Manufacturing of wood and cork except furniture	0.498
Manufacturing of paper and paper products	0.386
Tanning and dressing of leather, Manufacturing of handbags	0.397
Agro processing	0.571
Others	0.414
All Industries	0.451

Source: Authors calculations from various issues of statistical abstract of Punjab

In table 5, we have tried to find out the nature of industries in general and the agro-processing industries in particular. Results point toward the labour intensive nature of industries in the state, whether general or agro processing. Further, complementary nature of labour and capital for the industrial sector in the state also project a good sign, which implies that more use of capital is capable of generating additional employment opportunities. To be specific, setting up of agro-industrial units in the state can fortify the chances of employment. Genuineness of the results is verified by the high values of coefficient of determination (R^2) that too are found to be significant at 1 percent level of significance. Task of the government does not get completed by merely inviting the private investors to invest in the state. Attracting private investment in Punjab, calls for a gigantic effort on the part of the government too. In fact, private investment can follow only when the state government will not only provide taxation sops rather invest holistically in the required infrastructure may it be power, information, communication and technology, roads or means of transport etc. recommendations for the robust setting up of agro-processing industries in the state are given in the next section.

Table 5. *Nature of agro-processing industries in Punjab*

		1990-91	2000-01	2009-10
Manufacturing industries in Punjab	Constant	4834.27	-20110.07	33975.68
	α (fixed capital)	-0.46	-1.74	-0.575
	β (labour)	3.702	14.38	22.84
	R	0.99	0.99	0.99
	R^2	0.98	0.99	0.99
	F	144.74	422.34	2165.04
Agro processing industries in Punjab	Constant	5482.06	-3676.09	-33494.18
	α (fixed capital)	-0.71	-1.61	-0.61
	β (labour)	3.84	12.88	23.10

R	0.97	0.99	0.99
R^2	0.94	0.99	0.98
F	23.79	682.15	416.77

Source: Authors calculations from various issues of statistical abstract of Punjab

4. Conclusion and recommendations

Economic growth entails transformation of an economy from the dominance of agrarian to industrial. During the process of industrialization too, agro-processing industries are first to be developed. India achieved self sufficiency in food grains after green revolution, and a few states like Punjab, Haryana and parts of Uttar Pardesh turned out to be the front runners in the production of food grains. However, political apathy in the timely development of agro-processing industries in Punjab has led to serious problems in agriculture and industry particularly in the post-reforms period. Results have demonstrated deceleration in the ranking of Punjab in at the all India level in the last two decades. Also, in the last one decade or so there has cropped up a problem of shifting or closure of small scale agro-processing industries in the state. Despite all this, agro-processing industries have shown a tendency to be the nucleus of Punjab's future industrialization strategy. It may be attributed to the reason that lethargic government attitude to save industries in Punjab has impacted the manufacturing industries more than the agro processing industry. This has given an opportunity to the state to rethink its industrial strategy and set up agro-industrial units in the state at a war footing pace. Few recommendations in this context are also given in the following paragraphs.

A vigorous programme of rural industrialization should be undertaken on order to create substantial job opportunities in agro-industries as analysis has pointed. Further, appropriate steps for developing relevant skills through vocational training should also be taken up. Functional industrial clusters in selected rural areas need to be established where all modern facilities such as banking, transport, quality power at affordable prices, telecommunication, health, education etc. are made available.

To attract investment and entrepreneurs into the agro - processing industries, all incentives like sale tax exemption etc. and concessions should be extended to agro industries irrespective of the area of their location. In addition to that these industries should also be given all the concessions like exemption from octroi that are available to their competitive industries in the neighbouring states.

The existing agro-processing units should also be encouraged to modernize and upgrade their technology and machinery. For this purpose, they should be given concessional loans and reasonable capital subsidies.

Keeping in mind the availability of raw materials and cheap labour in rural areas, government should strive to open more agro processing units in the rural areas. Where on one hand, it will help to solve the problem of marketing of food grains, on the other it will create more employment opportunities for landless labourers, marginal and small farmers thereby checking the migration of people from the rural to urban areas.

Marketing problems resulting from low quality of product is a major problem faced by most of the agro-processing industries. Government should establish quality improvement centres for different agro-based products. Small agro-processing firm operators should be given help and training in these centres to improve and standardize the quality of the product. This will also make these industries more competitive in the international market.

Processed food products have shown a tremendous scope in India and abroad in the recent past. The target group of processed foods industry is the families having

working couples and all those families which require convenience food at one point of time or the other. With this target group we can say that the foreign countries possess huge market for the processed foods and India is at an advantage as India is an agriculturally dominant country. Punjab Agro Export Corporation (PAEC) and Punjab State Industrial Exports Corporation (PSIEC) must be the nodal agencies so that the various export units export their produce through them. This way these units will be saved of various problems hindering the exports. For further boosting the exports of processed items, there is a need to have international airports at Chandigarh and Ludhiana and freight subsidies for exports etc.

It calls for a major effort from government as well as the private sector to provide critical infrastructure in order to bring a new revolution, which is agro-industrial centric in nature.

