



Comparative Analysis of Punjab and Haryana Economy

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Abstract

The structure of Punjab and Haryana economy has changed; agricultural, industry and service sectors which provides the scenarios of both states, as observed that the share of agriculture has declined from 48.6 per cent to 24 per cent in Punjab and 51.3 per cent to 16.3 per cent Haryana in 2014-15. Subsequently, the share of services sector in GSDP has risen of both states nevertheless, employment opportunity was not provided likewise. Agricultural sector still overburdened whereas 18.6 per cent GSDP was sustaining to 41.3 per cent in Haryana during 2014-15. It is pertinent to mention the Volume of GSDP ratio which was favour (1.43) in Punjab during 19801-81 to 2000-01 had loosened by Punjab after 2002-03 which stands the Volume of GSDP ratio 0.77 in 2014-15.

Key Words: *Agriculture, Industry, Service, Growth trend*

Introduction

The Punjab and Haryana states are generally known as agriculture developed states where maximum GDSP generated through agricultural sector, but the structure of both economy has changed during 1980-81 of 2014 -15. In generally, economy structure is divided into three sectors namely Agricultural, Industry and service sector which are driver of the economy. The first pillar of GSDP of both states are agricultural sector which is contributing 18.6 per cent in Haryana and 26.1 per cent in Punjab 2014-15 and it is providing employment more than 40.0 per cent population in Haryana and 36 per cent Punjab. The growth of agricultural of both states is hovering less than 2 per cent from 2010-11 to 2014-15.

Moreover, the sub-sector namely crop sector is facing the severe crisis, because it was growing with the negative growth rate (Singh & Singh 2017). In Agricultural sector, the dairy sector is the 2nd contributor in agricultural GSDP after the crop sector. The growth rate of agricultural sector is driven by dairy sector and present growth of agriculture in Punjab was only leading by livestock sector growth (Singh and Singh, 2017). The second pillar of economy is an industry sector, as it was growing at more than 6.50 per cent rate and contributing 23.6 per and 26 per cent in gross state domestic product in Punjab and Haryana economy respectively. Industry sector is leading by sub sectors namely manufacturing and construction which was growing with good growth rate in Haryana compared to Punjab. Approximately, 30 per cent population is sustaining their livelihood from industry sector. Third sector is a service sector which is main driver of the GSDP of Punjab and Haryana. This sector is contributing more than half in GSDP in both economies. Service sector is main contributor in GSDP but at the same time the sector providing only 30 per cent employment. As noticed the developed country GSDP depend upon Industry and Service sector, nevertheless the similar percentage population depends upon. In the USA economy, the 79 per cent (2009) share of GSDP is coming from service sector, the similar percentage of population sustain their livelihood from similar sector (Bureau of Economic Analysis, 2009).

Historical Punjab and Haryana are similar economics in terms of natural resources like water availability, land quality, other natural resource and also in economic growth. But from 2000-01 Haryana state crossed the Punjab economy in terms of per capita, growth of gross state domestic product, volume of GSDP and in some of another developing indicator like agriculture business farmer friendly index developed by NITI Aayog (Ramesh Chand and Jaspal Singh 2016). The average land holding of Punjab and Haryana is approximately 3.77 hectare and 2.25 hectare respectively. In near past, Punjab state was facing some serious challenges. The objective of the study is to now the comparative behavior of both economy as whole and sector sub-sector wise. Furthermore, to find the areas which are providing a strong push to Haryana economy, the study is exploring the historical growth path of two states. Consequently, identify the main sub sectors which were leading to Haryana economy.

