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Industrial Cooperative Federalism, Specialisation, and Inter-State Complementarity of the 28 States of India

Industrial Policy Research Report
On

Industrial Cooperative Federalism, Specialisation, and Inter-State Complementarity of the 28 States of India

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Executive Summary

India's industrial development has largely evolved within a competitive federal structure, in which multiple states compete to attract and develop similar industries such as automobiles, electronics, pharmaceuticals, chemicals, textiles, and engineering. While this has accelerated industrialisation, it has also created duplication of industrial activity, fragmented supply chains, inefficient allocation of public resources, and unhealthy inter-state competition.

This report proposes an alternative framework based on Cooperative Industrial Federalism, where states specialise according to their comparative industrial strengths while integrating through inter-state supply chains, industrial corridors, and complementary manufacturing ecosystems.

Using Annual Survey of Industries (ASI) data from 2013–2023 and NIC-2008 industrial classifications, the study identifies each state's strongest industries through a composite methodology combining:

- Location Quotient (LQ),
- Productivity & Value Creation Indicators,
- Industry Absorption & Social Relevance,
- and Composite Specialisation Scores.

The study further identifies strategically linked diversification industries that can strengthen industrial ecosystems through downstream value addition and industrial deepening.

Key Findings

The analysis shows that India's states possess distinct industrial advantages shaped by:

- geography,
- natural resources,
- labour structure,
- infrastructure,
- and historical industrialisation patterns.

Rather than encouraging every state to industrialise identically, the report finds strong potential for coordinated industrial specialisation.

Major Industrial Specialisation Clusters Identified

1. Advanced Manufacturing Corridor

Gujarat – Maharashtra – Karnataka – Tamil Nadu

State	Core Strength
Gujarat	Petrochemicals & chemicals
Maharashtra	Automobiles & engineering
Karnataka	Electronics & aerospace
Tamil Nadu	EV & electronics assembly

This corridor can support integrated value chains in:

- electric vehicles,
- electronics,
- precision engineering,
- and export manufacturing.

2. Heavy Industry & Mineral Corridor

Odisha – Jharkhand – Chhattisgarh

State	Core Strength
Odisha	Metals & chemicals
Jharkhand	Steel & machinery
Chhattisgarh	Electrical equipment

These states can collectively strengthen:

- steel manufacturing,
- machinery production,
- infrastructure industries,
- and industrial fabrication.

3. Agro-Industrial Manufacturing Corridor

Punjab – Haryana – Uttar Pradesh

State	Core Strength
Punjab	Agro-processing
Haryana	Engineering & auto components
Uttar Pradesh	Apparel & consumer manufacturing

This ecosystem can strengthen:

- food processing,
- labour-intensive manufacturing,
- MSMEs,
- and domestic consumer industries.

4. Northeast Regional Industrial Network

The report finds that northeastern states currently exhibit overlapping industries such as:

- wood products,
- bamboo processing,
- furniture,
- food processing,
- and handicrafts.

Instead of identical industrialisation, the report recommends coordinated regional specialisation:

- Assam → refining & packaging,
- Arunachal Pradesh → forestry & hydropower,
- Mizoram → bamboo processing,
- Nagaland → handicrafts,
- Meghalaya → mineral products,
- Tripura → furniture & packaging.

Major Policy Concerns Identified

The study finds that excessive industrial duplication among states creates:

- subsidy competition,
- inefficient industrial incentives,
- fragmented manufacturing ecosystems,
- and weaker domestic supply chains.

Several advanced states are increasingly competing in identical sectors such as:

- EVs,
- semiconductors,
- electronics,
- chemicals,
- and pharmaceuticals.

These risks creating over-diversification and duplication instead of coordinated industrial efficiency.

Key Recommendations

The report recommends the development of a national framework for Cooperative Industrial Federalism through:

1. Inter-State Industrial Coordination

States with complementary industries should jointly develop:

- industrial corridors,
- logistics systems,
- and integrated supply chains.

2. National Industrial Value-Chain Mapping

Industrial policy should identify:

- raw material states,
- component manufacturing states,
- assembly hubs,
- and export-oriented production regions.
- semiconductor parks,
- EV clusters,
- and identical industrial incentives.

4. Regional Industrial Ecosystems

India should promote integrated regional production systems instead of isolated state-level industrialisation.

5. MSME Integration

MSMEs should be connected with larger inter-state manufacturing ecosystems to improve:

- productivity,
- employment,
- exports,
- and industrial resilience.

Conclusion

The report concludes that India's future industrial growth should move beyond "competitive duplication federalism" toward a model of "cooperative industrial federalism."

States should not attempt to industrialise identically. Instead, they should specialise according to their comparative strengths while integrating with other states through coordinated industrial ecosystems, value chains, and production networks.

Such a strategy can:

- improve industrial efficiency,
- strengthen domestic manufacturing,
- promote balanced regional development,
- enhance export competitiveness,
- generate employment,
- and build resilient national supply chains.

The study therefore argues that cooperative industrial specialisation can become a critical pathway for India's long-term industrial transformation and global economic positioning.