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Table 1. *Share of different states in terms of selected indicators*

(in percent)

YEAR	1990-91					2001-02					2011-12				
STATES	No. of factories	Fixed capital	Employ-ment	Out put	Net value added	No. of factories	Fixed capital	Employ-ment	Out put	Net value added	No. of factories	Fixed capital	Employ-ment	Out put	Net value added
Andhra Pradesh	13.59	11.89	10.18	6.20	5.83	11.08	6.96	11.58	6.64	7.16	12.74	13.03	10.15	6.80	8.26
Assam	1.38	0.78	1.33	1.08	1.44	1.11	0.83	1.43	0.83	0.67	1.39	0.78	1.34	0.92	0.78
Bihar	3.05	5.23	4.41	4.84	5.08	1.15	0.44	0.81	0.70	0.44	1.49	0.39	0.94	1.04	0.67
Chattisgarh	-	-	-	-	-	0.99	2.75	1.21	1.31	1.64	1.14	2.60	1.38	1.61	1.51
Gujarat	9.78	9.87	8.26	10.31	8.74	10.85	20.16	9.20	15.33	11.70	10.21	16.04	10.30	17.28	10.51
Haryana	2.74	2.76	3.09	3.70	3.20	3.45	3.33	3.71	4.73	4.51	2.82	2.76	4.34	4.22	3.57
Himachal Pradesh	0.25	0.84	0.66	0.42	0.74	0.39	0.95	0.47	0.63	0.89	1.14	2.28	1.22	1.40	2.58
Jammu &Kashmir	0.21	0.05	0.17	0.17	0.15	0.27	0.08	0.32	0.16	0.11	0.40	0.23	0.47	0.39	0.48
Jharkhand	-	-	-	-	-	1.11	3.70	2.02	1.96	2.26	1.17	3.46	1.47	1.78	2.01
Karnataka	5.28	3.65	5.12	4.64	5.42	5.44	7.32	6.29	5.73	6.77	5.27	6.77	6.75	6.83	12.34
Kerala	3.11	2.00	3.33	2.27	2.39	3.74	1.69	3.94	2.49	2.35	3.23	0.79	2.93	1.93	1.11
Madhya Pradesh	3.54	7.78	5.10	5.31	5.88	2.35	3.09	2.70	3.97	4.13	1.97	2.56	2.34	2.72	2.32
Maharashtra	13.94	16.70	15.15	22.94	23.48	13.89	15.97	15.00	18.83	20.37	12.97	13.39	14.00	17.40	18.51
Orissa	1.31	3.57	1.87	1.82	2.26	1.33	2.73	1.49	1.40	1.35	1.23	8.25	2.12	2.00	2.18
Punjab	5.59 (VI)	4.27 (IX)	4.90 (IX)	4.66 (IX)	3.63 (X)	5.64 (VI)	1.95 (XV)	4.50 (VIII)	3.95 (X)	3.76 (X)	5.79 (VI)	1.92 (XVI)	4.47 (VIII)	3.08 (X)	3.94 (VIII)
Rajasthan	3.00	3.84	2.95	3.18	3.04	4.11	3.29	2.99	3.24	3.34	3.88	2.72	3.54	3.30	4.70
Tamil Nadu	13.06	8.58	11.77	10.33	11.33	14.71	8.31	14.14	9.80	10.13	17.01	8.28	14.45	10.54	9.11
Uttar Pradesh	9.31	11.07	9.65	9.85	9.05	7.12	6.99	6.62	6.97	6.93	6.48	4.65	6.44	5.76	4.44
Uttaranchal	-	-	-	-	-	0.54	0.46	0.53	0.54	0.57	1.31	2.60	2.55	2.51	3.63
West Bengal	5.01	6.40	9.06	6.08	6.26	4.82	5.77	7.04	4.56	4.34	3.86	3.68	4.87	4.04	2.44
Delhi	3.09	0.66	1.77	2.11	1.99	2.66	0.52	1.53	1.62	1.48	1.77	0.46	0.87	0.78	0.73
Other States	2.74	0.07	1.22	0.08	0.09	3.25	2.72	2.50	4.60	5.07	2.74	2.39	3.06	3.68	4.17
All India	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Figures in parentheses indicate ranking of Punjab
Source: Annual Survey of Industries and different issues of statistical abstract of Punjab

Table 2. *Share of different agro-processing industries in Punjab in terms of selected indicators*

(in percent)

