

## **Growth and contribution of Industrial Sector in Punjab and Haryana Economy**

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### **Abstract**

*The manufacture sector is playing a lead role to drive the growth of secondary sector. The mining & quarrying sector is contributing the minor share. As almost similar growth rate is investigated for Punjab and Haryana of secondary sector from 1980-81 to 2013-14. Moreover, the share of manufacture sector was rotating about 57 per cent of Punjab from 1980 -81 to 2004-15 and more than 70 per cent in Haryana at the same period as important to note that the share of construction in Punjab was started from 28.5 per cent in 1980-81 and 27.5 per cent in 2014-15, the share of manufacture has raised from 58.2 per cent to 65.1 per cent furthermore the share of gas water supply and centrlicity has declined from 13.2 per cent to 7.4 per cent. In Haryana share of construction has increased 18.4 per cent to 36.1 per cent and share of manufacture has declined from 73.2 per cent to 56.8 per cent, more over the share of electricity was stagnant.*

**Key Words: Growth trend, Industry, Structural Break, Punjab and Haryana.**

### **Introduction**

During the process of economic development, in the wisdom of new classical economist (Myrdol, 1968; Williamson, 1965; Kuznets, S, 1966 and 1971, Chenery and Talyor, 1968), of an economy is follows the path of economic transformation i.e. at first stage a shift from Agriculture to industry and then from industry/secondary sector to tertiary sector. Hence for sustainable growth of economy, it is imperative that the industrial sector should be developed simultaneously with the agriculture sector. In Developing countries, the major share of employment and GDP comes from agricultural sector. Development economists in general and agricultural economists in particular have long focused on how agriculture can best contribute to overall growth and modernization during the initial stage of economic developmen. Many empirical studies of economic development (Rosenstein-Rodan 1943; Lewis 1954; Scitovsky 1954; Hirschman 1958; Jorgenson 1961; Fei and Ranis 1961) highlighted the importance of agriculture, because of its abundance of resources and its ability to transfer surpluses to industrial sector. Agriculture's primary role in the transformation of a developing economy was seen as subordinate to the central strategy of accelerating the pace of industrialization. Industry sector is commonly known as puller of growth of economy. This sector is a heart of the economy and has a power to pull the

disguised unemployed from agriculture sector. Three sectors of the economy are interlinked consequently effect to each other. In India economy agricultural sector is playing an important role in employment opportunity although GDP share has declined up to 17.46 cent 2015-16. The GDP from industry sector is 31.46 per cent has recorded in the year 2014-15 and provided an employment opportunity to 24.6 per cent work force of the economy. The service sector is producing the 59 per cent of GDP of the Indian economy, and 40 per cent population was getting employment. In Punjab, the industry sector contributed 24.67 per cent in GDSP during 2016-17 (advance estimation) and offered employment to 27.8 per cent Population. A radical transformation of policies shift, from protected industrial to liberalised industrial policy was create comparative different industrial environment for the sector in the country.

The new policy shall be a radical departure from earlier policies, ushering in bold reforms, restructuring institutions, and present a holistic strategy for industrial growth of Punjab state. Government of Punjab aims to develop the State as one of the most economically developed States in the Country and make it the best State in terms of ease of doing business. To develop micro, small and medium enterprise, Punjab state government establish micro, small and medium enterprise Facilitation Councils at regional level at Ludhiana, Jalandhar, Amritsar and Patiala for providing effective facilitation services to MSME units. With this efforts, the sector provides about 25.04 per cent in the gross state value added during 2015-16 and about 31.6 per cent workforce engaged. On the other hand, in Haryana the Industry sector is contributed 26.6 per cent of gross state value added during the 2014-15 with 27.6 per cent of employment (NSSO-EUS, 2011-12). In the present study, we considered the industry sector and sub sector to know the development path and growth performance of Punjab and Haryana states. The study also exploring the growth pattern during different phase and the contribution of various sub sectors has measured in the current study.

