



Structural Transformation In The Indian Economy: A Long-Term Analysis Of Growth, Employment, And Sectoral Reallocation

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Abstract

Structural transformation is a central feature of long-term economic development, involving the reallocation of resources from low-productivity sectors to high-productivity ones. This paper examines the long-term trajectory of structural transformation in the Indian economy with a focus on growth patterns, employment shifts, and sectoral reallocation across agriculture, industry, and services. Using secondary data drawn from national accounts, employment surveys, and policy documents, the study analyses changes in sectoral contribution to GDP, workforce distribution, and productivity differentials over time. The findings reveal that while India has experienced sustained economic growth and a significant rise in the services sector, the pace of employment absorption in industry has remained modest, leading to a phenomenon of “jobless growth” and a persistent dependence on agriculture for livelihoods. The paper also highlights the role of policy interventions, technological change, urbanization, and globalization in shaping India’s uneven structural transformation. The study argues that the disjunction between output growth and employment generation poses serious challenges for inclusive and sustainable development. It concludes by emphasizing the need for labour-intensive industrialization, skill development, and balanced sectoral growth to ensure that structural transformation translates into broad-based employment and social equity.

Keywords- Structural transformation; Indian economy; Economic growth; Employment shift; Sectoral reallocation; Agriculture; Industry; Services.

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Introduction

Structural transformation refers to the long-term reallocation of economic activity across the broad sectors of an economy—traditionally from agriculture to industry and subsequently to services. This process is widely regarded as a fundamental characteristic of economic development, as it is closely associated with rising productivity, diversification of economic activities, urbanization, and improvements in living standards. Historically, advanced economies experienced a gradual decline in the share of agriculture in output and employment, accompanied by the expansion of industrial and service sectors. In developing economies, structural transformation plays a crucial role in determining the pace and sustainability of economic growth.

India's economic experience since independence presents a distinctive case of structural transformation. At the time of independence, agriculture dominated the Indian economy, contributing more than half of national income and employing the majority of the workforce. Over the decades, the share of agriculture in output has declined significantly, while the contributions of industry and services have increased. However, this transformation has not followed the conventional path of industrialisation-led growth observed in many developed economies. Instead, India has witnessed a rapid expansion of the service sector, often described as a "services-led" growth pattern, with comparatively modest growth in manufacturing. This unusual trajectory has important implications for employment generation, productivity growth, and income distribution.

Despite sustained economic growth in the post-reform period, India continues to face structural challenges. A large proportion of the workforce remains engaged in low-productivity agricultural activities, even as agriculture's share in GDP has steadily declined. This divergence between output and employment structures highlights the incomplete nature of structural transformation in the Indian economy. The industrial sector, particularly manufacturing, has not absorbed labour at a pace sufficient to facilitate a smooth transition of workers from agriculture to higher-productivity sectors. As a result, the services sector has emerged as the primary driver of growth, but its capacity to generate broad-based employment remains uneven.

The liberalisation reforms initiated in the early 1990s marked a significant turning point in India's economic structure. Policy measures aimed at deregulation, trade liberalisation, and increased private sector participation contributed to higher growth rates and accelerated sectoral shifts. Nevertheless, the benefits of these reforms have been uneven across sectors and regions. While modern services such as information technology, finance, and communications have expanded rapidly, traditional manufacturing and labour-intensive industries have grown more slowly. This has raised concerns regarding jobless growth, informalisation of employment, and widening disparities between output growth and employment creation.

Understanding the long-term patterns of growth, employment, and sectoral reallocation is therefore essential for assessing the nature and quality of India's structural transformation. A comprehensive examination of sectoral income shares, employment distribution, and productivity differentials provides valuable insights into whether economic growth has been accompanied by meaningful structural change. Such an analysis is particularly important in the context of India's demographic transition, where a growing working-age population necessitates the creation of productive and sustainable employment opportunities.

Against this backdrop, the present study undertakes a long-term analysis of structural transformation in the Indian economy by examining changes in sectoral composition, growth patterns, and employment reallocation over time. By focusing on the evolving roles of agriculture, industry, and services, the study seeks to highlight the extent, direction, and limitations of India's structural transformation. The analysis contributes to a better understanding of how economic growth has interacted with sectoral shifts and

labour dynamics, and it underscores the policy relevance of promoting balanced and inclusive structural change in the Indian economy.