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 three sectors from 1980-81-2014-15 at 2004-05 prices. Further the study has divided in to four phases i.e., 1980-81 to 1990-91, 1990-91 to 2000-01 to 2010-11, 2010-11 to 2014-15. Moreover, the Statistical Abstract of Punjab, Statistical Abstract of Haryana and Directorate

of Economics and Statistics have accessed to collect the data. The share of various sector has estimated on current prices. The comparatively ratio of two states also estimated at current prices. To the depth analysis of the study the three sectors namely Agricultural, Industry and Service Sector has been examined 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, moreover,

t = time period in year

Y = GSDP Manufacture and sub sector of secondary sector

a & b = Regression parameters and

CGR = Compound growth rate

NSSO survey on employment unemployment situation in India 2011 data was used to estimate the sector wise employment estimation. In the present study, we have collected principal and subsidiary states and work force participation ratio for the selected state. Estimation of sector wise employment as below:

$$\text{Employment}_{ij} = \sum_{n=1}^n \text{Population}_j * \text{WPR}_j * \text{Persons}(\text{rural} + \text{urban})_{(Ps+Ss)ij}$$

where

Employment_j = Person employed in ith state and jth sector

Population_j = Population of jth state

WPR_j = Workforce participation Ratio of jth state

Person(rural+urban)_{(Ps+Ss)ij} = total person employed (rural and urban)_(Ps+Ss) in ith state and jth sector

Comparative contribution different Sector in Punjab and Haryana

Services sector take a lead in both States the share has increased from 31 per cent to 53.4 per cent in Punjab and 29.3 per cent to around 60 per cent in Haryana during 1980-81 to 2014-15. And contrary the share of agricultural has drastically declined from 48.6 per cent to roughly 24 per cent and 51.5 per cent to 16.3 per cent in Punjab and Haryana respectively during same period of time. As important to mention that it is good sign for Haryana economy that the share of agricultural nearly 16 per cent is indicating the consequently the voluminous share of complementary sector has climbed. The heart of economy is Industry sector which reported that only able to meagre increased compared to service sector.

Therefore, it needed to improve the share of industry sector in both economies. Number of studies (Rosenstein-Rodan 1943; Lewis 1954; Scitovsky 1954; Hirschman 1958; Jorgenson 1961; Fei and Ranis 1961; Kuznets, S, 1966 and 1971, Chenery and Talyor, 1968) shows that during the process of development industry sector pulls the overburden population from agricultural sector.

Table 1: Share of Agricultural, Industry and Service sector in Punjab and Haryana economy

(Per cent)

Year	Punjab			Haryana		
	Agriculture	Industry	Service	Agriculture	Industry	Service
1980-81	48.6	20.2	31.1	51.5	19.3	29.3
1990-91	43.8	23.9	32.3	41.6	24.0	34.4
2000-01	39.0	22.8	38.2	28.4	27.6	44.0
2010-11	27.1	25.7	47.2	18.6	26.9	54.5
2014-15	23.9	22.7	53.4	16.3	24.2	59.4

Source: author's estimation based on CSO data

Developed countries are providing the employment to population as per the GDP contribution which is a sign of equal distribution of income. These two states namely Punjab and Haryana are generally known as developed states of India. Nevertheless, the issue is although the structure of the economy has changed in terms of GSDP; nonetheless, the employment structure is still conventional. It is estimated that approximately 36 per cent population sustain their livelihood from agricultural sector in Punjab and 41.2 per cent in Haryana. While in service sector only 32.5 per cent population employed in Punjab and 31.2 per cent Haryana this is a reverse ratio of GSDP of both sectors. Only industry sector could minimise the gap, as investigated that GSDP and Employment share were almost similar in Haryana 2010-2011, while the scenario of Punjab economy different whereas 25.5 per cent GSDP coming from industry sector which is providing 31.6 per cent employment to Punjab population.