Introduction

The global economy has increasingly moved toward specialised and interconnected industrial systems in which regions and nations focus on sectors where they possess comparative advantages, technological capabilities, resource strengths, or production efficiencies. Countries such as Germany, China, Japan, and South Korea have developed industrial ecosystems based on regional specialisation and integrated supply chains rather than fragmented and duplicative industrialisation strategies (Porter, 1998). Modern industrial competitiveness is therefore no longer determined solely by the presence of industries, but by the ability of regions to integrate production systems, specialise strategically, and participate efficiently in domestic and global value chains.

Global industrial history demonstrates that successful manufacturing economies rarely developed through identical industrialisation across all regions. Germany's industrial structure evolved through specialised regional clusters, where Bavaria focused on automobiles and advanced engineering, Baden-Württemberg on machinery and precision manufacturing, and North Rhine-Westphalia on chemicals and industrial production (Porter, 2000). Similarly, China's industrial rise was driven by differentiated regional industrial ecosystems, with Shenzhen emerging as an electronics hub, Shanghai as a financial and advanced manufacturing centre, and Guangdong as a large-scale export manufacturing base (Naughton, 2007). These examples illustrate that coordinated industrial specialisation often generates stronger productivity, economies of scale, export competitiveness, and industrial resilience than uniform industrial expansion.

India's industrial development trajectory since independence has undergone multiple phases, beginning with state-led industrialisation under the Industrial Policy Resolution of 1948 and Industrial Policy Resolution of 1956. The post-independence industrial strategy was strongly influenced by the Mahalanobis model, which prioritised heavy industries, public sector enterprises, and import substitution industrialisation (Ahluwalia, 1991). During this period, industrial policy focused on building core industries such as steel, machinery, mining, power generation, and infrastructure to strengthen national industrial capacity. While this approach contributed significantly to the creation of India's industrial base, it also resulted in excessive centralisation, licensing controls, low competitiveness, and limited integration with global markets.

The economic reforms of 1991 marked a major shift toward liberalisation, deregulation, and market-oriented industrial growth. The dismantling of the License Raj, reduction of trade barriers, encouragement of foreign investment, and integration into the global economy accelerated industrial diversification across states (Panagariya, 2008). Since liberalisation, industrial growth in India has increasingly become state-driven, with individual states competing aggressively to attract investments through industrial policies, subsidies, tax incentives, industrial corridors, and infrastructure development.

This process gave rise to what is commonly referred to as "competitive federalism," where states compete to improve their business environment and attract private investment. Competitive federalism has positively contributed to industrial expansion, infrastructure creation, and policy innovation across several states such as Gujarat, Maharashtra, Tamil Nadu, Karnataka, Telangana, and Andhra Pradesh. However, over time, this competition has also produced certain structural inefficiencies. Multiple states simultaneously attempt to develop similar industries such as automobiles, electronics, pharmaceuticals, semiconductors, chemicals, electric vehicles, and engineering manufacturing. As a result, India increasingly faces industrial duplication, fragmented supply chains, overlapping industrial ecosystems, and inefficient allocation of public resources.

For example, several states are simultaneously attempting to become:

- semiconductor hubs,
- EV manufacturing centres,
- pharmaceutical clusters,
- electronics manufacturing destinations,
- and export-oriented industrial corridors.

While industrial diversification is necessary, excessive duplication can weaken inter-state complementarities and reduce opportunities for coordinated industrial development. Such fragmentation may also create subsidy competition among states, duplication of industrial infrastructure, inefficient use of land and capital, and weaker domestic value chains.

At the same time, India possesses highly differentiated regional strengths

shaped by geography, mineral resources, labour structures, agricultural systems, infrastructure, ports, industrial history, and technological capabilities. Mineral-rich states such as Odisha, Jharkhand, and Chhattisgarh possess strong comparative advantages in mining, metals, steel, and heavy industries. Southern and western states such as Karnataka, Tamil Nadu, Maharashtra, and Gujarat possess strong ecosystems in automobiles, engineering, chemicals, electronics, and advanced manufacturing. Northeastern states demonstrate strengths in bamboo products, forestry, agro-processing, handicrafts, and decentralised manufacturing systems. Hill states such as Himachal Pradesh, Uttarakhand, and Sikkim show growing strengths in pharmaceuticals, agro-processing, packaging, and environmentally compatible industries.

Despite these differentiated capabilities, India lacks a comprehensive framework for coordinated inter-state industrial specialisation and industrial mapping. Existing industrial policies largely focus on:

- investment attraction,
- industrial incentives,
- infrastructure development,
- and ease of doing business,

rather than identifying how states can complement each other through integrated production ecosystems and value-chain specialisation.

This creates an important policy gap. India's long-term industrial competitiveness may increasingly depend not only on industrial growth within individual states, but also on the extent to which states function as interconnected industrial partners within national production systems. In this context, the concept of "cooperative industrial federalism" becomes highly relevant.

Cooperative industrial federalism refers to a framework in which states specialise according to their comparative industrial strengths while integrating with other states through coordinated supply chains, industrial corridors, logistics systems, and production complementarities.

Under such a framework:

- one state may specialise in raw materials,
- another in intermediate manufacturing,
- another in components,
- and another in final assembly and exports.

