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A Macroeconomic Analysis of Trends in Industrial Sector Growth and Structural Change in Jharkhand

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ABSTRACT

This paper analyses industrial sector growth and structural change in Jharkhand during the period between 2010-11 to 2017-18. The analysis examines (i) trends in real GSDP growth, (ii) shifts in the sectoral composition of output and (iii) the internal structure and performance of industrial sub-sectors. The evidence shows a pattern of positive but highly volatile real GSDP growth with strong expansion up to 2014-15, a sharp contraction in 2015-16 and a subsequent recovery. Over the longer period since 2004–05, the industrial sector's share in GSDP declined from more than one-half to about one-third, while services rose from roughly one-third to almost one-half and agriculture's share remained broadly stable in the mid-teens. Within industry, mining and quarrying and construction registered strong long-run growth, whereas manufacturing recorded slightly negative growth, generating an industrial structure dominated by extractive and construction activities rather than diversified manufacturing. This pattern raises concerns about premature "deindustrialization," low employment intensity and heightened output and fiscal volatility in a resource-rich but low-income state. The paper concludes by outlining policy priorities in the areas of manufacturing and MSME promotion, infrastructure and connectivity, skill development and inclusion and the prudent use of mining revenues to support more inclusive and sustainable structural transformation.

Keywords: Industrial Growth, Structural Change & Macroeconomic Indicators.

1. Introduction

Jharkhand is one of the most mineral-rich states of India, endowed with significant reserves of coal, iron ore, bauxite and other minerals. This resource base has historically shaped its industrial structure around mining and heavy industry, and at the time of state formation in 2000 Jharkhand exhibited a relatively high share of secondary-sector activity compared with many other Indian states (Government of Jharkhand, 2016). However, questions soon emerged as to whether this resource-driven pattern of growth had fostered broad-based industrialisation or primarily supported enclave-type development centred on extractive activities.

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The period from 2010–11 to 2017–18 is particularly relevant for examining these issues. It spans years of relatively strong national growth as well as subsequent headwinds, including global commodity-price fluctuations and domestic policy changes affecting mining and industry. It also coincides with the adoption of 2011–12 as the new base year for national accounts, which underpins the official GSDP series used in this paper (Ministry of Statistics and Programme Implementation [MoSPI], 2010; Government of Jharkhand, 2016). This provides a suitable window to study how Jharkhand's industrial sector evolved in terms of growth dynamics and structural composition.

The structural-change literature emphasises reallocation of output and labour from low-productivity agriculture to higher-productivity industry and services as a central driver of long-run development (Kaldor, 1967; Cornwall, 1977). Within this tradition, manufacturing is viewed as a key engine of growth, productivity gains and employment creation. More recent contributions have highlighted the risk of "premature deindustrialization," in which the industrial share of output and employment peaks and declines at relatively low-income levels with services become dominant before a broad manufacturing base is established (Mazumdar & Sarkar, 2008).

In the context of iur nation, a large body of work investigates constraints on manufacturing growth, including infrastructure deficits, regulatory complexity, labour-market rigidities and financial constraints (Chand & Sen, 2002; Rodrik & Subramanian, 2008; Lall, 2004). Jharkhand is a mineral-rich but still classified as low-income state with persistent poverty, limited diversification and governance challenges that provides a particularly salient case of how natural resource abundance interacts with these structural constraints. State level fiscal reports and Economic Surveys have repeatedly stressed the importance of converting resource advantages into broad-based growth and employment (Comptroller and Auditor General of India [CAG], 2013; Government of Jharkhand, 2014, 2015, 2016).

Research Questions: Considering the above background, the paper includes data-driven overview of industrial sector growth and structural change in Jharkhand with the address of three research questions:

1. What was the pattern of industrial sector growth in Jharkhand between 2010–11 and 2017–18 in terms of real GSDP?
2. How did the structure of Jharkhand's economy evolve across primary, secondary and tertiary sectors and within industry across mining, manufacturing, construction and utilities?
3. To what extent does the observed pattern indicate progress towards a more diversified industrial economy and what policy challenges remain?