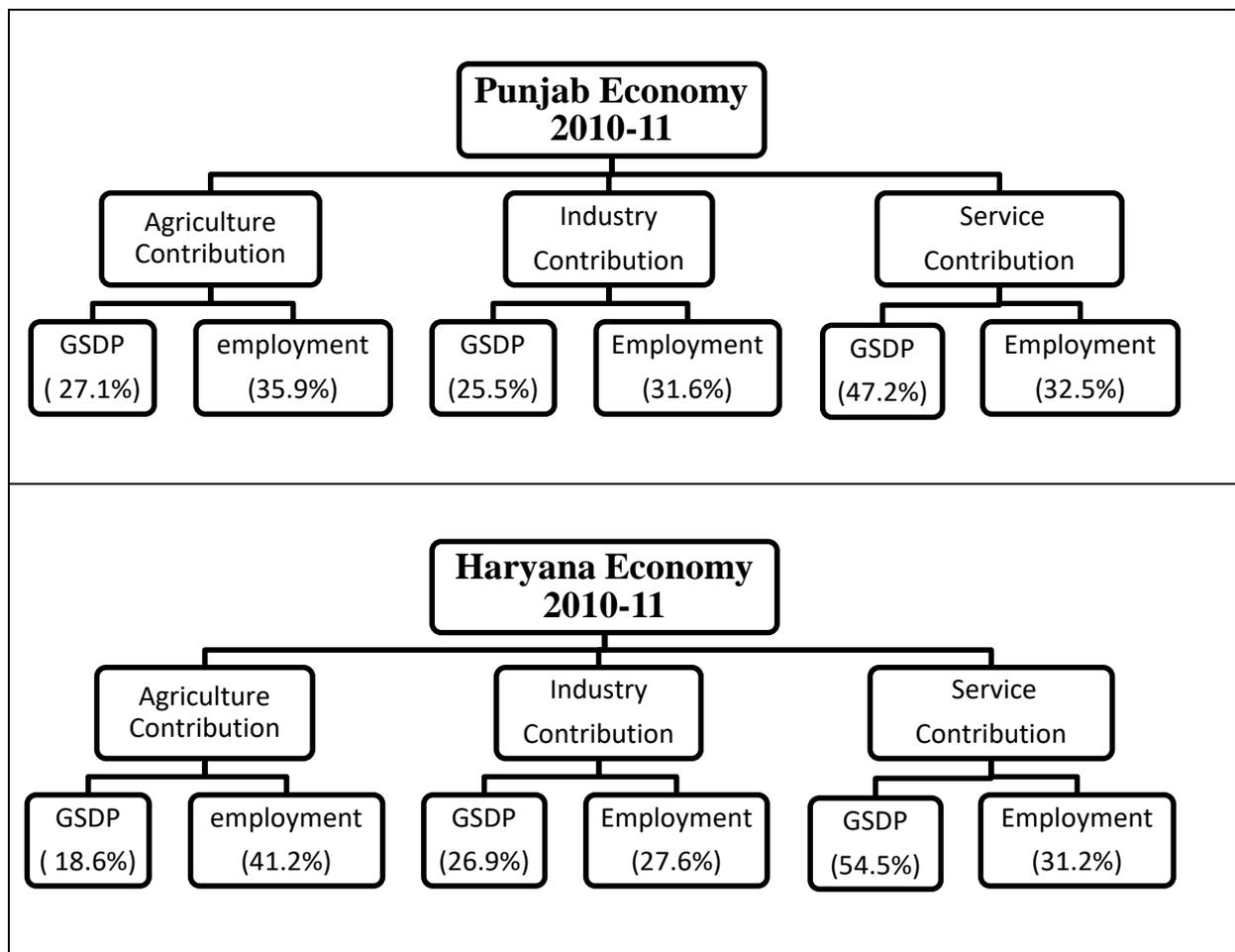


Figure 1: Sector wise contribution in GSDP and Employment in Punjab and Haryana

This imbalance distribution of income was created a severe crisis in agricultural sector. Overburden of population on agriculture shaped unviable land holding size. The result is small holding size is prevailing in countryside which turned farmers unable to get economies of scale. Most of the large size mechanical inputs like tractor, harvester combine and harvester thresher are underutilised. Consequently, the cost of cultivation is continually increasing and return are diminishing.

