Rural Non-Farm Employment and Structural Transformation in Punjab: Evidence from Sectoral Trends

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Abstract

Punjab's agricultural development has historically supported national food security, but declining farm profitability, resource degradation and limited employment absorption have increased the importance of rural non-farm employment. This study examines Punjab's structural transformation by analysing changes in its relative economic position, sectoral composition, growth performance and distribution of employment. It uses secondary data from the Punjab Economic Survey 2025-26, Periodic Labour Force Survey 2023-24, Ministry of Statistics and Programme Implementation and official population projections. Percentage shares, annual growth rates and trend comparisons are employed for the analysis.

The results show that Punjab's share in India's real GDP declined from 3.05 per cent in 2011-12 to 2.78 per cent in 2025-26, indicating slower economic expansion relative to the national economy. The share of agriculture in constant-price GSVA decreased from 30.81 per cent to 21.22 per cent, while the services share increased from 43.79 per cent to 54.16 per cent. The industrial share remained nearly unchanged, suggesting that structural change has been driven primarily by services rather than industrial expansion. Agriculture also accounted for a higher share of employment than output, whereas services contributed more to output than to employment.

The findings indicate that Punjab's transition towards non-agricultural activities remains uneven. Expanding productive rural non-farm employment will require rural industrialisation, agro-processing, skill development, improved infrastructure and stronger linkages between agriculture and non-agricultural sectors.

Keywords: Rural non-farm employment; structural transformation; sectoral diversification; Punjab economy; employment-output gap; rural livelihoods.

Introduction

Structural transformation in rural economies involves the gradual movement of labour and income from agriculture towards manufacturing, construction and services. Rural non-farm employment (RNFE) supports this transition by absorbing surplus agricultural labour, supplementing household income and strengthening rural–urban economic linkages. It is particularly important where agricultural growth and employment opportunities have weakened (Lanjouw & Shariff, 2004; Abraham, 2023). Punjab offers an important setting for examining this process. Punjab, the granary of India, has played a historic role in transforming India from a nation that was food deficient to one that is self-sufficient. The Punjab state with only 1.53 percent of geographical area of the country has been contributing about 50-60 percent of wheat and about 35-40 percent of rice of procured by the Government of India for food security of the country for the last four decades.

The Green Revolution transformed it into one of India's most productive agricultural states through improved seeds, irrigation, mechanisation, institutional credit and public procurement. It substantially increased agricultural productivity, rural income and Punjab's contribution to national food security. However, Punjab's agricultural economy gradually became concentrated around the wheat-paddy cropping system. Stagnating productivity, rising cultivation costs, declining profitability, groundwater depletion, soil degradation and mechanisation have reduced agriculture's capacity to provide sustainable income and employment. Rural economic diversification has therefore become both an economic and environmental necessity (Ghuman & Khurana, 2025; Government of Punjab, 2026).

Punjab's sectoral structure indicates a gradual movement away from agriculture. In 2025-26, agriculture and allied activities contributed 22.77 per cent of the state's Gross State Value Added, compared with 28.73 per cent from industry and 48.50 per cent from services (Government of Punjab, 2026). In 2023-24, agriculture employed about 27.2 per cent of Punjab's workforce, while 72.8 per cent worked in non-agricultural activities (MoSPI, 2024).

Nevertheless, declining agricultural shares do not necessarily indicate successful structural transformation. The outcome depends on whether workers enter productive and secure occupations or remain concentrated in casual, informal and poorly paid activities. Rural non-farm employment (RNFE) includes manufacturing, construction, trade, transport, finance, education, healthcare, public administration and other services. Participation in RNFE may be distress-driven or opportunity-driven. Small landholdings, inadequate farm income, indebtedness, mechanisation and seasonal underemployment may push workers out of agriculture. Alternatively, higher wages, regular employment, education, skills, infrastructure and proximity to urban markets may attract them towards non-farm occupations. Such participation may represent household livelihood diversification rather than a complete withdrawal from agriculture (Abraham, 2023).