This approach can improve:

- industrial efficiency,
- domestic value addition,
- export competitiveness,
- economies of scale,
- employment generation,
- and regional balance in industrial development.

Industrial mapping and specialisation policies are therefore increasingly important for India's future manufacturing strategy. By identifying which industries demonstrate strong concentration, productivity, and long-term sustainability within specific states, industrial policy can become more evidence-based and strategically aligned. Such mapping can help:

- reduce inefficient industrial duplication,
- strengthen inter-state industrial linkages,
- support cluster-based manufacturing,
- improve export competitiveness,
- and integrate MSMEs into larger supply chains.

Specialisation also plays a critical role in export competitiveness. International trade theory has consistently emphasised that economies benefit when regions focus on sectors where they possess comparative or competitive advantages (Ricardo, 1817; Krugman, 1991). Export-oriented industrial ecosystems typically emerge in regions with deep supply chains, industrial clustering, skilled labour concentration, and production specialisation. India's aspiration to become a global manufacturing hub under initiatives such as "Make in India," Production Linked Incentive (PLI) schemes, and logistics corridor development, therefore, requires stronger coordination between industrial policy and regional industrial capabilities.

In this context, the present study attempts to develop a state-wise industrial mapping framework using Annual Survey of Industries (ASI) data from 2013 to 2023 and NIC-2008 industrial classifications. The study identifies existing industrial strengths within each state through a composite methodology combining:

- Location Quotient (LQ),
- Productivity and Value-Creation Indicators,
- Industry Absorption and Social Relevance,
- and Composite Specialisation Scores.

The report further analyses how states with complementary industrial structures can cooperate through integrated industrial ecosystems rather than competing through duplicative industrialisation. Ultimately, the study argues that India's future industrial transformation may require a gradual transition from "competitive duplication federalism" to a model of "cooperative industrial federalism," in which industrial specialisation and inter-state complementarity become central pillars of national manufacturing strategy.

Methodology

This study adopts a multi-dimensional industrial diagnostic framework to identify state-level industrial strengths, emerging sectors, and opportunities for inter-state industrial complementarity in India. The methodology is designed to move beyond conventional industrial ranking approaches by combining industrial concentration, productivity, industrial sustainability, and strategic linkage analysis into an integrated assessment framework.

The analytical approach is based on the principle that industrial specialisation should not be determined solely by the presence of industries within a state, but by the extent to which industries demonstrate:

- structural concentration,
- economic productivity,
- long-term operational sustainability,
- ecosystem linkages,
- and strategic relevance within broader regional and national value chains.

The study therefore combines quantitative industrial diagnostics with strategic industrial interpretation to identify industries that are both economically significant and structurally sustainable within each state.

Analytical Philosophy of the Study

The report is grounded in the broader policy objective of transitioning India from a model of fragmented and duplicative industrialisation toward a framework of cooperative industrial federalism. Rather than encouraging every state to industrialise identically, the methodology seeks to identify:

- industries where states already possess comparative strengths,
- sectors with scalable industrial ecosystems,
- and industries capable of generating inter-state production complementarities.

Accordingly, the framework evaluates not only industrial performance within states, but also the strategic positioning of industries within broader national manufacturing systems.

Global Alignment of the Methodology

The analytical framework adopted in this study is aligned with globally accepted. Each stage progressively filters and evaluates industries to identify sectors that are not only present within states but are strategically capable of supporting long-term industrial specialisation.

Stage 1: Industrial Concentration Assessment

The first stage evaluates whether a particular industry demonstrates structural concentration within a state relative to its importance at the national level.

This stage identifies:

- industries with strong state-level concentration,
- agglomeration effects,
- and existing industrial ecosystems.

The analysis uses concentration-based diagnostics to distinguish:

- strategically significant industries,
- from
- incidental or low-scale industrial presence.

Industries demonstrating stronger concentration relative to the national industrial structure are treated as potential specialisation sectors.

This stage serves as the foundational filter for identifying industries with:

- comparative industrial significance,
- established production ecosystems,
- and potential economies of scale.

Stage 2: Productivity and Value-Creation Assessment

Industrial concentration alone does not necessarily indicate economic competitiveness. Therefore, the second stage evaluates whether concentrated industries also demonstrate:

- productivity,
- value creation,
- operational efficiency,
- and industrial maturity.

The productivity assessment examines, practices in regional industrial policy, including the European Union's Smart Specialisation Strategy (S3), OECD regional competitiveness diagnostics, and World Bank competitive cities methodology. The use of industry concentration measures, productivity indicators, employment relevance, and growth stability is widely recognised as best practice for identifying sustainable regional specialisation.

The methodology is adapted to India's federal structure using Annual Survey of Industries (ASI) data, enabling evidence-based cooperative federalism rather than duplicative inter-state competition.

Data Source and Coverage

The study primarily utilises unit-level and aggregated industrial data from the Annual Survey of Industries (ASI) covering the period from:
2013–14 to 2022–23.
Industries are classified using:
NIC-2008 three-digit industry classifications.

The analysis covers all Indian states and evaluates manufacturing industries across multiple dimensions of industrial performance and structural relevance.