Growth rate is a meter which provides the picture of the economic development, as observed that agricultural sector of Punjab was performed with the growth rate 4.59 during 1980-81 to 1990-91 likewise growth trajectory has been estimated of Haryana. After the first decade, the growth rate trend has declined for Punjab and Haryana. But nearly four (4) per cent growth has been investigated during 2000-01 to 2010-11 in Haryana, while, Punjab agricultural only grew with 2.29 per cent growth rate. Overall, the growth path of agricultural sector was healthier of Haryana compared to Punjab. The industry sector growth rate of both states was almost similar (6.7 per cent) during 1980-81 to 2014-15. It is pertinent to mention that in the initial decade Haryana grew at nearly 10 per cent while the 7.31 per cent growth has recorded

for Punjab. Moreover, from 2000-01 to 2010-11 of Punjab was very fruitful growth for industrial growth which grew at rate 9.42 per cent. It is an issue with industrial growth rate during 2010-11 to 2014-15 which stands for 2.13 for Punjab and 4.56 for Haryana.

Table 2: Growth Scenario of Punjab during 1980-81 to 2014-15

Growth rate	Punjab			
	Agriculture	Industry	Service	Economy overall
1980-81 to 1990-91	4.59	7.31	4.80	5.20
1990-91 to 2000-01	2.63	6.70	6.41	5.03
2000-01 to 2010-11	2.29	9.42	8.14	6.78
2010-11 to 2014-15	1.38	2.13	9.10	5.56
1980-81 to 2014-15	2.90	6.78	6.48	5.39
	Haryana			
1980-81 to 1990-91	4.67	9.73	7.69	7.14
1990-91 to 2000-01	1.91	6.17	8.00	5.53
2000-01 to 2010-11	3.88	7.23	12.36	9.08
2010-11 to 2014-15	2.25	4.56	9.44	7.11
1980-81 to 2014-15	3.29	6.71	9.36	6.95

Source: author's estimation based on CSO data

The services sector is playing a role like pillar because in both economies this sector takes a lead role in GSDP. As overall growth of service sector of Haryana was much healthier which around 9.36 per cent whereas Punjab grew with 6.48 per cent. As important to mention that Punjab could not match the growth in service sector with Haryana in a single decade. In Haryana, the spectacular growth has been measured for decade of 2000-01 to 2010-11; this decade was also good for Punjab services sector. The overall growth of Punjab and Haryana stands 5.39 per cent and 6.95 per cent Haryana respectively. As it was explained that 2000-01 to 2010-11 was crucial decade, as significant role played by services sector which pushed the overall growth more than 9 per cent

In the previous table we observed that growth rate of Haryana crossed to Punjab. Consequently, the ratio of GSDP has been considered in table3 to know the power in term of riches. Agricultural ratio healthier of Punjab because having more cultivated land compared to Haryana. Nonetheless, it is necessary to explain that the trend of ratio was also declined in agricultural sector.

Industry sector was strong in voluminous term (GSDP) of Punjab in first two decades, after 2000-01 the reverse trend has found, it is meaning that Haryana overtake in volume of GSDP

to Punjab. The ratio started from 1.50 per cent in 1980-81 which reached at 0.72 per cent in 2014-15. In industry sector, the manufacture sector is sustaining the growth which helped to Haryana industry sector.

The picture of Service sector is likewise industry sector whereas the GSDP ratio was 1.52 per cent in 1980-81 and 0.70 per cent in 2014-15, in 2000-01 the services sector GSDP ratio was almost similar and overtakes in 2004-05. The Punjab economy has lost the sheen in various subsector; even the less volume of GDSP of Punjab Compared to Haryana is a series issues because Punjab unable to sustain the growth of Service sector, as well as negative growth rate of crop sector which would not able to take an advantage of more cultivated land available in Punjab. Therefore, it is needed to improve the crop sector with seed technology, water technology and faster dissemination of various technologies to push the growth rate of agricultural sector. New high yielding seed technologies are needed to develop which can contribute to increase the per acre productivity turned to us will able to pull the crop sector growth from severe crisis. Second major driver of agricultural growth is dairy sector (Singh & Singh,2017) which contributed an accountable share in agricultural GSDP need to improve the cattle breed through establish research department like National Dairy Research Institute in Punjab also.