At the national level, the share of non-farm workers in rural employment increased from 21.6 per cent in 1993-94 to 40.2 per cent in 2023-24 (Misra, 2025). Construction and services became major sources of rural employment. However, access remains unequal, particularly for women, demonstrating the need to evaluate RNFE through wages, regularity, gender inclusion and social protection. Education, skills, household characteristics, infrastructure, industrial investment and transport connectivity influence access to productive non-farm employment (Pattayat & Parida, 2024). Although RNFE can increase household income and reduce poverty, regular salaried employment and productive self-employment generally provide better outcomes than casual and survival-oriented work (Hashmi, 2025). Punjab-specific studies show that education, land ownership, infrastructure and urban proximity influence participation and returns from RNFE (Vatta & Garg, 2008; Vatta & Sidhu, 2010). Kaur et al. (2024) found that non-farm activities contributed 31.15 per cent of rural household income, with a considerably higher share in peri-urban than peri-rural villages.

Despite its growing importance, recent evidence on RNFE in Punjab remains limited. The present study therefore examines changes in the state's sectoral and employment structure using PLFS, the Punjab Economic Survey and other official sources. It assesses whether non-farm expansion represents productive diversification or a distress-driven transition and highlights the need for rural industrialisation, agro-processing, skill development, entrepreneurship and improved infrastructure.

2. Literature Review

The rural non-farm sector is widely recognised as an important part of rural development and structural transformation. It can absorb surplus agricultural labour, reduce pressure on farming, moderate rural-urban migration and promote a more balanced distribution of economic activity (Lanjouw & Lanjouw, 2001). However, its contribution depends on the type of employment generated and the ability of poorer households to access productive opportunities. Haggblade et al. (2010) argued that poverty-reducing non-farm growth requires expanding rural markets, stronger economic linkages and improved access for disadvantaged workers. In India, workers leaving agriculture have not been adequately absorbed by organised manufacturing. Instead, many have entered construction, petty trade, informal services and low-return self-employment, producing an incomplete or "stunted" structural transformation (Binswanger-Mkhize, 2013). Manufacturing, construction, transport, trade and social services have generated employment, but their capacity to provide secure and productive work remains uneven (Parida, 2015).

Participation in non-farm employment is influenced by household resources, individual capabilities and regional conditions. Family size, dependency ratio, landholding, education, skills, caste, gender, credit and social networks affect both participation and occupational choice. Workers with limited education are generally concentrated in construction and manual employment, whereas better-educated workers have greater access to salaried and service-sector occupations (Jatav & Sen, 2013). In Punjab, larger families, higher dependency

ratios, small landholdings and social backwardness encourage non-farm participation. However, inadequate education, skills and capital often confine these households to less-remunerative activities (Pavithra & Vatta, 2013). Interstate differences in diversification are also influenced by infrastructure, urbanisation and the structure of regional economies (Kaur et al., 2019).

Entry barriers explain why non-farm opportunities are not equally available to all rural households. A lack of education, technical training, credit and social capital restricts small and marginal households from entering productive occupations (Drall & Mandal, 2021). Comparative evidence from Punjab and Bihar shows that landless and marginal households often enter the sector because of limited agricultural resources, while better-off households have greater access to business and salaried employment (Singh, 2020). Digital connectivity has also become important. Mobile-phone ownership reduces information and job-search costs and improves participation in casual work, salaried employment and non-agricultural self-employment (Rajkhowa & Qaim, 2022).

The welfare effects of non-farm employment are generally positive but differ across occupations and social groups. Non-farm income can reduce poverty, strengthen economic mobility and protect households against agricultural risks. However, unequal access to remunerative opportunities can also increase income inequality (Himanshu et al., 2013). Skilled professional, clerical and sales occupations have stronger poverty- and vulnerability-reducing effects than manual employment, although unskilled work also provides important income support to poorer households (Imai et al., 2015). Evidence from eastern India similarly shows that non-farm employment improves household well-being, but the gains vary according to education, landholding, employment status and location (Kumar et al., 2020). Its income effects may also be weaker in agriculturally developed states such as Punjab when available opportunities are informal or poorly paid (Kapoor & Kapoor, 2022).

Recent studies have therefore shifted attention from the numerical expansion of non-farm employment to its quality and inclusiveness. Construction, trade and transport generally absorb workers from poorer households, while educated workers are more strongly represented in regular services (Das & Deka, 2023). In Punjab, the rising importance of non-agricultural employment has been accompanied by declining work participation, weak employment responsiveness and the withdrawal of women from measured employment (Sharma, 2023).

3. Objectives

- To analyse trends in Punjab's contribution to India's GDP and changes in its sectoral composition and growth from 2011-12 to 2025-26.
- To examine the pattern of employment diversification in Punjab by comparing the employment and GSVA shares of agriculture, industry and services.