Analytical Structure of the Methodology

The methodology is structured into four major analytical stages:

Stage	Analytical Objective
Stage 1	Identify industrial concentration and comparative strength
Stage 2	Assess productivity and value-creation capability
Stage 3	Evaluate industrial absorption and sustainability
Stage 4	Construct composite industrial specialisation scores

- value creation per production unit,
- output generation capacity,
- capital intensity,
- and efficiency of converting industrial inputs into economic value.

This stage is particularly important because certain industries may exhibit high industrial presence but low productivity, low technological sophistication, or weak economic sustainability.

The productivity framework therefore helps identify industries capable of:

- scaling competitively,
- attracting investment,
- generating higher industrial output,
- and integrating into advanced manufacturing systems.

Industries demonstrating consistently strong productivity indicators are treated as economically competitive and structurally scalable.

Stage 3: Industrial Absorption and Social Relevance Assessment

Industrial policy cannot rely exclusively on high-value sectors without considering broader economic participation and industrial sustainability. Accordingly, the third stage evaluates:

- industrial absorption,
- continuity of operations,
- operational stability,
- and industrial expansion dynamics.

Given limitations in employment and wage data availability within the ASI dataset used, the study adopts proxy-based indicators to assess:

- industrial scale,
- operational continuity,
- economic sustainability,
- and expansion of industrial activity over time.

This stage is particularly important for:

- smaller states,
- labour-intensive economies,
- and resource-constrained industrial systems,

where broad-based industrial participation and sustainability may be more strategically relevant than purely capital-intensive production.

Industries demonstrating:

- stable operational activity,
- expanding industrial footprint,
- and stronger industrial continuity

are treated as socially and economically sustainable sectors for long-term industrial development.

Stage 4: Composite Industrial Specialisation Framework

The final stage integrates the outputs of the previous analytical stages into a composite industrial specialisation framework.

The composite framework combines:

- industrial concentration,
- productivity performance,
- and industrial sustainability indicators

to generate a consolidated strategic assessment of each industry within each state.

This integrated approach ensures that industries are not selected purely because they:

- exist within a state,
- exhibit temporary growth,
- or demonstrate isolated productivity spikes.

Instead, industries are identified as strategic specialisation sectors only when they simultaneously demonstrate:

- structural concentration,
- productivity capability,
- operational sustainability,
- and long-term industrial relevance.

The composite assessment therefore enables a balanced identification of:

- existing industrial strengths,
- emerging industrial opportunities,
- and strategically scalable sectors.

Identification of Existing and Emerging Industrial Strengths

The study classifies industries into two broad categories:

1. Existing Industrial Strengths

Industries demonstrating:

- strong concentration,
- established ecosystems,
- productivity capability,
- and operational sustainability.

These industries represent sectors where states already possess mature industrial advantages.

2. Emerging Industrial Strengths

Industries demonstrating:

- ecosystem linkages,
- downstream diversification opportunities,
- and future industrial expansion potential.

Emerging sectors are not identified merely through statistical growth, but through strategic linkage analysis with existing industrial strengths.

For example:

- chemicals linked to plastics,
- plastics linked to electronics,
- electronics linked to automobiles,
- pharmaceuticals linked to medical devices,
- forestry linked to furniture and packaging.

This linkage-based approach enables the identification of realistic industrial diversification pathways rather than disconnected industrial recommendations

Industrial Linkage and Cooperative Federalism Analysis

Beyond state-level diagnostics, the study also evaluates:

- inter-state industrial complementarities,
- overlapping industrial structures,
- and cooperative manufacturing opportunities.

States are analysed not as isolated industrial entities, but as potential participants within broader:

- regional production ecosystems,
- industrial corridors,
- and national manufacturing value chains.

This allows the study to identify:

- states with excessive industrial overlap and competitive duplication,
- and states with complementary industrial structures capable of supporting cooperative industrial federalism.

The analysis therefore, moves beyond conventional state-level industrial ranking and instead develops a framework for:

- coordinated industrial specialisation,
- inter-state manufacturing integration,
- and national industrial ecosystem development.

Strategic Relevance of the Methodology

The methodology developed in this report is designed not only for academic industrial analysis but also for practical policy application. The framework can support:

- industrial policy planning,
- regional manufacturing strategy,
- export-oriented industrial development,
- investment prioritisation,
- MSME integration,
- and inter-state industrial coordination.

The approach is particularly relevant in the context of:

- Make in India,
- Production Linked Incentive (PLI) schemes,
- industrial corridor development,
- logistics policy,
- and India's broader objective of strengthening domestic manufacturing competitiveness.

By integrating industrial concentration, productivity, sustainability, and inter-state complementarities into a unified framework, the methodology provides an evidence-based foundation for designing future-oriented industrial policies aligned with cooperative industrial federalism.

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INDUSTRIAL COOPERATIVE FEDERALISM, SPECIALISATION, AND INTER-STATE COMPLEMENTARITY OF THE 28 STATES OF INDIA

State Industrial Profile and Strategic Specialisation Pathway

1. Andhra Pradesh

State Industrial Overview

Andhra Pradesh possesses one of the most strategically positioned industrial ecosystems in India due to its long coastline, port infrastructure, industrial corridors, and agro-marine resource base. The state has emerged as an important manufacturing and logistics hub in southern India, supported by industrial regions such as Visakhapatnam, Sri City, Tirupati, Chittoor, Krishnapatnam, and Anantapur.