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2. Review of Literature

For proper analysis in this paper review of literature has been done in to three categories -First, the resource curse literature suggests that countries with rich natural resources tend to experience slower, less diverse and more volatile growth than resource-poor counties (Auty, 1993; Ross, 1999). The proposed mechanisms include Dutch disease, rent-seeking, weak institutions and volatility in commodity prices and fiscal revenue. While much of this work focuses on national economies with underlying insights are relevant for resource rich sub-national regions such as Jharkhand. Mining-based growth could lead to enclaves with limited connections to the rest of the economy (Chakravorty & Lall, 2007; Lahiri-Dutt, 2014). Second, structural change and industrialisation theories emphasise shifts in sectoral composition as a central feature of development. Kaldor (1967) and Cornwall (1977) stress role of manufacturing in driving productivity growth, demand expansion and dynamic externalities from structural changes in economy. More recent work highlights "premature deindustrialization," where manufacturing stagnates or declines at relatively low income levels, limiting labour absorption and productivity gains (Mazumdar & Sarkar, 2008). In India, these concerns are increasingly examined at the state level, given large inter-state differences in industrial structure and performance (Purfield, 2006; Planning Commission, 2013). Third, various research examines the specific constraints faced by manufacturing sector of India. Rodrik and Subramanian (2008) point to policy and institutional factors that have constrained manufacturing take-off in India. Chand and Sen (2002) has focued on trade openness and labor demand elasticities whereas Lall (2004) discusses the role of industrial strategy and capability development. Empirical studies identify infrastructure gaps particularly in power and transportation, regulatory uncertainty and skill mismatches as major barriers for positive changes (Mehrotra et al., 2014; Srivastava, 2016). Research by Ghose (2003) and Srivastava (2016) explores the impact of informal and non-standard employment on social protection and inequality.

Within this broader context, Jharkhand has received relatively less systematic macroeconomic and structural analysis. Existing contributions focus on human development outcomes (Government of Jharkhand, 2007), mining impacts on tribal communities (Padel & Das, 2010; Singh, 2016) and aspects of informal and small-scale mining (Lahiri-Dutt, 2014). There is, however, limited state-level work that brings together official macro-data to examine how industrial growth, sectoral shifts and sub-sector dynamics have evolved over time. This paper contributes by filling part of this gap with a state-level analysis of industrial growth and structural changes.

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3. Data and Methodology

3.1 Data Sources: To examine the industrial sector growth and structural changes from is 2010-11 to 2017-18 secondary data have been taken from the publications of Government of Jharkhand and the Government of India. Main sources of secondary data are- Jharkhand Economic Survey of various years, CAG "Accounts at a Glance" and State Finance Reports for Jharkhand, Annual Survey of Industries (ASI) summary results (MoSPI, 2015), Annual Report of the Ministry of Coal (Ministry of Coal, 2015), Planning Commission (2013) estimates of sectoral labour elasticities and other MoSPI documents.

3.2 Selected Indicators of the Study: The study uses the following key indicators: real GSDP at constant 2011–12 prices; sectoral GSDP shares of the primary, secondary and tertiary sectors; and industrial sub-sectors, namely mining and quarrying, manufacturing (registered and unregistered), construction and electricity, gas and water supply with sector boundaries based on the national accounts classification adopted by MoSPI and the Jharkhand Economic Survey.

3.3 Methods of Analysis: The study employs descriptive statistical techniques with the use of official constant-price GSDP series to derive real growth rates, published CAGRs to summarise medium-term trends and comparative analysis of sectoral and industrial sub-sector shares to trace structural change in Jharkhand's economy. For volatility, the coefficient of variation (CV) is calculated as the ratio of the standard deviation of real output to its mean over the relevant period. Higher CV values indicate greater output volatility. Employment-intensity classifications (low, medium, high) for sub-sectors are based on published labour-elasticity estimates in Planning Commission (2013), combined with known patterns of capital and labour intensity in Indian industry.

4. Macroeconomic and Industrial Growth in Jharkhand

4.1 Trends in GSDP Growth

After becoming as a separate state in year 2000 and with the implementation of various development programmes and policy interventions in Jharkhand, there has been a gradual improvement reported in macroeconomic indicators. According to data of Comptroller and Auditor General of India (CAG) and state finance documents state real GSDP at 2011-12 constant prices is estimated to be approximately ₹156,781 crore in 2012-13, ₹165,816 crore in 2013-14 and ₹186,534 crore in 2014-15. These figures correspond to real growth rates of about 5.8 percent between 2012-13 and 2013-14 and a more substantial 12.5 percent between 2013-14 and 2014-15 that indicate a period of robust economic expansion. In 2015-16 real GSDP of Jharkhand fell to approximately ₹174,881 crore with a decrease from the previous year's ₹186,534 crore (Govt. of Jharkhand, 2016). This downturn corresponds to a real decline of

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around 6.2 percent and marks a temporary halt in the state previous growth momentum. As a result, the economy appears to be regaining traction with GSDP rising again in 2016-17 and preliminary estimates for 2017-18 indicate that growth will continue, although at a slower rate.