4. Material and Methods

4.1 Research Design

The study is descriptive and analytical in nature. It is based entirely on secondary data and examines changes in Punjab's economic structure, sectoral growth and employment composition.

4.2 Study Period

The study covers the period from 2011-12 to 2025-26. The year 2011-12 was selected as the starting point because it is the base year of the constant-price GSDP and GSVA series.

4.3 Data Sources

Data were collected from the following official sources:

- Punjab Economic Survey 2025-26, Economic and Statistical Organisation, Government of Punjab;
- Ministry of Statistics and Programme Implementation (MoSPI), Government of India;
- Population Projections for India and States, 2011-2036; and
- Periodic Labour Force Survey, 2023-24.

The Punjab Economic Survey provided information on Punjab's GSDP, sectoral GSVA and sectoral growth rates. MoSPI data were used for India's GDP, while the PLFS provided information on employment composition.

4.4 Sector Classification

The economy and employment were divided into three broad sectors - Agriculture and allied activities, Industry and Services. The industry sector includes mining, manufacturing, electricity, water supply and construction. Services include trade, transport, finance, education, health, public administration and other service activities.

4.5 Construction of Indicators

Punjab's share in India's GDP was calculated by comparing Punjab's GSDP with India's GDP at constant 2011-12 prices. Punjab's population share was calculated by comparing its projected population with the projected population of India.

Sectoral shares were calculated by comparing the GSVA of each sector with Punjab's total GSVA. For the period from 2021-22 onward, the sectoral shares were calculated using the constant-price sectoral growth rates reported in the Punjab Economic Survey 2025-26.

4.6 Methods of Analysis

The study uses percentage shares, annual growth rates and trend analysis. Tables and line graphs were used to present changes in Punjab's contribution to India's GDP, sectoral composition and sectoral growth. Employment shares were compared with sectoral GSVA shares to understand differences between the distribution of workers and output across agriculture, industry and services.

5. Results and Discussion

5.1 Punjab's Relative Position in the Indian Economy

Table 1 and Figure 1 show a gradual decline in Punjab's contribution to India's real GDP between 2011-12 and 2025-26. During the initial period, the state's share remained stable at slightly above 3 per cent, increasing marginally from 3.05 per cent in 2011-12 to 3.06 per cent in 2013-14. This stability was not sustained in subsequent years. The share declined to 2.96 per cent in 2014-15 and continued to fall, reaching 2.84 per cent in 2018-19. It remained unchanged in 2019-20, indicating that Punjab's economy was expanding more slowly than the overall Indian economy during this period.

A limited improvement occurred after 2019-20. Punjab's share increased to 2.86 per cent in 2020-21 and remained at this level in 2021-22 before rising marginally to 2.87 per cent in 2022-23. This temporary improvement may reflect differences in the impact of the COVID-19 pandemic and the pace of economic recovery across states. However, the subsequent decline to 2.81 per cent in 2023-24 and 2.78 per cent in 2025-26 suggests that the improvement did not develop into a sustained change in Punjab's relative growth performance.

Over the entire period, Punjab's share in India's real GDP declined by 0.27 percentage points, equivalent to a relative fall of approximately 8.9 per cent. This should not be interpreted as a contraction of Punjab's economy in absolute terms. Rather, it indicates that the state's real output increased at a slower rate than India's total output. This finding is consistent with the wider evidence that Punjab's economic growth has remained below the national average and that its relative position has weakened over time (Sanyal & Arora, 2024; NITI Aayog, 2025).

Punjab's projected share in India's population also declined, but the change was smaller and more gradual. It decreased from 2.29 per cent in 2011-12 to 2.21 per cent in 2025-26, a fall of 0.08 percentage points. The slower decline in population share relative to GDP share indicates that demographic change alone cannot explain the weakening of Punjab's contribution to national output.