### **Data and Methodology**

The study is conduct of two sates namely Haryana and Punjab. The data has been collected from Secondary source. The CSO series has taken to estimate the growth rate of Industry and sub sector from 1980-81-2014-15 at 2004-05 prices. Moreover, the statistical abstract of Punjab, statistical abstract of Haryana and Directorate of Economics and Statistics have accessed to collect the data. The subsector share of industry sector has estimated on current prices. The comparatively ratio of two sates also estimated at current prices. The structural break has been done through Bai and Perron method on the basis of Punjab Industry gross state domestic product which was converted at the 2004-05 constant price. On the bases, the period has divided in to five phases i.e. 1980-81 to 1992-93, 1992-93 to 2002-2003, 2002-03 to 2010-11 and 2010-11 to 20114-15. To the depth analysis of the study the sub-sector of manufacture considered and the comparatively trend growth rate has estimated. Moreover, The Compound growth rate was estimated with the following exponential model.

$$Y = ab^t$$

$$\text{Log } Y = \log a + t \log b$$

$$\text{CGR} = (\text{Antilog } b - 1) \times 100$$

where,

t = time period in year

Y = GSDP Manufacture and sub sector of secondary sector

a & b = Regression parameters and

CGR = Compound growth rate

Moreover, it has applied Bai and Perron test to identify structural in the growth trend due to multiple break points in the series. For selection of break point we use critical value of Information Criteria (BIG), a suitable indicator suggested (Bai and Perron, 1998 & 2003 and Wang, 2006). The test suggested that four break point (1980-81 to 1992-93, 1992-93 to 2002-2003, 2002-03 to 2010-11 and 2010-11 to 2011-15) were exists in the series.

## Result and Discussion

As estimated from the results that manufacture sector is contributing the major share in industry sector in both states followed by construction and electricity, gas & water supply. The mining & quarrying sector is contributing the minor share. As important to note that the share of construction in Punjab was started from 28.5 per cent in 1980-81 and 27.5 per cent in 2014-15, and the share of manufacture has raised from 58.2 per cent to 65.1 per cent furthermore the share of gas water supply and centricty has declined from 13.2 per cent to 7.4 per cent. In Haryana share of construction has increased 18.4 per cent to 36.1 per cent and share of manufacture has declined from 73.2 per cent to 56.8 per cent, more over the share of electricity was stagnant.

**Table 1: Contribution of Sub-sector in GSDP of Industrial sector at selected time.**

(Per cent)

Year	Mining & quarrying	Construction	Electricity, gas and Water supply	Manufacturing		
				Total	Registered	Unregistered
<b>Punjab</b>						
1980-81	0.1	28.5	13.2	58.2	57.4	42.6
1992-93	0.1	22.9	11.6	65.5	56.4	43.6
2002-03	0.2	23.0	18.7	58.2	65.9	34.1
2010-11	0.1	26.7	7.4	65.9	57.6	42.4
2014-15	0.0	27.5	7.4	65.1	56.6	43.4
<b>Haryana</b>						
1980-81	1.9	18.4	6.6	73.2	72.7	27.3
1992-93	1.2	16.1	3.4	79.3	59.7	40.3
2002-03	0.8	17.9	8.7	72.5	77.3	22.7
2010-11	0.1	29.3	5.4	65.1	75.1	24.9
2014-15	0.1	36.1	7.1	56.8	74.2	25.8

Source: Author's estimation based on CSO data

As observed that manufacture is further divided in sub sectors name as registered and unregistered sector. Surprisingly the share in manufacture turning around 57 per cent of Punjab from 1980 -81 to 204-15 and more than 70 per cent in Haryana at the same period.

**Table 2: Ratio of Sub-sector in secondary share in Punjab/Haryana**

Year	Mining & quarrying	Construction	Electricity, gas and Water supply	Manufacturing			Total GSDP Industry
				Total	Registered	Unregistered	
1980-81	0.1	2.3	3.0	1.2	0.9	1.9	1.5
1992-93	0.1	2.2	5.2	1.3	1.2	1.4	1.5
2002-03	0.2	1.1	1.8	0.7	0.6	1.0	0.9
2010-11	0.4	0.7	1.1	0.8	0.6	1.4	0.8
2014-15	0.1	0.6	0.8	0.8	0.6	1.4	0.7