The state's industrial structure reflects a combination of:

- automobile and electronics manufacturing,
- pharmaceutical production,
- agro-processing,
- marine-linked industries,
- and export-oriented logistics activities.

The presence of major ports, industrial corridors, and improving connectivity has enabled Andhra Pradesh to integrate manufacturing with domestic and global supply chains. Additionally, state-level industrial policies promoting electronics manufacturing, medical devices, food processing, and industrial infrastructure have strengthened its diversification potential.

The composite score analysis conducted under this study identifies Andhra Pradesh as a state with strong potential for integrated manufacturing-based specialisation.

Existing Industrial Strengths (Data-Driven Findings)

The following industries emerged as the strongest existing industrial strengths based on the composite score methodology combining Location Quotient (LQ), Productivity Index, and Industry Absorption & Social Relevance indicators.

NIC Code	Industry	Pillars of Existing Strength
292	Manufacture of bodies for motor vehicles, trailers & semi-trailers	Identify industrial concentration and comparative strength
273	Manufacture of wiring and wiring devices	Assess productivity and value-creation capability
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Evaluate industrial absorption and sustainability
107	Manufacture of other food products	Construct composite industrial specialisation scores

These industries demonstrate:

- existing production capability,
- industrial concentration,
- manufacturing productivity,
- and strategic scalability.

Together, they indicate that Andhra Pradesh already possesses a diversified industrial foundation combining manufacturing, agro-processing, and export-oriented industries.

Strategically Linked Diversification Industries

Based on industrial linkages, infrastructure compatibility, and policy direction, the following industries may emerge as complementary diversification opportunities for Andhra Pradesh.

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments and supplies	Growth linked to healthcare manufacturing and pharma ecosystem
262	Manufacture of computers and peripheral equipment	Electronics manufacturing push under state industrial policy
301	Building of ships and boats	Coastal economy and port-led development potential
310	Manufacture of furniture	Construction growth and urbanisation-linked demand

These industries are not identified solely through composite score analysis, but through:

- supply-chain complementarities,
- infrastructure readiness,
- export potential,
- and industrial ecosystem compatibility.

Industrial Linkage Model

Pharmaceuticals & Chemicals
↓
Medical Devices & Healthcare Manufacturing
↓
Electronics & Wiring Systems
↓
Automobile Components & Transport Equipment
↓
Port-led Exports and Logistics Integration

Reason behind this industrial pathway

This industrial structure is feasible because Andhra Pradesh already possesses:

- major ports and export gateways,
- industrial corridors,
- electronics manufacturing momentum,
- pharmaceutical clusters,
- agro-processing strengths,
- and logistics infrastructure.

As a result, the state's diversification opportunities naturally emerge from its existing industrial ecosystem rather than from disconnected industrial promotion.

Strategic Outlook under Cooperative Federalism

Under a cooperative federalism framework, Andhra Pradesh can evolve as a specialised manufacturing and export-oriented industrial state with strengths in:

- transport equipment,
- electronics-linked manufacturing,
- pharmaceuticals,
- and agro-processing.

Such specialisation can strengthen inter-state complementarities by enabling Andhra Pradesh to supply high-value manufactured goods, healthcare products, and logistics-linked industrial outputs to other regions of India while simultaneously integrating into global value chains.

2. Arunachal Pradesh

State Industrial Overview

Arunachal Pradesh possesses a resource-based hill economy characterised by extensive forest cover, bamboo resources, hydropower potential, and agro-based livelihoods. Unlike heavily industrialised states, the industrial structure of Arunachal Pradesh remains relatively small-scale and geographically dispersed, with industries largely linked to natural resources, local consumption demand, and infrastructure development.

The state's industrialisation pattern is shaped by:

- forestry and bamboo resources,
- horticulture and agro-processing,
- hydropower expansion,
- rural infrastructure development,
- and small-scale manufacturing activities.

Due to terrain constraints, low urbanisation, and logistical challenges, large-scale heavy industrialisation is less feasible. Therefore, a decentralised and resource-linked manufacturing strategy is more practical for the state.

The composite score analysis identifies Arunachal Pradesh as a state whose industrial strengths are primarily linked to forestry-based industries, food processing, and construction-supporting manufacturing activities.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
162	Manufacture of products of wood, cork, straw and plaiting materials	Strong forestry and bamboo resource base
107	Manufacture of food products	Agro-based and small-scale food processing activity
239	Manufacture of non-metallic mineral products	Construction materials linked to infrastructure growth
310	Manufacture of furniture	Forest-resource and bamboo-based manufacturing potential

These industries reflect the state's dependence on:

- forest-linked economic activity,
- agro-processing,
- local construction demand,
- and decentralised manufacturing systems.