Throughout the period, Punjab's GSDP share remained higher than its population share, showing that its per-capita output continued to exceed the national average. However, this relative advantage narrowed. The gap between the two shares declined from 0.76 percentage points in

Table 1: Punjab's Share in India's Real GDP and Population, 2011-12 to 2025-26

Financial year	Punjab's share in India's GDP at constant (2011-12) prices (%)	Projected share of Punjab in India's population (%)
2011-12	3.05	2.29
2012-13	3.05	2.28
2013-14	3.06	2.28
2014-15	2.96	2.27
2015-16	2.90	2.26
2016-17	2.87	2.26
2017-18	2.86	2.25
2018-19	2.84	2.25
2019-20	2.84	2.24
2020-21	2.86	2.23
2021-22	2.86	2.23
2022-23	2.87	2.22
2023-24 (RE)	2.81	2.22
2024-25 (PE)	2.81	2.21
2025-26 (AE)	2.78	2.21

Sources: Economic Survey of Punjab, 2025-26; MoSPI, Government of India; and Population Projections for India and States, 2011-2036.

2011-12 to 0.57 percentage points in 2025–26. Similarly, the ratio of Punjab's GDP share to its population share decreased from approximately 1.33 to 1.26. Thus, Punjab retained a favourable per-capita output position, but the extent of this advantage declined as other states expanded more rapidly.

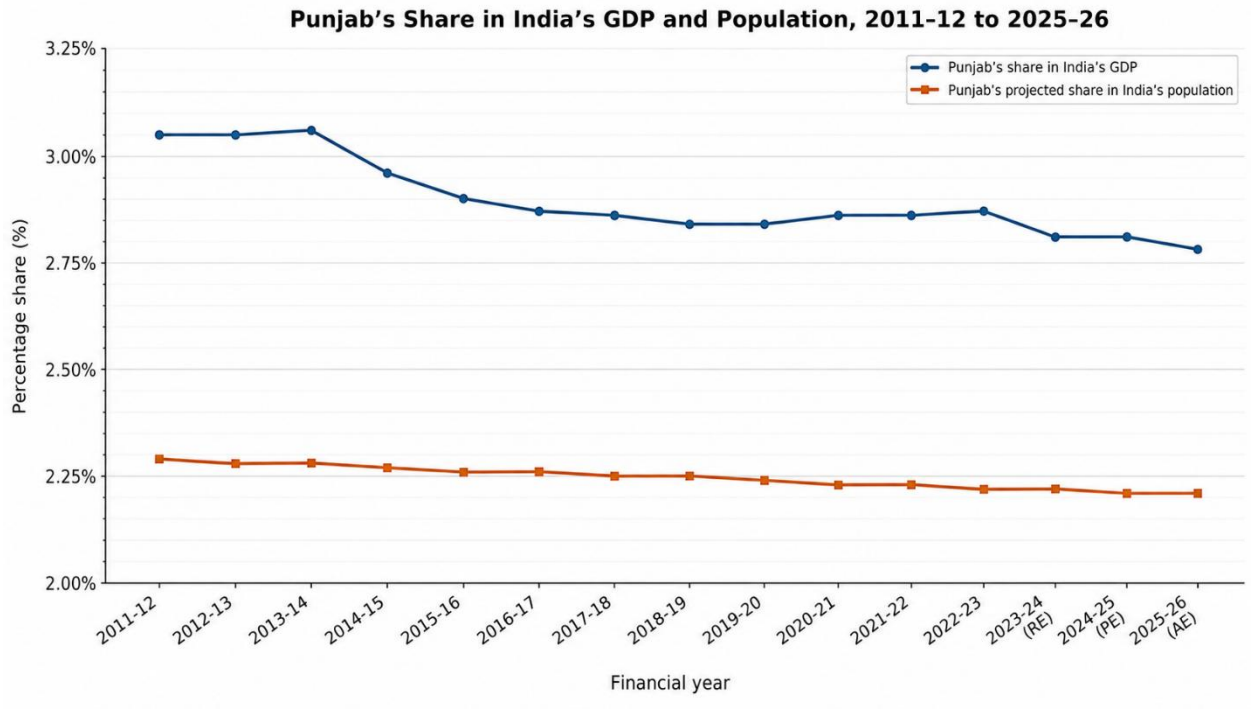

Fig 1: Punjab's Share in India's GDP and Population, 2011-12 to 2025-26

Note: GDP is measured at constant 2011-12 prices. The Y-axis begins at 2.00 % to highlight variation.

Figure 1 visually confirms the narrowing difference between Punjab's output and population shares. Since the vertical axis begins at 2 per cent, the figure makes relatively small annual variations more visible and should be interpreted together with the values reported in Table 1. The overall trend nevertheless remains clear: Punjab continues to contribute more to national output than its population proportion, but its relative economic importance has gradually diminished.