**Source: Author’s estimation based on CSO data**

Again, to know the comparatively industry and sub sector of industry growth of these state, the ratio has been estimated. The ratio had estimated at current prices. As noticed that in 1980-81 and 1992-93 the higher ratio for Punjab of Industry GSDP. After that the ratios were converted in favour of Haryana. The electricity and water supply is the only sector where the Punjab able to sustain up to 2010-11 comparatively Haryana. Moreover in the previous discussions as observed that unregistered share of Punjab was higher consequently the higher ratio is portrayed in table (2 ). Electricity, gas and water supply sector of Punjab has lost its contribution in industrial gross value added as well as in comparative in Haryana during the study period. The sub sector contribute three time more than Haryana during 1980-81, reached at four/five times in 2014-15. Construction and manufacturing sector are the main contributor in industrial sector, in Punjab, both are lagging behind in terms of its volume. The ratio of 0.6 in construction and 0.8 in manufacturing, which shows that the volume of these sector in Haryana about 40 per cent in construction and 20 per cent in manufacturing are greater than Punjab.

**Table 3: Growth Rate of GSDP from Sub-sector of Industry during different phases of development.**

(Percent per annum)

Time Periods	Manufacturing			Construction	Electricity, gas and Water supply	Industry Total
	Total	Registered	Unregistered			
Punjab						
1980-81 to 1993-94	8.56	8.70	8.36	0.68	9.15	7.06
1993-94 to 2002-03	5.10	4.55	6.28	8.16	4.19	5.64
2002-03 to 2010-11	11.29	15.16	7.31	11.14	6.60	10.75
2010-11 to 2014-15	2.37	2.11	2.75	1.21	2.79	2.13
1980-81 to 2014-15	6.92	7.37	6.70	6.45	5.75	6.78
Haryana						

1980-81 to 1993-94	9.43	7.14	13.97	2.11	8.86	8.32
1993-94 to 2002-03	7.28	7.88	5.96	4.44	8.81	6.69
2002-03 to 2010-11	7.88	8.61	6.24	6.53	8.60	7.58
2010-11 to 2014-15	3.27	3.18	3.48	7.17	5.81	4.56
1980-81 to 2014-15	7.19	7.11	7.20	4.02	8.52	6.71

Source: Author’s estimation based on CSO data

Growth rate of industrial sector and sub sector of industry was measured (at the 2004-05 prices) for per selected time periods of two states. As noticed that growth rate of industry 6.78 per cent in Punjab and 6.71 per cent in Haryana were estimated during the whole period of study. There is not much difference in the growth of industry in two states. If we look across phase wise has identified as 7.06 and 8.32, 5.64 in Punjab and Haryana during 1980-81 to 1993-94. The 10.75 percent growth has estimated in Punjab during the 2002-03 to 2010-11 comparatively higher than Haryana as discern in table (3). This was the period of industrial growth acceleration due to radical policy shift in Punjab. The state unable to sustain its growth in next phase and was reached at lower level 2.13 per cent per annum rate during 2010-11 to 2014-15. There was serious issue of industrial growth in Punjab so without maintain good industrial growth the state lost its position. At the same phase eg. 2010-11 to 2014-15, the growth of Haryana industry declined up to 4.56 nevertheless healthier as compared to Punjab. It was also important to mention that Punjab was lost its growth trend both in construction as well as in manufacturing during 2010-11 to 2014-15 phase period. But on the other hand, Haryana was able to sustain growth trend in construction i.e. 7.17 per cent during this period.