Review of Literature

Bhalotra, S. R. (1998): "The Puzzle of Jobless Growth in Indian Manufacturing" One of the earliest studies to highlight that while industrial output was growing post-1980s reforms, employment in the organized manufacturing sector remained stagnant. This laid the foundation for the "Jobless Growth" discourse in India.

Ahluwalia, M. S. (2002): "Economic Reforms in India since 1991: Has Gradualism Worked?" Ahluwalia analyzed the first decade of reforms, noting a significant shift in GDP composition. He argued that structural transformation was occurring, but the decline in agriculture's share of GDP was much faster than the decline in its share of the workforce.

Kochhar et al. (2006): "India's Patterns of Development: What Happened, What's Different?" This seminal paper identified India's "idiosyncratic" path. Unlike East Asian tigers that moved from Agriculture to Manufacturing, India skipped the manufacturing intensive stage and moved directly into skill-intensive Services.

Bosworth, B., & Collins, S. M. (2008): "Accounting for Growth: Comparing China and India" The authors compared the two giants and found that while China's structural transformation was driven by industrial productivity, India's growth was powered by the Service sector, specifically through Total Factor Productivity (TFP) gains.

Eichengreen, B., & Gupta, P. (2011): "The Service Sector as India's Road to Economic Development" This study broke down the service sector into two waves. They argued that India successfully entered the "second wave" (modern services like IT and Finance), which allowed for high growth despite a lagging manufacturing base.

McMillan, M. S., & Rodrik, D. (2011): "Globalization, Structural Change, and Productivity Growth" Using a global dataset including India, they argued that structural change in India has been "growth-enhancing" because labor moved from low-productivity agriculture to high-productivity urban services, though they warned about the lack of low-skill manufacturing jobs.

Binswanger-Mkhize, H. P. (2013): "The Stunted Structural Transformation of Indian Economy" The author critiqued the slow pace of labor reallocation. He noted that while people are leaving farms, they are not entering "good" jobs in factories but are getting stuck in low-end construction and informal services.

Mehrotra, S., et al. (2014): "Explaining Falling Female Labour Force Participation in India" This research added a critical dimension to structural transformation—the gender gap. It discussed how sectoral reallocation (moving away from agriculture) led to a paradoxical drop in female labor participation because manufacturing wasn't ready to absorb them.

Nayyar, D. (2019): "Resurgent Asia: Diversity in Development" Nayyar provided a long-term retrospective, arguing that India's failure to build a robust manufacturing base (Premature Deindustrialization) might limit its ability to provide mass employment in the long run.

Himanshu, L. (2020): "Structural Change and the Rural Economy" This study focused on "Non-farm Rural Employment." It highlighted that structural transformation is happening within villages, where the rural economy is diversifying into transport, trade, and small-scale processing.

Dandime, S. (2022): "Sectoral Reallocation and Growth in India: A Shift-Share Analysis" A more recent quantitative analysis showing that the "within-sector" productivity growth in Services is still the primary

driver of India's GDP, but the "reallocation effect" (labor moving between sectors) has slowed down recently.

Objectives of the Study

1. To examine the long-term trends in structural transformation in the Indian economy by analysing changes in the sectoral composition of output across agriculture, industry, and services.
2. To analyse sectoral shifts in employment in order to assess the extent to which labour has moved from low-productivity agriculture to higher-productivity non-agricultural sectors.

Data Sources and Period of Study

The present study is purely descriptive in nature and is based on secondary data collected from reliable official sources. Data on sectoral composition of the Indian economy have been obtained from the National Accounts Statistics published by the Ministry of Statistics and Programme Implementation (MOSPI), Government of India. These publications provide information on the contribution of agriculture, industry, and services to Gross Domestic Product (GDP) over time.