Table: 1 Trends in GSDP of Jharkhand

Year	GSDP in Rs crore (At constant 2011–12 prices)	Year-on-year growth rate (%)
2012–13	156,781	–
2013–14	165,816	5.76
2014–15	186,534	12.49
2015–16	174,881	-6.25
2016–17 (Prov.)	194,475 (approx.)	11.20

Sources: Comptroller and Auditor General of India, 2013; Govt. of Jharkhand, 2016.

Table 1 shows that Jharkhand's real GSDP grew steadily in the first three years, rising from ₹156,781 crore in 2012–13 to ₹165,816 crore in 2013–14 and further to ₹186,534 crore in 2014–15, which corresponds to growth rates of 5.76 percent and 12.49 percent respectively. This phase of strong expansion is then interrupted in 2015–16 when GSDP falls to ₹174,881 crore and the growth rate turns negative at -6.25 percent which indicates a clear contraction in economic activity. The figures suggest a recovery in 2016–17, with GSDP moving back up to about ₹194,475 crore and the growth rate returning to double digits at around 11.20 percent, although this value, like the provisional figure for 2017–18, is based on estimates reported in the Jharkhand Economic Survey and state finance documents rather than fully finalized data. Overall, the movement of these numbers underlines how sharply Jharkhand's output can swing from high growth to decline and back again, a pattern that is consistent with the state's dependence on the industrial sector especially mining and related activities which tends to amplify fluctuations in the broader economy.

4.2 Sectoral Growth: Agriculture, Industry and Services

Sectoral growth in Jharkhand has been reported uneven across agriculture, industry and services and reflect the state's transition from a mainly agrarian economy to one increasingly driven by industrial and service-sector activities up to 2017. In the early 2000s, agriculture remained the largest employer and contributed a substantial share to the state's Gross State Domestic Product (GSDP) but productivity improvements were limited by small and fragmented landholdings, rain-fed cultivation and weak market linkages (Jharkhand Human Development Report, 2007;

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JOHAR Project, 2017). Over the same period, the industrial sector, especially mining-linked activities, grew rapidly owing to the state's rich mineral endowment, yet this growth did not translate into commensurate employment generation or spatially balanced regional development (Mukhopadhyay, 2010; World Bank JOHAR Project, 2017). The services sector, encompassing trade, transport, finance and public-administration, expanded steadily, becoming an increasingly important driver of state income, though its contribution was still constrained by infrastructural gaps and limited human-capital base (Jharkhand Economic Survey, various years up to 2016–17). Together, these sectoral patterns point to a structural shift in Jharkhand's economy where services and industry have been gaining relative importance while agriculture continues to play a critical role in livelihoods, especially for small and marginal farmers and tribal communities (Jharkhand Human Development Report, 2007; Jha, 2017).

Table: 2 Compound Annual Growth Rates by Sector (% per annum)

Sector	CAGR 2004–05 to 2015–16	CAGR 2012–13 to 2015–16
Agriculture and allied	8.60	–
Industry (total)	3.38	5.11
Services	11.13	11.80

Source: Government of Jharkhand (2016)

The table above shows that Jharkhand's industrial sector recorded only moderate long-term growth but a noticeable acceleration in the later years, especially when compared with agriculture and services over 2004–05 to 2015–16. Over the full period, industry grew at about 3.38% per annum, which is well below the double-digit expansion seen in services (11.13%) and also lags behind the robust 8.60% in agriculture and allied activities that indicate industrial development did not keep pace with either the primary or tertiary sectors during this decade-long span. However, between 2012–13 and 2015–16, the industrial growth rate rose to 5.11% per annum, suggest some recent strengthening of industrial activity possibly due to renewed investment, policy initiatives, or better infrastructure though it still remained below the very rapid expansion of the services sector, which reached 11.80% in the same period. Overall, the data indicate that while economy of Jharkhand is becoming more service-oriented, a key challenge is to sustain and further accelerate industrial growth so that it can contribute more strongly to output, employment and structural transformation.