Table3: Sector wise comparative Volume of GSDP of Punjab and Haryana Economy
(Ratio = Punjab/ Haryana)

Year	1980-81	1990-91	2000-01	2010-11	2014-15
Agriculture	1.35	1.39	1.59	1.23	1.13
Industry	1.50	1.31	0.96	0.80	0.72
Service	1.52	1.24	1.01	0.73	0.70
Economy overall	1.43	1.32	1.16	0.84	0.77

Source: author's estimation based on CSO data

In industry sector, manufacture is playing the lead role in GSDP, nonetheless, manufacture growth rate has declined during 2010-11 to 2014-15, therefore rethink about this sector, agri-based processing unit need to establish in Punjab to sustain the growth of manufacture sector which is a driver of industry sector. It is pertinent to mention that number of post-harvest technologies developed by research institution, nevertheless these technologies still in in lab, there is need to transfer in land and to prerequisite to associates with agricultural sector through establish new start-ups which helps to farmer to get remunerative prices of their produce as well as to push the industrial sector growth.

Table 4: Changing comparative contribution of sub sector in Punjab and Haryana economy

(Per cent)

Year	Agriculture		Industry		Service Sector		
	Crop Sector /Livestock	Livestock	Manufacture	Construction	Transport & storage	Trade, hotels & restaurants	Banking & Insurance
1980-81	98.1		58.2	28.5	8.44	42.5	7.5
1990-91	99.1		63.2	23.0	11.26	43.2	10.5
2000-01	98.5		61.7	20.2	10.85	44.9	10.8
2010-11	64.1	26.0	65.9	26.7	11.82	32.9	12.5
2014-15	61.3	28.4	65.1	27.5	12.40	27.6	11.7
Haryana							
1980-81	99.2		73.2	18.4	12.58	43.5	6.4
1990-91	98.9		79.5	13.5	15.57	43.6	7.4
2000-01	98.8		71.5	21.4	16.92	43.9	7.9
2010-11	63.35	29.28	65.1	29.3	18.53	38.7	9.6
2014-15	57.85	36.38	56.8	36.1	16.45	40.3	6.9

Source: Authors' estimation based on CSO data

The service sector growth was leading by Trade, hotels and restaurants in Punjab and Haryana in 1980-81. The share of this sector was declined from 42.046 per cent to 22.84 per cent in Punjab while the 37 per cent share was still contributing in Haryana. Haryana grew more than 8 per cent growth rate from 1980-81 even from 2000-01 to 2010-11 the growth rate was estimated more than 13 per cent, contrary, Punjab grew with 4.52 per cent, this growth rate difference leads to take service sector jump in Haryana. Which push the overall growth rate of Haryana economy the outcome also seen on per capita income which crossed to Punjab. Real estate, ownership of dwellings and business services could increase their share up roughly 14 per cent to 22.46 per cent in Haryana. This question which sector is lacking in growth as result is pulling back the growth. It has identified that real sector growth rate was rotating 4.01 per cent in Punjab during 2010-1 to 2014-15 while the spectacular growth (15.89) has been estimated in Haryana during the same period. The decade of 2000-01 to 2010-11 was very fruitful growth (8.10 per cent) estimated for Haryana of Real estate, ownership of dwellings, contrary Punjab grew only with growth rate 3.84 per cent. This one is another factor identified which was lacked in growth in Punjab.