To ensure continuity in long-term trends, sectoral value added as a percentage of GDP has also been sourced from the World Development Indicators (WDI) database of the World Bank. This dataset offers consistent time-series information on the percentage shares of agriculture, industry (including construction), and services in GDP, which is particularly useful for depicting long-run structural changes. Information on sectoral employment distribution has been drawn from various rounds of the National Sample Survey Organisation (NSSO) Employment–Unemployment Surveys and the Periodic Labour Force Survey (PLFS). Supplementary information has been obtained from the Economic Survey of India and the Reserve Bank of India's Handbook of Statistics on the Indian Economy to support the discussion of sectoral trends.

The study covers the period from 1960 to 2023, enabling a long-term depiction of structural transformation in the Indian economy. For ease of presentation and clarity, selected benchmark years have been used to highlight major changes in growth, employment, and sectoral reallocation over different phases of economic development.

India's Experience of Structural Transformation

India's experience of structural transformation reflects a gradual and uneven transition of the economy from agriculture to non-agricultural sectors over the long run. At the time of independence, the Indian economy was predominantly agrarian in nature. Agriculture accounted for more than half of national income and employed nearly three-fourths of the workforce. Industrial activity was limited, and the services sector was largely confined to traditional activities such as trade, transport, and public administration. The initial challenge of development, therefore, was to transform an agrarian economy into a diversified and productive economic structure.

During the early decades of planned economic development, particularly from the 1950s to the late 1960s, India pursued a strategy of state-led industrialisation. Emphasis was placed on the development of heavy industries, public sector enterprises, and basic infrastructure. While this strategy led to the expansion of industrial capacity and a gradual decline in agriculture's share of national income, the pace of structural transformation remained slow. Agriculture continued to dominate employment, and productivity differences between sectors remained large. The Green Revolution of the late 1960s and 1970s improved agricultural output and food security but did not significantly alter the sectoral distribution of employment.

By the 1980s, signs of structural change became more visible. The share of agriculture in GDP declined steadily, while industry and services began to expand. However, industrial growth was uneven and often

constrained by regulatory rigidities, low competitiveness, and limited integration with global markets. As a result, manufacturing did not emerge as a strong absorber of surplus labour from agriculture. Instead, the services sector began to grow at a faster pace, driven by trade, transport, communications, and government services. This period marked the early emergence of services as a key contributor to economic growth.

A major turning point in India's structural transformation occurred with the economic reforms initiated in the early 1990s. Liberalisation, privatisation, and globalisation policies led to higher growth rates and accelerated sectoral shifts. The share of agriculture in GDP declined more rapidly during the post-reform period, while services emerged as the dominant sector in terms of output contribution. Modern services such as information technology, finance, telecommunications, and business services experienced rapid expansion, particularly after the 2000s. This services-led growth pattern distinguishes India's experience from the conventional development path followed by many industrialised economies.

Despite the impressive growth of services, India's structural transformation has been characterised by significant imbalances. One of the most notable features is the divergence between output and employment structures. While agriculture's share in GDP has fallen sharply over time, a large proportion of the workforce continues to be engaged in agriculture. This indicates slow labour reallocation and persistent dependence on low-productivity activities. The industrial sector, specially manufacturing, has not expanded sufficiently to absorb labour released from agriculture, resulting in the informalisation of employment and the growth of low-productivity services.

Another important aspect of India's structural transformation is the limited role of manufacturing in driving employment growth. Although industry's share in GDP has increased modestly over time, its employment share has remained relatively low. This has led to concerns about "jobless growth" and the inability of the industrial sector to support inclusive development. In contrast, the services sector has become the primary driver of economic growth, but its capacity to generate large-scale, productive employment remains uneven across sub-sectors.

In recent years, structural transformation in India has been influenced by factors such as urbanisation, technological change, global integration, and policy initiatives aimed at boosting manufacturing and services. While agriculture continues to decline in terms of output share, its role in employment remains significant, highlighting the incomplete nature of transformation. The persistence of regional and sectoral disparities further underscores the unevenness of India's experience.

Overall, India's experience of structural transformation can be described as gradual, services-driven, and marked by significant structural imbalances. The economy has successfully diversified away from agriculture in terms of output, but the slow movement of labour into higher-productivity sectors remains a major challenge. Understanding these long-term trends is essential for designing policies that promote balanced growth, productive employment, and sustainable economic development.