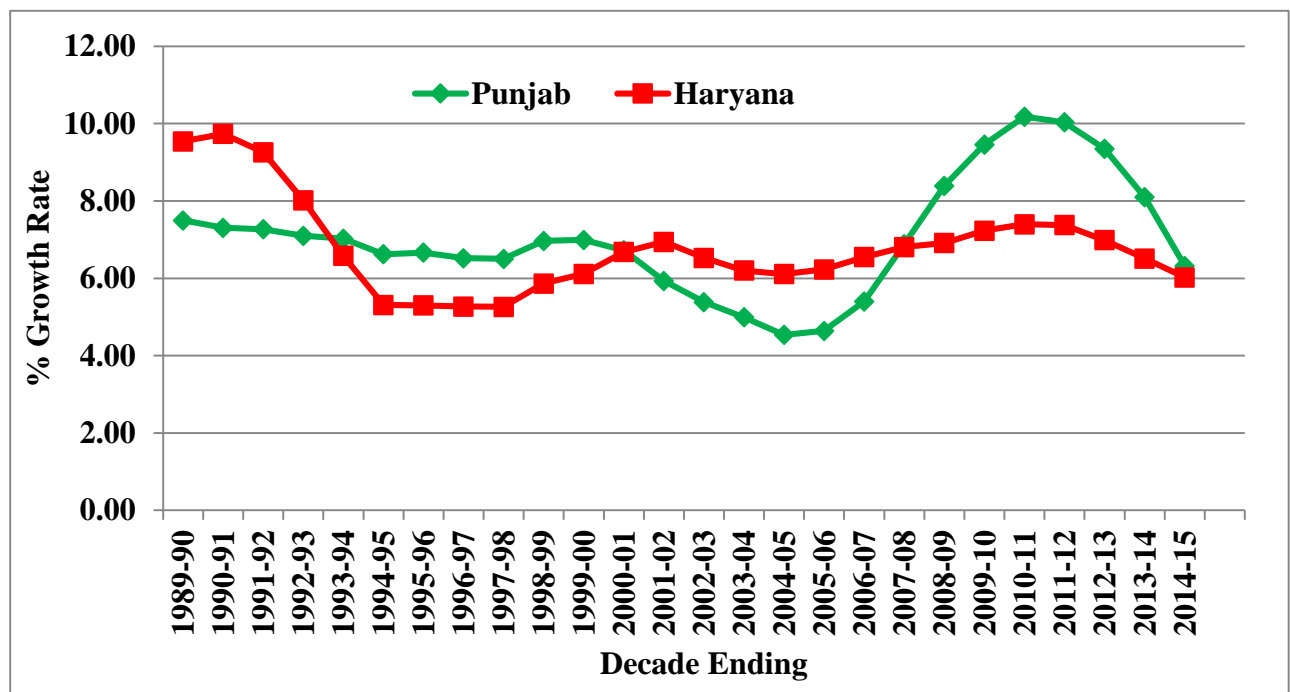


Figure 1: Decade ending growth trend of Industrial sector in Punjab and Haryana

The industry sector growth rate has measured with the base year 1980-81, the fig 1 presents the growth from 1980-81 to 1989-90, 1981-82 to 1990-91 and same methodology

extended to onward to estimate decadal growth rate at the end year of 2014-15 of industry sector. It is noticed that in the year of 2011-12 very high growth measured due to pervious push of investment. Punjab industrial growth was highly flatulated as compared to Haryana. It is interesting to mention that in the last year of the study the same growth has found. Punjab industrial growth is following the pervious declined growth path at end year of the study.

**Table 4: Share of industrial sector in GSDP at different time point.**

(Per cent)

Year	Punjab	Haryana
1980-81	20.0	19.8
1992-93	22.4	21.9
2002-03	24.0	31.1
2010-11	26.6	28.7
2014-15	23.6	26.1

**Source: Author's estimation based on CSO data**

As observed the share of industry sector in GSDP was 20 percent in Punjab and almost similar share in Haryana during 1980-81, and it has raised up 23.06 per cent in Punjab and 26.1 per cent in Haryana during 2014-15. Industry sector is not able to extend their share in GSDP in Punjab. There is still needed to improve the industry sector investment to create the employment opportunity as well reduce the dependence on agricultural sector. To increase the per capita income in Punjab, policy maker need to consider the industry sector. The share of employment was almost similar GSDP in 2004-05 in Punjab while the share of GSDP was more compared to employment in Haryana nevertheless, the share matched in 2011-12.