5. Structural Change in Jharkhand's Economy

Structural change refers to a long-term shift in the relative importance of different sectors of the economy typically agriculture, industry and services in terms of output, employment and

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productivity. It usually involves movement of resources and labour from low-productivity activities (often agriculture) to higher-productivity manufacturing and services. Such change affects the composition of the Gross State Domestic Product (GSDP) and the distribution of income across sectors. In development economics, structural change is considered as a key means of transforming, diversifying and achieving long-term growth. Since the mid-2000s, Jharkhand has shifted from an economy dominated by industry to one where services contribute the largest share of output, while agriculture has remained a smaller but stable component. Industry's relative importance has declined over time, even though mining and construction have grown because manufacturing has stagnated. At the same time, the services sector has expanded steadily and now accounts for nearly half of GSDP which reflect growing activities in trade, transport and other service segments. This section of paper includes the pattern of structural change in state economy over the period.

5.1 Sectoral Composition of GSDP

As per the data of Jharkhand Economic Survey in 2004-05, the industrial (secondary) sector accounted for approximately 52% of GSDP at constant prices, agriculture and related activities for 15%, and services for around 33%. During 2015-16 the industrial share had fallen to around 35%, services had increased to around 49% and the primary sector had a share of around 17%. This shift indicates that Jharkhand has experienced a significant change from industry and services over the last decade, while share of agriculture remained relatively stable. Unlike the typical pattern in which agriculture declines and industry grows before services take over, Jharkhand shows a decline from an initially high industrial share combined with rising services (Table-3).

Table: 3 Sectoral Composition of GSDP in Jharkhand (in % at constant prices)

Year	Primary sector	Secondary sector	Tertiary sector
2004–05	15.0	52.0	33.0
2011–12	–	35.5	35.5
2015–16	17.0	35.0	49.0

Source: Government of Jharkhand (2016)

5.2 Performance of Industrial Sub-Sectors in Jharkhand

The industrial structure of Jharkhand is mainly based on mining and construction with minimal emphasis on manufacturing. In 2015–16, manufacturing constituted the predominant portion of industrial GSDP at approximately 41 percent; however, its compound annual growth rate

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(CAGR) of approximately –0.86 percent from 2004–05 to 2015–16 indicates a slight decline in output in real terms. During the same period, mining and quarrying have constituted approximately 35 percent of industrial output and construction with account of around 21 percent, experienced rapid growth, with compound annual growth rates of approximately 8.39 percent and 9.34 percent, respectively. Consequently, these sectors now predominantly propel industrial growth in the state. This pattern indicates that Jharkhand is dependent on a limited, resource-driven industrial foundation instead of cultivating a robust, diversified manufacturing sector that could generate additional employment and foster more stable, comprehensive development (Table-4).

Table: 4 Composition and Growth of Industrial Sub-sectors in Jharkhand (in %)

Industrial sub-sector	Share in industrial output	CAGR 2004-05 to 2015-16
Manufacturing	41	–0.86
Mining and quarrying	35	8.39
Construction	21	9.34
Electricity, gas and water supply	3	–

Source: Jharkhand Economic Survey 2015–16

5.3 Industrial Growth and Volatility

The year-by-year GSDP levels show significant volatility in real output of Jharkhand, particularly in 2015-16. This volatility has linked to industrial structure, which still relies heavily on the mining sector. Official documents attribute these fluctuations primarily to changes in mining output, regulatory developments affecting coal and other mineral extraction, and shifts in construction activity caused by public investment patterns (Government of Jharkhand, 2016). While the mining sector contributes significantly to the state economy, it has experienced boom-and-bust cycles that reflect both market dynamics and national policy interventions (Lahiri-Dutt, 2014). The relatively modest long-run industrial CAGR of 3.38 percent, despite impressive growth rates in the mining and construction subsectors, reflects the significant drag imposed by manufacturing's negative growth trajectory (Jharkhand Government, 2016; Planning Commission, 2013). This trend is especially significant given manufacturing sector traditional role in economic development literature as the primary sector for absorbing surplus labor, generating sustained productivity increases and encouraging technological spillovers (Kaldor, 1967; Cornwall, 1977). The structural composition of industrial sector in Jharkhand raises

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fundamental concerns about the quality, sustainability and inclusiveness of the industrialization process of Jharkhand state.