Percentage Shares of Agriculture, Industry, and Services in India's GDP (1960–2023)

Year	Agriculture (% of GDP)	Industry (% of GDP)	Services (% of GDP)
1960	41.74133512	20.83434345	38.78246175
1970	40.28961346	21.72930929	35.04687086
1980	34.40886781	25.3362459	33.80725874
1990	27.58488814	27.4536955	37.04478519
2000	21.61106205	27.32582838	42.73292664
2010	17.02650901	30.72507823	45.03374956
2015	16.17450811	27.34739148	47.78374812
2023	15.9660077	25.00870535	49.79753547

Source: Reserve Bank of India, *Handbook of Statistics on the Indian Economy*

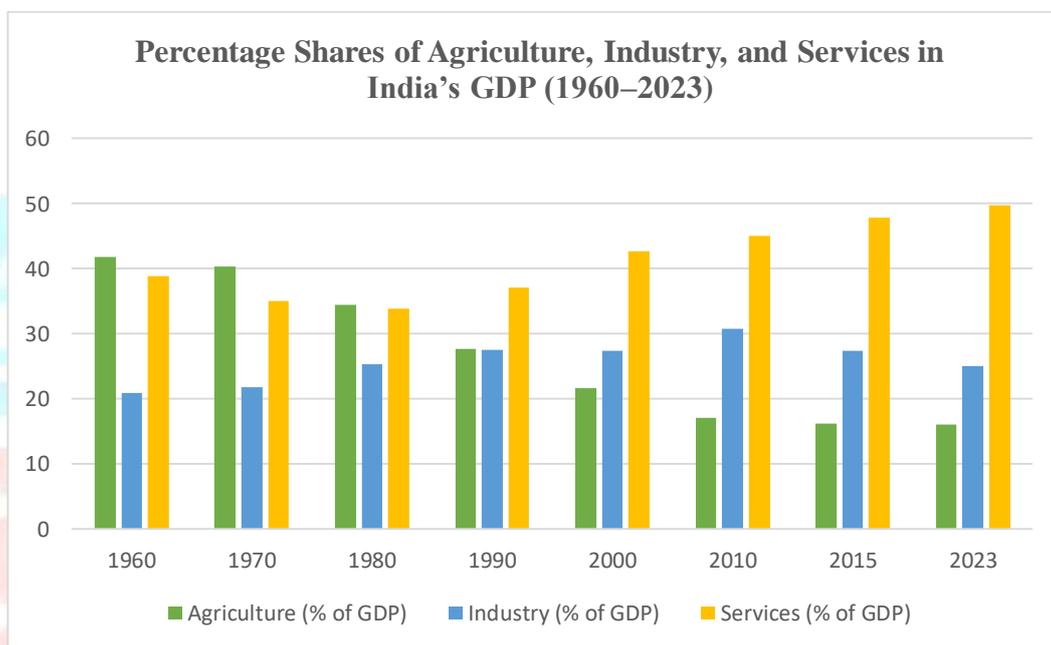


Figure 1 depicts the long-term trends in the sectoral composition of India's Gross Domestic Product from 1960 to 2023. The figure clearly illustrates the process of structural transformation in the Indian economy through changes in the relative contributions of agriculture, industry, and services to GDP over time.

In 1960, agriculture was the dominant sector, contributing about **41.7 per cent** of GDP, reflecting the agrarian nature of the Indian economy during the early post-independence period. Industry accounted for approximately **20.8 per cent**, while services contributed **38.8 per cent** of GDP. Over the following decades, agriculture's share declined gradually but steadily. By 1980, its contribution had fallen to around **34.4 per cent**, and this downward trend continued more sharply after 1990. By 2000, agriculture's share had reduced to **21.6 per cent**, and by 2023 it declined further to about **15.9 per cent** of GDP. This persistent decline indicates a long-term movement away from agriculture in terms of output.

The industrial sector shows a moderate and uneven expansion over the period. Industry's share increased from **20.8 per cent in 1960** to around **25–27 per cent** during the 1980s and 1990s. It peaked at about **30.7 per cent in 2010**, before declining slightly to **25.0 per cent in 2023**. Although industry expanded relative to agriculture, its growth was not sufficiently strong or sustained to emerge as the dominant sector in the economy.