The decline highlights the need to strengthen the productive base of the state economy. Faster industrial development, expansion of modern services, agricultural diversification and stronger linkages between farm and non-farm activities are required to improve Punjab's long-term growth performance. The revised, provisional and advance estimates for the final three years may undergo subsequent revision, but they presently indicate the continuation of the broader downward trend.

5.2 Changing Sectoral Structure of Punjab's Economy

Table 2: Sector-wise Percentage Share in Total GSVA of Punjab at Constant Prices

Year	Agriculture and Allied Activities	Industry Sector	Services Sector	Overall
2011-12	30.81	25.40	43.79	100.00
2012-13	29.72	24.83	45.45	100.00
2013-14	29.20	24.69	46.11	100.00
2014-15	27.14	24.99	47.87	100.00
2015-16	26.15	25.21	48.64	100.00
2016-17	26.11	25.14	48.75	100.00
2017-18	25.77	25.12	49.11	100.00
2018-19	25.02	25.18	49.80	100.00
2019-20	24.66	24.59	50.75	100.00
2020-21	27.27	23.90	48.83	100.00
2021-22	26.08	24.11	49.81	100.00
2022-23	24.93	23.99	51.07	100.00
2023-24	23.48	24.52	52.00	100.00
2024-25 (QE)	22.93	24.41	52.66	100.00
2025-26 (AE)	21.22	24.62	54.16	100.00

Source: Economic and Statistical Organisation, Government of Punjab, Punjab Economic Survey 2025-26.

Note: QE = Quick Estimates; AE = Advance Estimates. The shares from 2021-22 onward are calculated using the constant-price sectoral growth rates reported in the Economic Survey

Table 2 and Figure 2 show a clear change in the sectoral composition of Punjab's real GSVA between 2011-12 and 2025-26. The share of agriculture and allied activities declined from 30.81 per cent to 21.22 per cent, representing a reduction of 9.59 percentage points. In contrast, the share of services increased from 43.89 per

cent to 54.16 per cent. The services sector therefore accounted for more than half of Punjab's real GSVA by 2019-20 and further strengthened its position in subsequent years.