The findings indicate that Arunachal Pradesh's industrial pathway is more suitable for sustainable resource-based industrialisation rather than capital-intensive heavy manufacturing.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
108	Manufacture of prepared animal feeds	Livestock and poultry expansion potential
271	Manufacture of electrical equipment	Linked with hydropower expansion and rural electrification
161	Sawmilling and planning of wood	Upgradation from raw timber to the processed wood value chain

These industries emerge as logical diversification opportunities because they build upon the state's existing forestry, agro-based, and hydropower-linked ecosystem rather than introducing disconnected industrial sectors.

Industrial Linkage Model

Forestry & Bamboo
↓
Wood Processing & Sawmilling
↓
Furniture & Bamboo Products
↓
Construction Materials & Rural Infrastructure
Simultaneously:
Hydropower Expansion
↓

Electrical Equipment
↓
Rural Infrastructure Supply Chains

Reason behind this industrial pathway

This industrial strategy is realistic because Arunachal Pradesh already possesses:

- extensive forest and bamboo resources,
- growing infrastructure investment,
- hydropower expansion potential,
- and increasing rural construction demand.

As a result, industrial diversification can occur through gradual value addition to existing resource sectors rather than through heavy industrial transformation.

Strategic Outlook under Cooperative Federalism

Under a cooperative federalism framework, Arunachal Pradesh can specialise in sustainable forest-based manufacturing, bamboo-linked industries, food processing, and hydropower-support industries. Such specialisation would allow the state to contribute niche ecological and resource-based products to inter-state supply chains while preserving environmental sustainability and supporting decentralised regional development.

3. Assam

State Industrial Overview

Assam represents one of the most economically significant states in Northeast India due to its strategic location, tea economy, petroleum resources, river systems, and agro-based production structure. Historically, Assam's industrial ecosystem evolved around tea plantations, oil refining, forestry-linked activities, and agro-processing industries.

The state's industrial structure today reflects a combination of:

- plantation-based industries,
- petroleum refining,
- food processing,
- packaging and paper industries,
- and emerging downstream manufacturing activities.

Its connectivity with Southeast Asia, expanding logistics infrastructure, and resource availability provide significant scope for industrial diversification linked to agro-processing, packaging, and petrochemical value chains.

The composite score analysis identifies Assam as a state with strong strengths in beverages, food processing, petroleum-linked industries, and forestry-based manufacturing.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
110	Manufacture of beverages	Tea industry backbone
192	Manufacture of refined petroleum products	Digboi and Numaligarh refinery ecosystem
107	Manufacture of food products	Agro-processing linked to tea, rice, spices and horticulture
170	Manufacture of paper and paper products	Historically linked to forestry resources

These industries reflect Assam's resource-driven industrial structure, where agriculture, plantations, forestry, and petroleum collectively shape industrial activity.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
181	Printing and service activities related to printing	Linked to publishing and packaging demand
162	Manufacture of wood and bamboo products	Bamboo and wood-based downstream processing
222	Manufacture of plastic products	Packaging and FMCG support industry

These sectors complement Assam's existing agro-processing and petroleum ecosystem while supporting downstream industrial diversification.

Industrial Linkage Model

Tea & Agro Economy
↓
Food Processing & Beverage Manufacturing
↓
Paper, Packaging & Printing
↓
Retail and Export Supply Chains
Simultaneously:
Petroleum Refining
↓
Plastics & Packaging Materials
↓
Consumer Goods & FMCG Support Industries

Reason behind this industrial pathway

This industrial pathway is feasible because Assam already possesses:

- a globally recognised tea industry,
- petroleum refining infrastructure,
- forestry and bamboo resources,
- and growing packaging demand.

The emerging industries, therefore, deepen existing industrial linkages rather than creating disconnected industrial priorities.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Assam can evolve as Northeast India's agro-processing, beverage, petroleum refining, and packaging hub. Its industrial strengths can support inter-state trade in processed agricultural goods, tea products, petrochemical-linked materials, and packaging industries while strengthening regional manufacturing integration across eastern and northeastern India.

4. Bihar

State Industrial Overview

Bihar's industrial structure is primarily shaped by agriculture, labour-intensive production systems, food processing, and small-scale manufacturing activities. Despite historically lower levels of industrialisation compared to western and southern states, Bihar possesses significant demographic advantages, agricultural output, and labour availability that can support decentralised manufacturing growth.

The state's industrial ecosystem is strongly linked with:

- agro-processing, textiles and apparel,
- furniture and household manufacturing,
- and labour-intensive MSME production systems.
-

Given Bihar's economic structure, labour-intensive and agro-linked industries are more practical and sustainable than highly capital-intensive heavy industrialisation.

The composite score analysis identifies Bihar's strongest industrial opportunities in food processing, apparel manufacturing, and small-scale consumer industries.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry
103	Processing and preserving of fruits and vegetables
141	Manufacture of wearing apparel
310	Manufacture of furniture
107	Manufacture of food products

These industries reflect Bihar's comparative advantages in:

- agricultural raw material availability,
- labour-intensive production,
- MSME-led manufacturing,
- and low-cost production systems.

Strategically Linked Diversification Industries

NIC Code	Industry
271	Manufacture of electrical equipment
222	Manufacture of plastic products
170	Manufacture of paper and paper products

These industries can emerge as complementary sectors supporting packaging, rural electrification, household consumption, and MSME expansion.