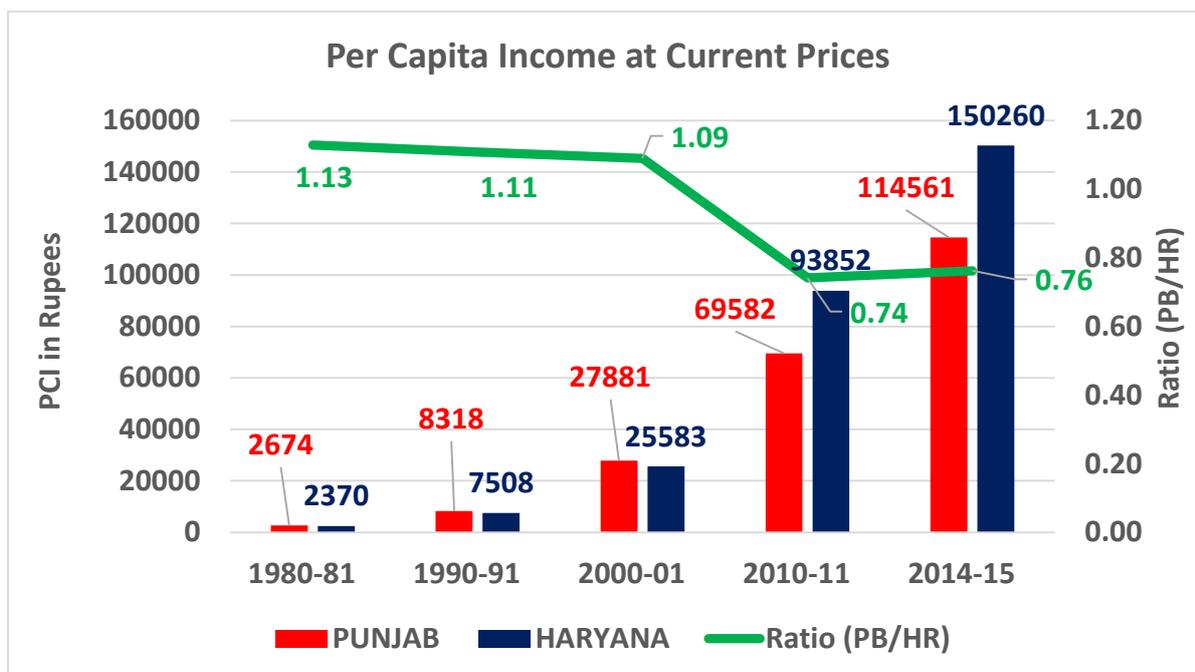


Figure 2: Comparative per capita income and ratio of Punjab and Haryana at selected time

The outcome of better growth of Haryana economy it crossed to Punjab in per capita income. The per capita income has been calculated at current prices. In 1980-81 Punjab income was higher 12 per cent compared to Haryana, in the next point of time (1990-91) 10 per cent more income calculated for Punjab, as structure change of economy also change the per capita income. Haryana income was 34 per cent and 31 per cent higher in 2010-11 and 2014-15 respectively. The ratio is providing the clear picture of per capita income of Punjab and Haryana. The ratio was 1.13 in the 1980-81, it had reverse in 2014-15, fall in favour of Haryana economy. As consequently, we have estimated the growth of per capita income at constant prices which increased with the growth rate 3.01 per cent from 1980-81 to 2014-15. As observed that Haryana per capita income was almost augmented with the growth rate 7.0 per cent while Punjab grew with 4.24 during 2000-01 to 2010-11, as important to explain that in this decade Haryana per capita Income surpassed to Punjab.