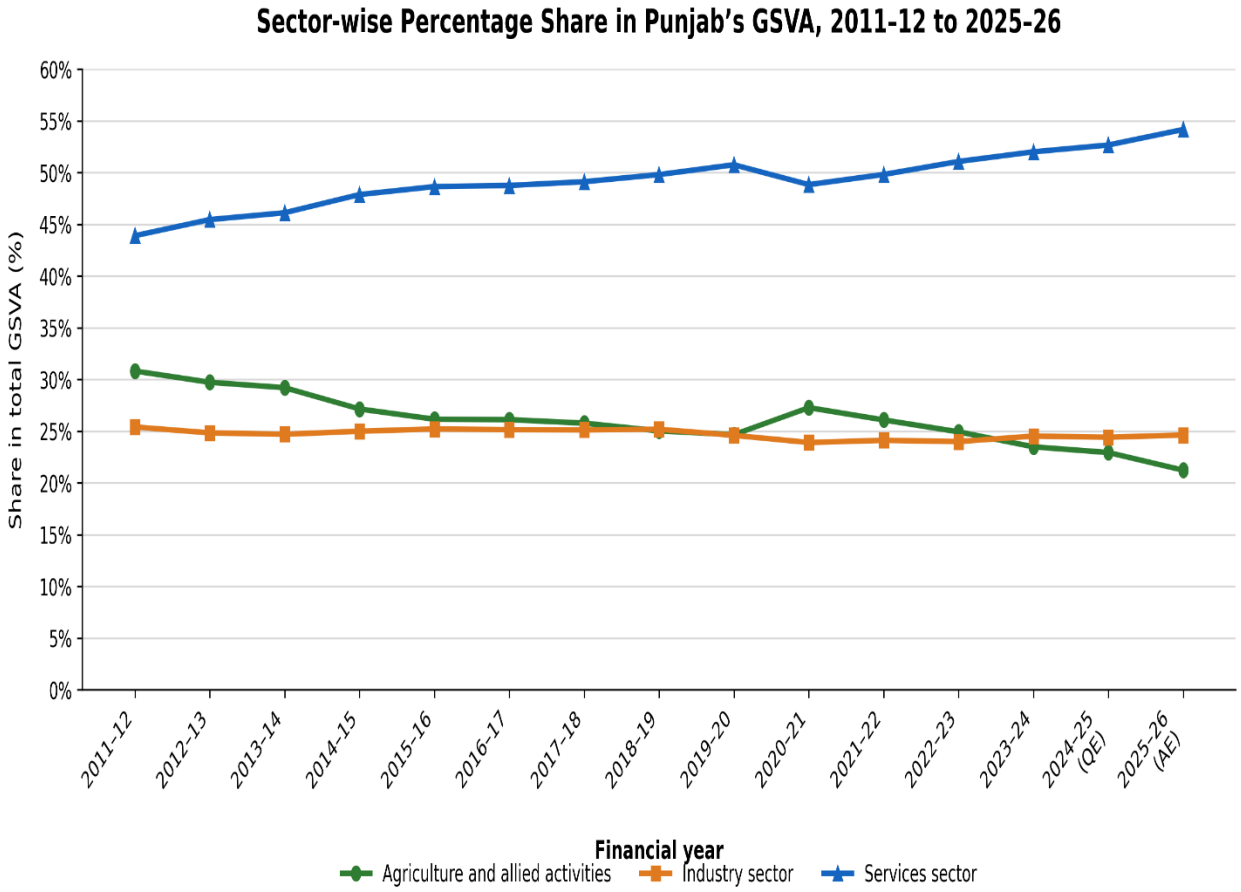

Fig 2: Sector-wise Percentage Share in Total GSVA of Punjab at Constant Prices

The industrial sector did not experience a comparable expansion. Its share remained within a relatively narrow range throughout the period and declined slightly from 25.40 per cent in 2011-12 to 24.62 per cent in 2025-26. Thus, Punjab's structural transformation has largely been driven by the movement of output from agriculture towards services rather than by sustained industrial growth. This pattern indicates limited industrial deepening within the state economy.

A temporary interruption in the long-term trend occurred during 2020-21. The agricultural share increased from 24.66 per cent to 27.27 per cent, while the shares of industry and services declined to 23.90 per cent and 48.83 per cent, respectively. This shift may be associated with the relative resilience of agriculture during the COVID-19 disruption, when industrial and service activities were more severely affected. It should not, however, be interpreted as a permanent reversal of structural change.

The post-pandemic period restored the earlier pattern. The services share increased from 49.81 per cent in 2021-22 to 54.16 per cent in 2025-26, while the agricultural share declined to 21.22 per cent. The industrial share showed only a modest improvement. Overall, the findings reveal a service-led transformation of Punjab's

output structure. Although this creates a wider economic setting for non-farm diversification, sectoral GSVA shares alone cannot establish whether rural workers have entered productive non-farm employment. This requires a separate examination of the sectoral composition and quality of employment. The quick and advance estimates for the final two years should also be interpreted cautiously because they remain subject to revision.

5.3 Sector-wise Growth Performance of Punjab's Economy

Table 3 and Figure 3 show considerable differences in the growth performance of Punjab's major sectors. Agriculture and allied activities recorded the highest fluctuations, with growth ranging from 6.26 per cent in 2016-17 to -3.44 per cent in 2014-15. Agricultural growth remained relatively weak in the later years and is estimated to decline by 2.50 per cent in 2025-26, indicating the sector's continuing instability.

Industrial growth was generally moderate before the pandemic but slowed to 1.13 per cent in 2019-20. It contracted sharply by 8.43 per cent in 2020-21 before recovering to 6.92 per cent in 2021-22. The sector subsequently maintained positive growth, reaching 8.40 per cent in 2023-24 and an estimated 6.30 per cent in 2025-26. Services emerged as the most consistently growing sector, recording growth rates above those of agriculture and industry in most years. Although services contracted by 9.40 per cent during 2020-21, they recovered strongly and grew by 8.12 per cent in 2021-22 and 8.90 per cent in 2022-23. Service-sector growth is estimated at 8.40 per cent in 2025-26.