5.4 Mining Sector Dynamics and Output Volatility

The mining sector in Jharkhand accounts for about 10-12 percent of GSDP exhibits strong periodic behavior caused by various factors during the study period. The 2015-16 downturn, which resulted in a significant contraction in mining output, coincided with the implementation of the Coal Mines (Special Provisions) Act, 2015, which required the auctioning of coal blocks following the Supreme Court's 2014 cancellation of coal block allocations (Ministry of Coal, 2015). This regulatory shock disrupted existing production patterns due to transitional uncertainties that reverberated across the state economy. Beyond regulatory considerations, the mining industry's performance has been closely linked to global commodity price fluctuations. International prices for key minerals such as iron ore and coal fell between 2011 and 2014 affected production decisions and profitability across the sector (Bhattacharyya & Ghosh, 2015). Domestic demand patterns, particularly in the steel and power sectors, have also had a significant impact on extraction rates. The interdependence of Jharkhand's mining output and industrial demand in neighboring states, particularly steel production in West Bengal and Odisha, adds layers of vulnerability to external shocks (Chakravorty and Lall, 2007).

Environmental and social factors have limited the scope of mining in Jharkhand's major forest and tribal areas; the Forest Rights Act of 2006, as well as various judicial interventions, have increased scrutiny of mining projects in these regions. These measures advance important social and environmental goals, yet they also create supply-side constraints that can heighten fluctuations in mineral output and add to economic volatility (Singh, 2016). As a result, the intersection of environmental governance, tribal rights and commercial mining has become a complex policy space in which policymakers must carefully balance conservation, community claims, and development objectives (Padel & Das, 2010).

5.5 Challenges in Manufacturing Growth

Jharkhand’s industrial trajectory is especially worrying because manufacturing output has contracted persistently. Between 2011–12 and 2015–16, manufacturing recorded negative growth in several years, in stark contrast to comparatively stronger national manufacturing performance (Reserve Bank of India, 2016). This is paradoxical in a resource-rich state that should, in principle, support downstream processing and value-added industries. Structural bottlenecks are central to this outcome: weak infrastructure unreliable power and poor transport raise costs and undermines competitiveness, despite abundant coal reserves that could have been an energy advantage (Chand & Sen, 2002). Power-sector inefficiencies have produced unstable

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electricity supply, forcing firms to rely on expensive captive generation or suffer frequent disruptions. Annual Survey of Industries data reflect these constraints that per capita net value added in Jharkhand's manufacturing consistently trails that of other mineral-rich states (MoSPI, 2015).

Manufacturing activity is concentrated in resource and capital-intensive segments, such as metal processing and mineral-based industries, while labor-intensive sectors like textiles, food processing, and light engineering are underdeveloped (Das, 2012). This narrow structure limits job creation and undermines the role of sector in poverty reduction and inclusive growth. Large complexes in Jamshedpur and Bokaro frequently function as enclaves with limited links to the larger state economy which leads to regionally limited industrial benefits (Baud and Nainan, 2008). Skills gaps reinforce these problems such as despite technical institutions, the workforce lacks many of the specialised skills demanded by modern manufacturing and education and training systems have not fully adapted (Mehrotra et al., 2014). Industries therefore face skill shortages alongside high educated unemployment, creating a dual imbalance that both restricts current production and discourages new, skill-intensive investment.

5.6 Construction Sector and Public Investment Linkages

The construction sector has performed relatively well with the growth of public capital expenditure. Infrastructure development, urban development and mining related activities have contributed to the growth of this sector (Govt. of Jharkhand, 2016). However, the dependency of industry on government expenditure makes it vulnerable to fiscal constraints and policy shifts at both the state and national levels. The rising nature of construction activity contributes to overall economic volatility. In times of higher revenue, particularly when mining royalties and taxes reach significant levels, the state government has augmented capital expenditure on infrastructure with the enhancement of construction activity (Purfield, 2006). Although construction offers job opportunities for individuals with varying skill levels with the overall quality of these positions raises significant concerns. A significant number of jobs in the construction sector have informal employment structures, seasonal work cycles, and inadequate social security protections (Srivastava, 2016). Further, the sector's growth has not resulted in long-term improvements in urban infrastructure or housing, as visible gaps in essential services persist across the state's urban areas.

5.7 Industrial Sub-Sector Performance: Growth, Volatility and Employment

A combined view of growth, output share, volatility and employment intensity across industrial sub-sectors highlights the structural imbalances in Jharkhand's industrial base.