In contrast, the services sector exhibits a strong and continuous upward trend throughout the period. From **38.8 per cent in 1960**, the share of services rose steadily to **42.7 per cent in 2000**, **45.0 per cent in 2010**, and further to nearly **49.8 per cent in 2023**. Services emerged as the largest contributor to GDP from the 1980s onwards, reflecting the growing importance of trade, transport, finance, communication, and modern service activities in India’s growth process.

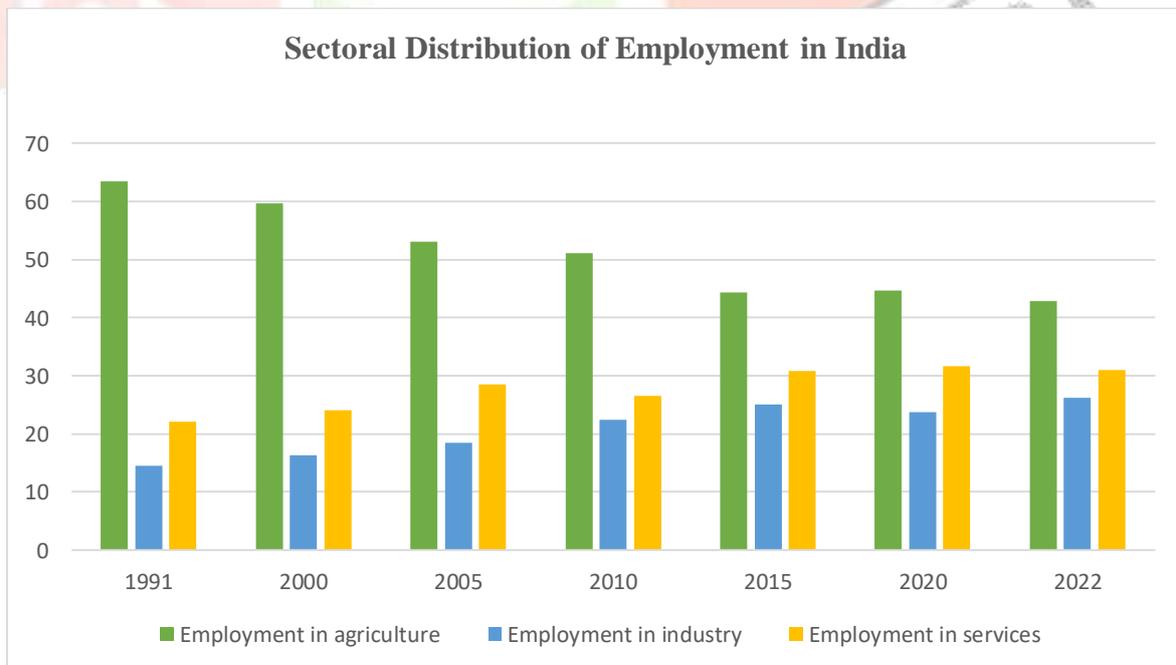
Overall, the table highlights that India’s structural transformation has been characterised by a sharp decline in the share of agriculture, a relatively modest expansion of industry, and a strong rise in the services sector. This pattern indicates a **service-led transformation**, rather than a manufacturing-driven one, distinguishing India’s development experience from the traditional path observed in many industrialised economies.

Sectoral Distribution of Employment in India

Fig 2 presents the distribution of employment across agriculture, industry, and services in India from 1991 to 2022. The data highlight important features of India’s labour market and provide valuable insights into the employment dimension of structural transformation.

Year	Employment in agriculture	Employment in industry	Employment in services
1991	63.40898265	14.56703975	22.0239776
2000	59.64472856	16.31991931	24.0353524
2005	53.06525538	18.44716485	28.48758003
2010	51.05607415	22.37788856	26.56604288
2015	44.27287618	24.98051452	30.74661671
2020	44.67549435	23.70364904	31.62085661
2022	42.86093361	26.12032405	31.01873854

Source: Reserve Bank of India, Handbook of Statistics on the Indian Economy



In 1991, agriculture was the dominant source of employment, engaging about 63.4 per cent of the workforce. Industry accounted for only 14.6 per cent, while services employed around 22.0 per cent of total workers. This employment structure reflected the agrarian nature of the Indian economy at the beginning of the economic reform period, with a large concentration of labour in low-productivity agricultural activities.