Table 3: Sector-wise Growth Rates of Punjab's Economy at Constant (2011-12) Prices (per cent)

Year	Agriculture and Allied Activities	Industry Sector	Services Sector	Overall GSDP
2011-12	1.65	6.27	9.44	6.52
2012-13	0.87	2.33	8.56	5.32
2013-14	3.37	4.67	6.72	6.63
2014-15	-3.44	5.08	7.88	4.23
2015-16	1.34	6.18	6.90	5.74
2016-17	6.26	6.15	6.68	6.87
2017-18	4.79	6.04	6.85	6.43
2018-19	2.38	5.73	6.95	5.91
2019-20	2.00	1.13	5.60	4.02
2020-21	4.22	-8.43	-9.40	-6.63
2021-22	1.39	6.92	8.12	6.76
2022-23	1.50	5.70	8.90	6.60
2023-24	-0.10	8.40	8.00	6.80
2024-25 (QE)	3.50	5.50	7.30	6.30
2025-26 (AE)	-2.50	6.30	8.40	6.10

Source: Economic and Statistical Organisation, Government of Punjab, Punjab Economic Survey 2025-26.

Note: QE = Quick Estimates; AE = Advance Estimates. Sectoral figures relate to GSVA, whereas the overall growth rate relates to GSDP.

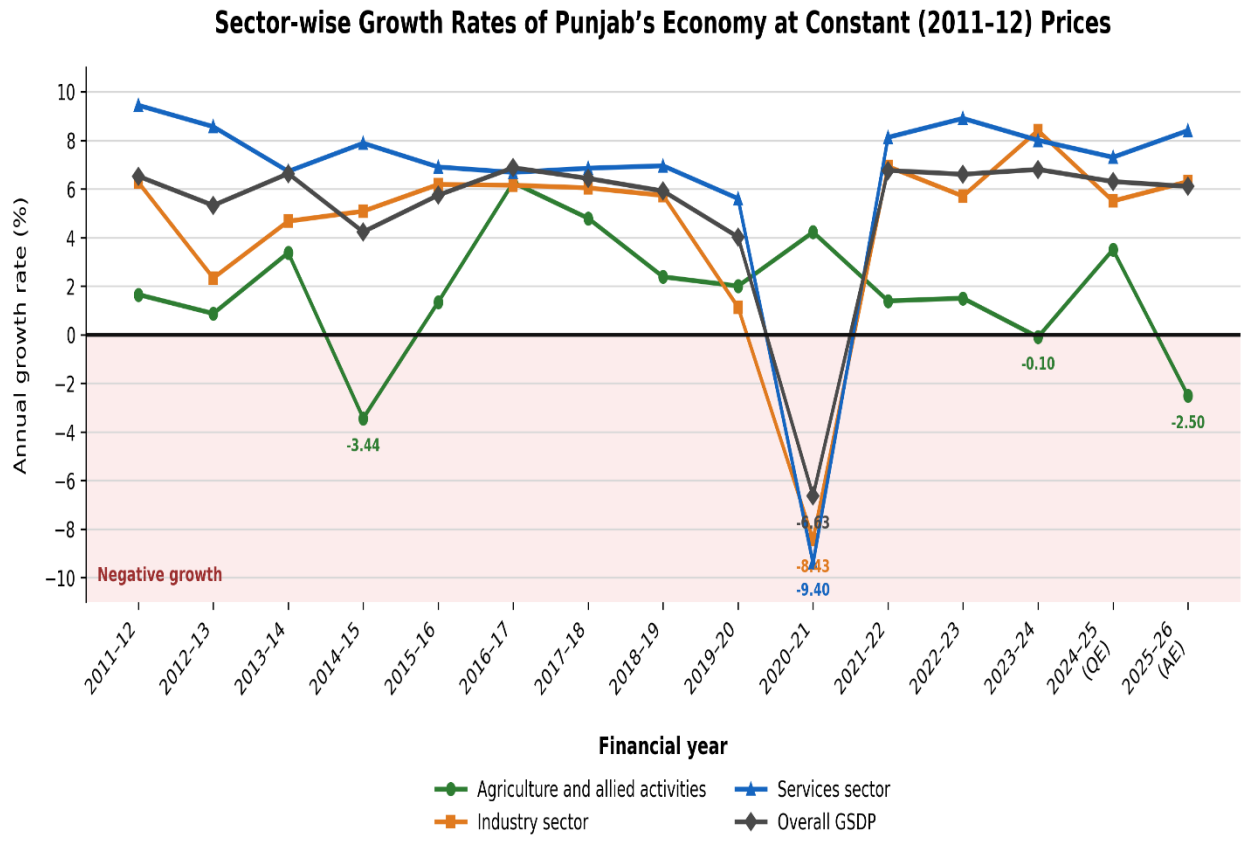

Fig 3: Sector-wise Growth Rates of Punjab's Economy at Constant (2011-12) Prices (percent)