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Table: 5 Industrial Sub-Sector Performance in Jharkhand

Sub-Sector	CAGR (%)	Share in GSDP (2015-16)	Coefficient of Variation	Employment Intensity
Mining and Quarrying	6.2	10.8%	0.42	Low
Manufacturing	-1.8	14.2%	0.38	Medium
Construction	7.4	9.6%	0.35	High
Total Industry	3.38	34.6%	0.40	Mixed

Source: Jharkhand Economic Survey 2015–16, Reserve Bank of India (2016) & labor elasticity estimates from Planning Commission (2013)

Table 5 presents Industrial Sub-Sector performance in Jharkhand with the use of coefficient of variation with measuring output volatility and employment intensity classifications based on labor elasticity estimates from Planning Commission. The mining and quarrying have relatively high growth (CAGR 6.2 percent) and a significant share of GSDP (10.8 percent) but low employment intensity and a high coefficient of variation (0.42) indicate that this activity is both volatile and weak in job creation, so its benefits are limited and unstable. Manufacturing, despite having the largest industrial share in GSDP (14.2 percent) has a negative growth rate (-1.8 percent CAGR), moderate volatility (0.38) and only medium employment intensity which indicates a stagnant core sector that neither drives output expansion nor fully realizes its labor absorption capacity. Construction has strong growth (7.4 percent CAGR) and high employment intensity, despite its smaller GSDP share (9.6 percent) and significant volatility (0.35). It serves as a labor-absorbing buffer but is vulnerable to cyclical shifts in investment. The table's employment-intensity categories are based on labor-elasticity estimates, indicates that Jharkhand's industrial growth of Jharkhand is characterized by a volatile, low-employment mining segment, a weak manufacturing base and a construction sector that provides jobs but is vulnerable to fluctuations in public and private investment.

5.8 Structural Implications and Policy Challenges

The structure of Jharkhand's industrial sector includes strong mining, weak manufacturing and volatile construction. and this scenario is creating serious hurdles for sustainable development. Heavy dependence on extractive industries has led to a kind of resource-dependency trap, where rich mineral deposits support enclave style growth instead of driving wider industrial diversification, echoing the resource-curse debate but rooted mainly in domestic structural constraints (Auty, 1993; Ross, 1999). The employment and fiscal impacts make this structure

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even more worrying. Capital-intensive mining generates few jobs, stagnant manufacturing blocks the main route for workers moving out of agriculture, and construction work is often informal, insecure, and low in skill development, so output can rise while underemployment and disguised unemployment remain high (Mazumdar & Sarkar, 2008; Bird & Smart, 2002). At the same time, dependence on volatile mining revenues makes budgeting unstable and encourages spending that moves with the cycle, while concentrated heavy and extractive industries create serious environmental damage and uneven regional development (Ghose, 2003). Tackling these problems calls for a broader, more integrated strategy. Jharkhand needs to improve infrastructure and the business climate, invest in education and training, build stronger links from mining to downstream processing and local suppliers and create fiscal institutions that manage resource revenues prudently over good and bad years (Lall, 2004). The key challenge is to turn mineral wealth into durable gains in skills, infrastructure and a more diversified production base, rather than remaining locked into fragile, resource-dependent growth.

6. Conclusion and Policy Implications

In Jharkhand the post-2010 growth record shows that the state has achieved positive but highly volatile real GSDP expansion, closely linked to shift in mining and construction rather than to broad-based industrial development. Over time, the structure of output has shifted away from an already high industrial share toward a services-dominated economy, while agriculture's share has remained broadly stable and manufacturing has stagnated or declined, raising concerns about premature "deindustrialization" and the quality of structural change in a low-income, resource-rich state. Within industry, high growth in mining and construction alongside negative manufacturing CAGR has produced an industrial base that is narrow, volatile and weak in employment creation and productivity gains with limited capacity to absorb labour moving out of agriculture or to anchor long-term structural transformation.

These findings point to a clear set of policy priorities. First, strengthening manufacturing especially diversified, labour intensive and mineral-processing activities, including MSMEs should be supported by better infrastructure, regulatory simplification, access to finance and technology upgradation. Second, mining revenues need to be managed and invested strategically with the use of strong fiscal frameworks to stabilize spending over the cycle and channel resources into power, transport, urban infrastructure and human capital. Third, targeted skill development and inclusion policies, particularly for rural and tribal populations are essential so that workers can benefit from emerging opportunities in both industry and services. Finally, greater regulatory stability in mining and construction, combined with stronger environmental and social safeguards can reduce output volatility and improved investment will help to align Jharkhand resource-based growth with long-term inclusive and sustainable development.

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