Industrial Linkage Model

Agro Economy
↓
Food Processing
↓
Packaging & Paper Products
↓
Furniture, MSMEs & Consumer Manufacturing
Simultaneously:
Labour-intensive Manufacturing
↓
Apparel & Household Industries
↓
Electrical Equipment & Rural Consumption Goods

Reason behind this industrial pathway

This pathway is realistic because Bihar already possesses:

- strong agricultural production,
- abundant labour availability,
- expanding rural markets,
- and growing MSME activity.

Therefore, labour-intensive manufacturing and agro-processing are more practical and scalable than heavy industrial positioning.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Bihar can specialise in labour-intensive manufacturing, agro-processing, and rural consumer industries. Such a strategy can strengthen employment generation, MSME expansion, and inter-state supply of processed food, apparel, and household goods while supporting balanced regional industrialisation.

5. Chhattisgarh

State Industrial Overview

Chhattisgarh possesses one of India's most resource-intensive industrial structures due to its rich reserves of coal, iron ore, limestone, and other minerals. The state has historically developed around mining, metals, power generation, and heavy industry, making it an important contributor to India's industrial raw material and energy supply chain.

The industrial ecosystem of Chhattisgarh is strongly linked with:

- steel and metal production,
- power-intensive industries,
- mineral processing,
- cement and construction materials,
- and engineering-linked manufacturing.
-

Industrial regions such as Bhilai, Raipur, Korba, Bilaspur, and Durg have emerged as important industrial centres supporting both upstream and downstream industrial activity.

The composite score analysis identifies Chhattisgarh's strongest industrial capabilities in steel, electrical equipment, mineral-based manufacturing, and industrial materials.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
241	Manufacture of basic iron and steel	Strong mining and steel ecosystem anchored by Bhilai and related industrial zones
271	Manufacture of electrical equipment	Linked with power generation, transmission infrastructure, and industrial machinery demand
239	Manufacture of non-metallic mineral products	Cement, construction materials, and mineral-based industries supported by limestone reserves
231	Manufacture of glass and glass products	Construction-linked and mineral-based manufacturing activity

These industries reflect Chhattisgarh's position as a mineral-resource and heavy-industrial state with strong backward linkages to mining and energy sectors.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
141	Manufacture of wearing apparel	Labour-intensive industrial diversification opportunity
152	Manufacture of footwear	Employment-generating MSME manufacturing potential
139	Manufacture of textiles	Downstream diversification beyond resource-heavy industries

These sectors provide opportunities for:

- employment-intensive industrialisation,
- MSME development,
- women-led manufacturing employment,
- and reduction of overdependence on mining-led growth.

Industrial Linkage Model
Mining & Minerals
↓
Iron & Steel Production
↓
Machinery & Fabricated Components
↓
Electrical Equipment & Industrial Infrastructure
Simultaneously:
Industrialisation & Urbanisation
↓
Labour-intensive Diversification
↓
Textiles, Apparel & Footwear Manufacturing

Reason behind this industrial pathway

This strategy is feasible because Chhattisgarh already possesses:

- abundant mineral resources,
- heavy industrial infrastructure,
- steel manufacturing capability,
- and growing urban-industrial demand.

At the same time, labour-intensive manufacturing sectors such as textiles and footwear can help diversify the economy, improve employment absorption, and reduce excessive dependence on extractive industries.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Chhattisgarh can function as a strategic industrial-materials and engineering hub supplying steel, electrical equipment, and construction-linked industrial products to other states. Simultaneously, the promotion of labour-intensive sectors can support balanced industrialisation and broader socio-economic inclusion within the state.

6. Goa

State Industrial Overview

Goa possesses a unique industrial structure shaped by tourism, coastal geography, port infrastructure, marine activities, and service-linked manufacturing. Unlike large inland manufacturing states, Goa's industrial ecosystem combines small-scale manufacturing, marine-linked industries, food and beverage production, and tourism-supporting economic activity.

The state benefits from:

- coastal trade connectivity,
- port infrastructure,
- tourism-driven consumption,
- marine engineering activities,
- and relatively high urbanisation levels.

Industrial activity in Goa is concentrated around:

- marine fabrication,
- repair and maintenance services,
- food and beverage industries,
- and tourism-linked manufacturing sectors.

The composite score analysis identifies Goa's strongest industrial strengths in structural metal products, machinery repair, beverages, and food products.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
251	Manufacture of structural metal products	Linked to marine engineering, fabrication, and coastal infrastructure
331	Repair and installation of machinery and equipment	Strong marine repair and industrial maintenance ecosystem
110	Manufacture of beverages	Tourism-driven beverage demand and processing activity
107	Manufacture of food products	Hospitality and tourism-linked food processing ecosystem

These industries reflect Goa's service-integrated manufacturing structure where tourism, marine activity, and coastal trade significantly influence industrial activity.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
301	Building of ships and boats	Coastal economy and marine infrastructure potential
310	Manufacture of furniture	Hospitality, tourism, and real estate-linked demand
325	Manufacture of medical and dental instruments	Healthcare and high-value precision manufacturing opportunity

These industries complement Goa's existing marine economy and tourism-linked service ecosystem.