Table 5 : Comparative annual compound growth rate of per capita income at 2004-05 prices of Punjab and Haryana

	(Per cent)				
Growth rate	1980-81 to 1990-91	1990-91 to 2000-01	2000-01 to 2010-11	2010-11 to 2014-15	1980-81 to 2014-15
Punjab	3.32	2.48	4.24	3.49	3.01
Haryana	4.28	2.46	6.94	5.25	4.40

Source: authors estimation based on CSO data

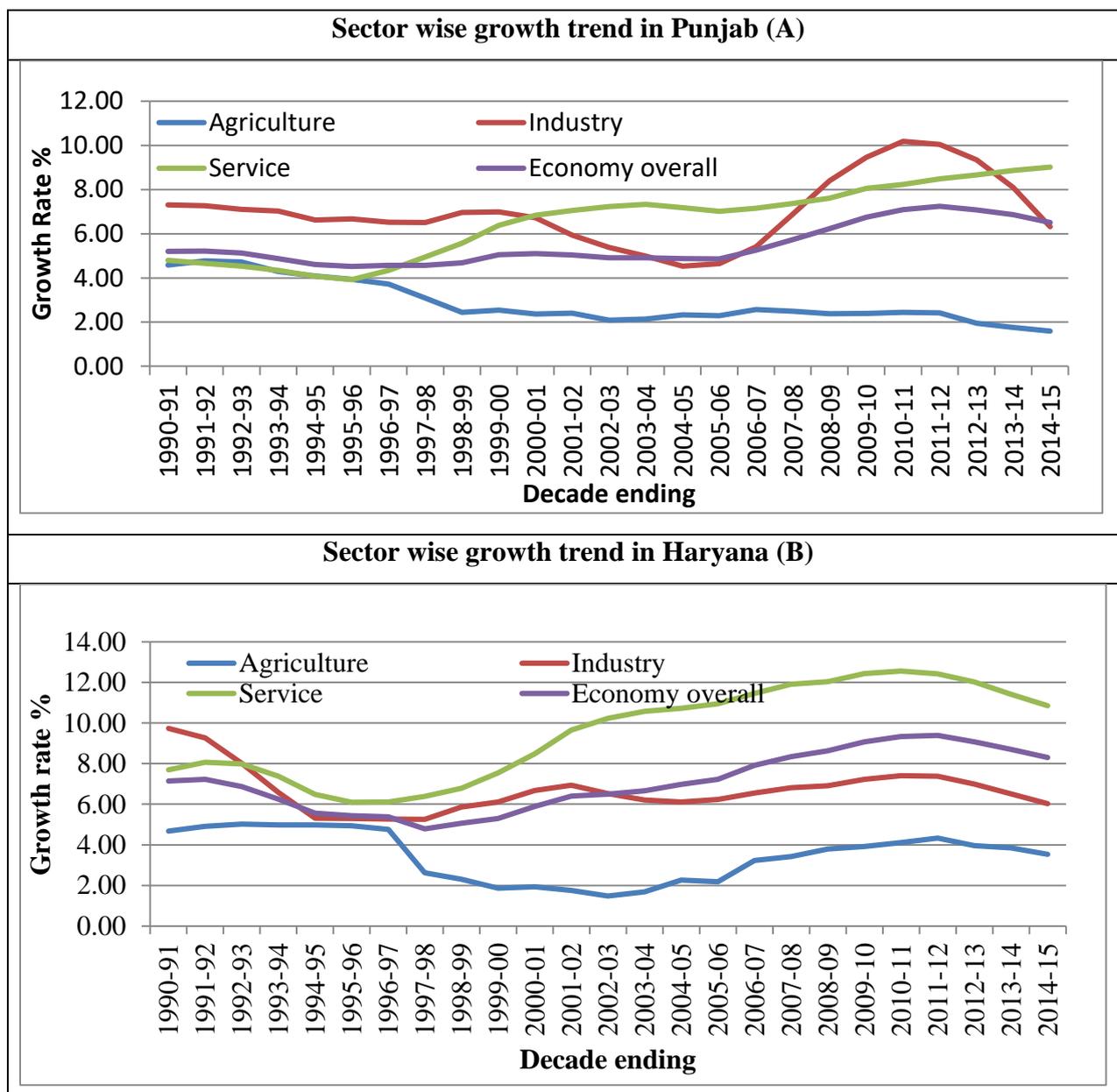


Figure 3: Growth trends of GSDP from different sector in Punjab and Haryana economy