	1990-91					2000-01					2009-10				
	No. of factories	Fixed capital	Employ-ment	Output	Net value added	No. of factories	Fixed capital	Employ-ment	Output	Net value added	No. of factories	Fixed capital	Employ-Ment	Output	Net value added
Agriculture, hunting and related service activities	-	-	-	-	-	1.52	0.22	1.06	1.91	0.61	1.25	0.16	0.82	1.08	-0.05
Manufacturing of food products and beverages	19.33	6.39	15.46	21.89	13.82	20.82	18.67	24.84	25.25	27.48	22.26	15.29	18.30	18.89	11.28
Manufacturing of tobacco products	0.25	0.63	1.18	1.76	2.59	-	-	-	-	-	-	-	-	-	-
manufacturing of wearing apparel, dyeing of fur	20.60	8.76	21.21	20.35	22.25	15.63	29.48	22.95	18.30	13.49	12.41	34.66	23.51	21.03	18.05
Manufacturing of wood and cork except furniture	0.60	0.04	0.12	0.06	0.07	1.41	0.32	0.40	0.14	0.17	1.51	0.19	0.37	0.13	0.18
Manufacturing of paper and paper products	2.18	2.41	1.73	1.71	2.01	1.88	4.48	1.99	1.97	1.81	1.97	7.81	1.81	2.77	2.44
Tanning and dressing of leather, Manufacturing of handbags	0.26	0.12	0.59	0.36	0.52	2.80	1.01	1.65	1.13	1.06	0.91	0.94	0.78	1.33	0.90
Publishing, printing and reproduction of media	-	-	-	-	-	0.91	0.69	1.01	0.19	-0.72	0.57	0.24	0.37	0.09	-0.48
Manufacture of furniture	-	-	-	-	-	1.46	0.44	0.88	0.37	0.44	0.21	0.02	0.11	0.05	0.04
Share of agro processing industries in total	43.24	18.35	40.29	46.13	41.26	62.07	84.77	77.73	67.55	57.83	41.08	59.31	46.06	45.38	32.36
Other industries	56.76	81.65	59.71	53.87	58.74	37.93	15.23	22.27	32.45	42.17	58.92	40.69	53.94	54.62	67.64
All Industries	100.00	100.00	100.00	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: various issues of statistical abstract of Punjab.

Table 3. *Growth of agro-processing industries in Punjab in terms of selected indicators*

(in percent)

	1990-91 to 2000-01					2000-01 to 2009-10					1990-91 to 2009-10				
	No. of factories	Fixed capital	Employ-Ment	Output	Net value added	No. of factories	Fixed capital	Employ-ment	Output	Net value added	No. of factories	Fixed capital	Employ-Ment	Output	Net value added
Agriculture, hunting and related service activities	-	-	-	-	-	-1.87	-1.48	-2.17	1.07	-228.30	-	-	-	-	-
Manufacturing of food products and beverages	-1.69	-7.03	-3.52	-4.71	-8.66	-5.05	-4.92	-2.70	-3.06	4.50	-3.29	-6.04	-3.14	-3.93	-2.65
manufacturing of wearing apparel, dyeing of fur	1.81	-8.33	0.37	-2.31	2.85	-1.50	-6.38	-5.27	-6.57	-6.92	0.23	-7.41	-2.34	-4.35	-1.90
Manufacturing of wood and cork except furniture	-8.99	-15.12	-10.47	-11.59	-10.83	-4.75	1.27	-4.36	-4.22	-4.22	-7.00	-7.71	-7.63	-8.17	-7.76
Manufacturing of paper and paper products	0.51	-2.72	-0.23	-4.68	-1.11	-4.46	-10.39	-3.97	-8.64	-7.00	-1.87	-6.43	-2.02	-6.58	-3.94
Tanning and dressing of leather, Manufacturing of handbags	-21.81	-16.08	-8.74	-13.67	-8.85	8.82	-3.90	3.32	-6.89	-2.09	-8.56	-10.52	-3.21	-10.52	-5.71
Publishing, printing and reproduction of media	-	-	-	-	-	1.27	6.95	6.03	3.06	0.70	-	-	-	-	-
Manufacture of furniture	-	-	-	-	-	18.84	34.35	19.62	19.09	25.21	-	-	-	-	-
Share of agro processing industries in total	-1.66	-7.12	-1.55	-3.86	-2.93	-2.68	-5.63	-3.55	-4.36	-0.36	-2.14	-6.42	-2.50	-4.10	-1.72
Other industries	-0.38	9.66	3.59	-2.87	-1.59	-5.00	-3.41	-6.44	-5.76	-5.97	-2.60	3.26	-1.29	-4.25	-3.69
All Industries	-0.96	3.50	1.16	-3.34	-2.16	-3.99	-4.68	-5.02	-5.11	-3.85	-2.41	-0.46	-1.81	-4.18	-2.97

Source: various issues of statistical abstract of Punjab

Concordate Table

Name of the industry	Industry Number 2011-12	Industry Number 2000-01	Industry Number 1990-91
Agriculture Hunting and related	01	01	Not given separately
Manufacturing of Food Products and beverages	10 + 11	15	20+21
Manufacturing of Tobacco Products	12	16	22
Manufacturing of Textiles and wearing Apparel Dyeing of Fur	13+14	17+18	23+24+25+26
Tanning and dressing of leather Manufacturing of Luggage, handbags Saddlery, footwear	15	19	29
Manufacturing of Wood & Cork, except furniture, manufacture of Articles of Straw and Plating materials	16	20	27
Manufacturing of Paper and Paper Products	17	21	28
Publishing, printing and reproduction of recorded media	18	22	Not given separately
Manufacturing of furniture	31	36	Not given separately

Source: Various issues of statistical abstract of Punjab.