**Table 5: Changing contribution of industrial sector in employment and GSDP**

(Per cent)

State	Share in Employment			Share in GSDP		
	2004-05	2011-12	Change	2004-05	2011-12	Change
Punjab	24.0	31.6	7.6	24.8	25.1	0.3
Haryana	23.2	27.6	4.4	33.1	27.6	-5.5

**Source: Author's estimation based on CSO and NSSO survey on employment unemployment situation data**

It is also reviled from the table 5 that industrial sector of Punjab state absorb 7.6 percentage point more workforce during last decade, but only 0.3 percentage point able to increase its contribution in gross state domestic product. In case of Haryana, one side industrial sector absorb 4.4 percentage point more workforce, on the other hand it lost its 5.5 percentage point contribution in gross state domestic product.

### Summary & Conclusion

The almost similar Industry sector growth has been estimated of two states from 1980-81 to



2014-15, the variation has investigated in subsector, as observed that share in Industry sector GSDP of manufacture sector has increased in Punjab and declined trend has found in Haryana. Furthermore, the manufacture sector is divided in two parts namely registered and unregistered and almost 75 per share has measured of registered manufacturing in Haryana and only 56 per in Punjab during 2014-15. As important to mention that in both states the manufacture sector was played the lead role in industry GSDP, it can be say the growth of this sector is driven by manufacture sector. The second important indicator is construction, the stagnant share has found in Punjab and increasing trend has been estimated for Haryana. It is important to mention that the 2002-03 to 2010-11 were found the miracle phase for Punjab the estimated growth was 10.75 per cent and manufacture sector grew at the rate of 11.74 per cent. Again, the share of industry sector in Punjab GSDP only increased from 20 per cent to 23.1 percent from 1980-81 t 2014-15 and 19.8 per cent to 26.1 per cent Haryana. Still there is need to increase the share industry sector to increase the per capita income as well to compete the other states of India. To share the disguised employment of agricultural is needed to shift in industry sector to growth of the industry sector. To pull the overall growth of the economy the growth of industry sector is needed to push. There is a scope of food processing industry in both sates which further provide to respectable price of the farmers produce and employment opportunities to young generation. These industries needed to promote in unirrigated areas as well as where the scope of food processing industries.

### Reference

- Chenery, H. B., and Taylor, L. (1968), "Development Patterns: Among Countries and Over Time", *The Review of Economics and Statistics*, Vol 50(4), pp: 391-416.
- Fei, J.C. & Ranis, G. (1961), "A theory of economic development" *American Economic Review*, Vol 51, pp: 533-65.
- Hirschman, A.O. (1958), "The Strategy of Economic Development in Developing Countries" New Haven, Connecticut, USA, Yale University Press.
- Jorgenson, D.G. (1961), "The development of a dual economy", *Economic Journal*, Vol 71, pp: 309-334.
- Kuznets, S. (1966), "Modern Economic Growth", New Haven: Yale University Press.
- Kuznets, S. (1971), "Economic Growth of Nations: Total Output and Production Structure", Cambridge Massachusetts, the Belknap Press of Harvard University Press.
- Kuznets, S. (1968), "Toward a Theory of Economic Growth with Reflections on the Economic growth of nations", Norton publication, New York.
- Lewis, W. (1954), "Economic development with unlimited supplies of labour", *The Manchester school of Economics*, 20: 139-91.
- Myrdal, Gunnar (1968), "Asian Drama-An Inquiry into the Poverty of Nations", Harmondsworth, Penguin.
- Rosenstein-Rodan, P.N. (1943), "Problems of industrialization of Eastern and South-Eastern Europe", *Economic Journal*, Vol 53, pp: 202-11.

Scitovsky, T. (1954), "Two concepts of external economies", *Journal of Political Economy*, Vol 62, pp: 143-51.

Bai, Jushan and Pierre Perron (2003), "Computation and Analysis of Multiple Structural Change Models", *Journal of Applied Econometrics*, Vol 18, pp 1-22.

Bai, Jushan and Pierre Perron (1998), "Estimating and Testing Linear Models with Multiple Structural Changes", *Econometrica*, Vol 66, pp 47-78.

Wang, Z (2006), "The Joint Determination of the Number and Type of Structural Changes", *Economic Letters*, Vol 93, pp 222-27.