In figure 3, we estimate the ending year growth rate with the support of initial year of 1980-81, and same methodology is extended to calculate the growth rate of next year like 1980-81 to 1990-91, 1981-82 to 1991-92, 1982-83 to 1992-93 etc as well as to know the back push of previous investment to economy. It had observed agricultural growth trend continue declined in Punjab while was flatulating in Haryana. Overall economy of Punjab which stands around 4.5 in Punjab at ending year of 1990-91 which reached at 6.2 per cent at the ending year of 2014-15, this growth rate pulled by industry as well as service sector, the industry sector was increasing from ending year of 2004-05 and reached at more than 10 per

cent in 2010-11 afterwards declined trend has found for the ending year 2014-15 in Punjab. Service sector grew at around 5 per cent growth rate at ending year 2005-2016 after 2008-09 crossed to 6 per cent growth rate in Punjab which is leading the overall economy growth of Punjab.

The ending year 1990-91 the growth of service sector in Haryana around 8 per cent which reached more than twelve per cent at the ending year of 2007-08. This push of growth pushes the whole economy because this sector is contributed major share as can say that driver of Haryana economy also able to surpass the per capita income to Punjab. the overall economy was also enjoying the more than 8 per cent growth after the ending year of 2005-06.

Conclusion

In the current study, we observed the growth scenario of two states, consequently, it has been estimated the contribution of three sector namely, Agricultural, Industry and services sector. Study has conducted from 1980-81 to 2014-15 and further divided in to four phases as decade wise. It has noticed that economy structure of Punjab and Haryana have changed. In 1980-81 the agricultural sector was playing a dominant role in GSDP contribution which has declined up to 24 per cent in Punjab and 18 Per cent in Haryana. Subsequently, the burden of employment from agricultural has diminished some extent. As noticed that industry sector meagre contribution was improved in total GSDP while major change was seen in agricultural sector and service sector. The finding of study, the service sector contribution almost 60 per cent in Haryana and 53 per cent in Punjab, nevertheless, employment share just 32 per cent in Punjab and 31 per cent Haryana. This is an issue, the agricultural is sustaining the livelihood of major portion of population. There is need to shift the population from agricultural sector to industry and services sector as to decline the dependence on agricultural sector.

The Punjab economy behind from Haryana in various sector and sub sectors, as identified that industry and Service sectors growth jump helps to Haryana to overtake the Punjab. The GSDP ratio which was stand in favour (1.43) of Punjab in 1980-81 had loosened (0.77) by Punjab in 2014-15. The outcome of this declined GSDP in voluminous reduce the per capita income of Punjab.

Furthermore, the sectors have identified in the current study which were the driver of the growth of three sectors, as observed that agricultural sector is drive by sub sectors namely crop and dairy in both states, industry sector pushed by sub sectors namely manufacturing as well as construction sector. The service sector was leading Trade, hotels and restaurants in

Punjab and Haryana in 1980-81, the picture has changed in 2014-15 the all sub sectors were contributing accountable.

Agricultural growth rate is leading by crop sector which was growing with negative growth rate from 2011-12 to 2016-17 in both States. It is needed to improve the crop sector growth through seed technologies, water technologies, timely availability of new seed technologies. As consequently need to motivate to farmer for high crop value with installation of processing units as well as need to shift the technology from lab to land. Industry sector can boost with the entry of new start-ups as subsequently there is need to boost research for new technologies which can transfer to new start-ups as well as established industries. In service sector Punjab need to improve the growth of subsectors Trade, hotels and restaurants and Other services. In sum, we conclude that these three sectors are interlinked.

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