Punjab's overall real GSDP growth remained between 4.02 and 6.87 per cent before the pandemic, followed by a contraction of 6.63 per cent in 2020-21. Growth recovered to 6.76 per cent in 2021-22 and remained above 6 per cent thereafter. The findings indicate that Punjab's recent economic growth has been driven mainly by industry and services, while agricultural growth has remained comparatively slow and unstable. This pattern strengthens the case for expanding productive non-farm opportunities, although growth rates alone do not reveal the scale or quality of employment generated.

Sectoral Composition of Output and Employment

Table 4 reveals a noticeable divergence between the sectoral distribution of employment and output in Punjab. Agriculture and allied activities account for 27.0 per cent of employment but contribute 22.77 per cent to GSVA. The resulting employment–output gap of 4.23 percentage points suggests that agriculture continues to support a disproportionately large workforce relative to its economic contribution. This reflects the persistence of low labour productivity and incomplete movement of workers towards higher-productivity activities.

Table 4: Sector-wise Composition of GSVA (2025-26) and Employment (2023-24) in Punjab

Sector	Employment share, 2023-24 (%)	Share in GSVA, 2025-26 (AE) (%)
Agriculture and allied activities	27.0	22.77
Industry	32.2	28.73
Services	40.8	48.50
Overall	**100.0**	**100.00**

Sources: PLFS 2023-24; Economic Survey of Punjab, 2025-26.

A similar, though smaller, difference is observed in industry, which accounts for 32.2 per cent of employment and 28.73 per cent of GSVA. The sector therefore performs an important labour-absorbing function, but its contribution to value addition has not expanded proportionately. Services present the opposite pattern: their share in GSVA stands at 48.50 per cent, compared with an employment share of 40.8 per cent. This positive output–employment difference of 7.70 percentage points indicates relatively higher output per worker and confirms the service-led character of Punjab's structural transformation.

Collectively, industry and services account for 73.0 per cent of employment and 77.23 per cent of GSVA, demonstrating the growing dominance of non-agricultural activities in Punjab's economy. Nevertheless, the continued employment–output imbalance in agriculture and industry indicates that structural transformation remains uneven. The results provide an important macroeconomic context for the expansion of non-farm employment, although the quality and productivity of such employment require separate assessment. Since the employment and GSVA figures relate to different years, the comparison should be regarded as indicative rather than as a precise measure of sectoral labour productivity.

6. Conclusion

The study reveals that Punjab's economy has undergone a gradual but uneven structural transformation. The state's declining share in India's real GDP indicates a weakening of its relative economic position. At the sectoral level, the share of agriculture has declined substantially, while services have emerged as the dominant contributor to GSVA. However, the industrial share has remained largely stagnant, indicating that Punjab's transformation has been primarily service-led rather than supported by broad-based industrialisation.

The comparison of employment and output further highlights the uneven nature of this transition. Agriculture continues to employ a larger proportion of workers than its contribution to GSVA, suggesting lower output per worker and incomplete labour reallocation. Services, in contrast, contribute a higher share of output than employment. Although non-agricultural activities now account for the majority of employment and output, this numerical shift does not necessarily represent productive diversification. Its developmental significance depends on the quality, security and remuneration of the employment generated.

Punjab therefore needs a coordinated strategy that promotes rural industrialisation, agro-processing, small enterprises, skill development and stronger farm–non-farm linkages. Improved infrastructure, access to credit and targeted support for women and land-constrained households are also essential for creating inclusive non-farm opportunities. Since the analysis is based on aggregate secondary data and employment and output figures relate to different years, the findings are indicative. Further household-level research is required to assess the quality and welfare effects of rural non-farm employment.

7. Limitations of the Study

The study is based on aggregate secondary data and therefore does not capture variations across rural households, occupations and regions within Punjab. The employment and GSVA figures relate to different years, making their comparison indicative rather than a precise measure of sectoral productivity. Moreover, the recent economic figures are based on quick and advance estimates and may be revised. The absence of detailed rural-level data on wages, job regularity, informality and working conditions also limits the assessment of the quality of rural non-farm employment.

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