Over time, a gradual decline in agricultural employment is observed. By 2000, the share of workers in agriculture had fallen to 59.6 per cent, and this downward trend continued through the subsequent years. In 2005 and 2010, agricultural employment declined further to 53.1 per cent and 51.1 per cent, respectively. By 2022, agriculture employed approximately 42.9 per cent of the workforce. Although this represents a significant reduction over three decades, agriculture continues to absorb a substantial proportion of labour in the Indian economy.

The industrial sector shows a slow but steady increase in its employment share. From 14.6 per cent in 1991, industry's share rose to 16.3 per cent in 2000 and further to 18.4 per cent in 2005. The upward trend continued in the post-reform period, with industrial employment reaching 22.4 per cent in 2010 and 26.1 per cent in 2022. Despite this improvement, the industrial sector's capacity to absorb labour remains limited relative to its role in output generation.

Employment in the services sector expanded more visibly over the period. Services employed about 22.0 per cent of the workforce in 1991, which increased steadily to 24.0 per cent in 2000 and 28.5 per cent in 2005. By 2015, the share of services in total employment had risen to 30.7 per cent, and it further increased to about 31.0 per cent in 2022. This growth reflects the increasing role of services in employment creation, particularly in trade, transport, public services, and other service activities.

Overall, the employment data reveal that India's structural transformation has been slow and incomplete from an employment perspective. While the share of agriculture in employment has declined and employment in industry and services has increased, the pace of labour reallocation has lagged behind the shift in output composition. A large proportion of the workforce continues to remain in agriculture despite its declining contribution to GDP, indicating persistent productivity differentials across sectors.

Output–Employment Mismatch in India

A comparison of sectoral output and employment patterns reveals a significant mismatch in India's structural transformation. While the share of agriculture in GDP has declined sharply over time, agriculture continues to employ a disproportionately large share of the workforce. This indicates that labour reallocation away from low-productivity agriculture has proceeded much more slowly than changes in output composition. In contrast, the services sector has emerged as the dominant contributor to GDP, yet its share in employment has increased at a relatively moderate pace, suggesting uneven employment generation across service sub-sectors. The industrial sector, particularly manufacturing, has expanded modestly in terms of output but has not absorbed labour at a scale sufficient to bridge the gap between declining agricultural employment and rising non-farm opportunities. This divergence between output shares and employment shares underscores the incomplete nature of structural transformation in India and highlights persistent productivity differentials across sectors, with important implications for inclusive growth and employment generation.

Implications of Structural Transformation for Economic Growth and Employment

The observed pattern of structural transformation in India has important implications for both economic growth and employment generation. The long-term shift in output from agriculture towards industry and, more prominently, services has contributed to higher overall economic growth. The expansion of non-agricultural sectors, particularly services, has supported increases in national income, productivity, and diversification of economic activities. This transition reflects India's movement away from a subsistence-oriented economy towards a more complex and diversified economic structure.

However, the nature of this transformation has raised concerns regarding the quality and inclusiveness of growth. While services have emerged as the leading contributor to GDP, their capacity to generate large-scale and productive employment has been uneven. A significant portion of service-sector employment remains concentrated in informal and low-productivity activities, limiting the potential for broad-based

income growth. As a result, the rapid rise in services output has not translated proportionately into employment opportunities.

The relatively modest expansion of the industrial sector has further implications for employment generation. Industry, particularly manufacturing, is traditionally regarded as a key driver of productive and stable employment during the development process. In India, however, the industrial sector has not grown sufficiently to absorb the labour released from agriculture. This has contributed to the persistence of surplus labour in agriculture and the expansion of informal employment in services, reinforcing the output–employment imbalance.

From a growth perspective, the slow movement of labour into higher-productivity sectors constrains overall productivity gains. A large workforce remains engaged in low-productivity agricultural activities despite agriculture's declining contribution to GDP. This limits the economy's ability to fully realise the benefits of structural transformation and poses challenges for sustaining high growth rates over the long run.

Overall, India's experience suggests that structural transformation has supported economic growth but has not adequately addressed employment challenges. The divergence between output growth and employment creation highlights the need for a more balanced transformation process, where sectoral shifts in output are accompanied by meaningful labour reallocation. Addressing this imbalance is crucial for achieving inclusive growth, improving productivity, and ensuring that the benefits of economic transformation are widely shared.

Conclusion

The analysis presented in this paper highlights the long-term process of structural transformation in the Indian economy and the major shifts in output and employment across agriculture, industry, and services. The sectoral GDP data clearly show that India has moved from an agriculture-dominated economy in the early decades after independence to a service-led structure by 2023. Agriculture's share in national income has declined steadily, industry has expanded moderately, and services have emerged as the largest contributor to output. These trends reflect the broad direction of economic diversification and the emergence of new growth drivers, especially in the post-reform period.

However, the employment patterns reveal that the pace of labour reallocation has been much slower than the shift in output. A substantial share of the workforce continues to remain in agriculture despite its declining contribution to GDP, indicating persistent underemployment and wide productivity gaps. The industrial sector has not grown sufficiently to absorb the labour released from agriculture, while employment in services has increased mainly through informal and low-productivity activities. This mismatch between output transformation and employment transformation points to the incomplete and unbalanced nature of India's structural change.

Overall, India's experience demonstrates that structural transformation has supported economic growth but has not been accompanied by proportionate expansion in productive employment opportunities. To make the process more inclusive and employment-friendly, policy efforts need to focus on strengthening manufacturing capacity, promoting labour-intensive industries, enhancing skill development, and improving the quality of employment in both industry and services. Equally important are measures to raise agricultural productivity, reduce disguised unemployment, and create more viable non-farm opportunities in rural areas. Improving infrastructure, supporting small and medium enterprises, and enabling smoother labour mobility can further help align output and employment structures. These policy directions are essential for ensuring that structural transformation contributes not only to higher growth but also to broader and more equitable development outcomes.

References-

1. Ahluwalia, M. S. (2002). Economic reforms in India since 1991: Has gradualism worked? *Journal of Economic Perspectives*, 16(3), 67–88. <https://doi.org/10.1257/089533002760278721>
2. Bhalotra, S. R. (1998). The puzzle of jobless growth in Indian manufacturing. *Oxford Bulletin of Economics and Statistics*, 60(1), 5–32. <https://doi.org/10.1111/1468-0084.00086>
3. Binswanger-Mkhize, H. P. (2013). *The stunted structural transformation of the Indian economy*. World Bank.
4. Bosworth, B., & Collins, S. M. (2008). Accounting for growth: Comparing China and India. *Journal of Economic Perspectives*, 22(1), 45–66. <https://doi.org/10.1257/jep.22.1.45>
5. Dandime, S. (2022). Sectoral reallocation and growth in India: A shift-share analysis. *Indian Journal of Labour Economics*, 65(3), 463–486. <https://doi.org/10.1007/s41027-022-00374-6>
6. Eichengreen, B., & Gupta, P. (2011). The service sector as India's road to economic growth. *National Institute of Public Finance and Policy Working Paper*.
7. Himanshu, L. (2020). Structural change and the rural economy in India. *Indian Journal of Human Development*, 14(2), 185–203. <https://doi.org/10.1177/0973703020944485>
8. Kochhar, K., Kumar, U., Rajan, R., Subramanian, A., & Tokatlidis, I. (2006). India's pattern of development: What happened, what follows? *Journal of Monetary Economics*, 53(5), 981–1019. <https://doi.org/10.1016/j.jmoneco.2006.05.007>
9. McMillan, M. S., & Rodrik, D. (2011). Globalization, structural change, and productivity growth. *NBER Working Paper No. 17143*. National Bureau of Economic Research. <https://doi.org/10.3386/w17143>
10. Mehrotra, S., Parida, J. K., Sinha, S., & Gandhi, A. (2014). Explaining falling female labour force participation in India: A structural change perspective. *Economic & Political Weekly*, 49(26–27), 95–108.
11. Nayyar, D. (2019). *Resurgent Asia: Diversity in development*. Oxford University Press.