Industrial Linkage Model

Tourism & Ports
↓
Marine Repair & Industrial Services
↓
Shipbuilding & Coastal Fabrication
↓
Export-linked Marine Manufacturing
Simultaneously:
Food & Beverage Manufacturing
↓
Hospitality & Tourism Supply Chains

Reason behind this industrial pathway

This industrial pathway is realistic because Goa already possesses:

- coastal logistics infrastructure,
- tourism-driven demand,
- marine engineering capability,
- and relatively high-value service integration

As a result, industrial diversification naturally emerges around marine services, hospitality-linked manufacturing, and niche precision industries.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Goa can specialise as a coastal marine-services and tourism-linked manufacturing state, contributing marine engineering services, specialised fabrication, hospitality-linked products, and niche precision manufacturing to national and export markets.

7. Gujarat

State Industrial Overview

Gujarat represents one of India's most industrialised and export-oriented state economies. Its industrial structure is deeply integrated with petrochemicals, chemicals, refining, pharmaceuticals, engineering, plastics, and export manufacturing. The state's strong entrepreneurial ecosystem, industrial infrastructure, port connectivity, and manufacturing base have enabled Gujarat to emerge as a major industrial growth engine of India.

Industrial regions such as Ahmedabad, Surat, Vadodara, Bharuch, Jamnagar, Rajkot, and Sanand collectively support a highly diversified industrial ecosystem.

The state's industrial structure is strongly linked with:

- petroleum refining,
- petrochemicals,
- plastics,
- pharmaceuticals,
- engineering,
- and export-oriented manufacturing.

The composite score analysis identifies Gujarat's strongest industrial strengths in chemicals, petroleum products, plastics, and pharmaceuticals.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
201	Manufacture of basic chemicals	Large chemical manufacturing ecosystem across industrial corridors
202	Manufacture of other chemical products	Strong downstream chemical diversification
192	Manufacture of refined petroleum products	Jamnagar and petro-refining infrastructure
222	Manufacture of plastic products	Strong petrochemical-plastic integration
210	Manufacture of pharmaceuticals	Major pharmaceutical manufacturing and export ecosystem

These industries collectively demonstrate Gujarat's strength in capital-intensive, export-oriented, and globally integrated manufacturing sectors.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
263	Manufacture of communication equipment	Electronics manufacturing diversification opportunity
275	Manufacture of domestic appliances	Consumer manufacturing expansion
107	Manufacture of processed food products	Agro-industrial diversification
273	Manufacture of wiring and wiring devices	Electrical manufacturing and industrial electronics integration

Industrial Linkage Model

Petroleum Refining
↓
Petrochemicals & Chemicals
↓
Plastics & Synthetic Materials
↓
Electronics Components & Electrical Manufacturing
Simultaneously:
Chemicals
↓
Pharmaceuticals
↓
Medical Manufacturing & Export Ecosystem

Reason behind this industrial pathway

This industrial structure is feasible because Gujarat already possesses:

- large petrochemical infrastructure,
- global export connectivity,
- strong industrial clusters,
- and integrated manufacturing ecosystems.

The linked diversification industries therefore deepen existing industrial capabilities instead of introducing disconnected sectors.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Gujarat can continue functioning as India's petrochemical, pharmaceutical, and export-manufacturing powerhouse while simultaneously supporting downstream industrial supply chains for plastics, electronics, electrical equipment, and industrial materials across other states.

8. Haryana

State Industrial Overview

Haryana possesses one of India's most advanced manufacturing ecosystems, particularly in automobile production, engineering industries, industrial components, and modern industrial services. Its proximity to the National Capital Region (NCR), strong infrastructure connectivity, logistics advantages, and industrial corridors have enabled Haryana to emerge as a major manufacturing and supply-chain hub in northern India.

Industrial centres such as Gurugram, Faridabad, Manesar, Panipat, Sonipat, and Yamunanagar collectively support:

- automobile manufacturing,
- engineering industries,
- fabricated metal products,
- textiles and man-made fibres,
- and industrial support services.

The composite score analysis identifies Gujarat's strongest industrial strengths in chemicals, petroleum products, plastics, and pharmaceuticals.

The state's industrial structure is characterised by strong integration between manufacturing, logistics, industrial servicing, and export-oriented production systems. The composite score analysis identifies Haryana's strongest industrial strengths in automobiles, auto components, fabricated metal products, and man-made fibre industries.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
291	Manufacture of motor vehicles	Strong automobile manufacturing ecosystem around Gurugram-Manesar belt
293	Manufacture of parts and accessories for motor vehicles	Deep auto-component supply chain integration
203	Manufacture of man-made fibres	Textile and synthetic fibre manufacturing base linked to Panipat and related industrial clusters
259	Manufacture of fabricated metal products	Engineering and industrial fabrication ecosystem supporting manufacturing supply chains

These industries collectively reflect Haryana's strengths in:

- industrial manufacturing,
- supply-chain integration,
- engineering-based production,
- and export-oriented industrial systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
383	Materials recovery	Industrial recycling and circular manufacturing opportunities
331	Repair and installation of machinery and equipment	Growing industrial servicing and maintenance ecosystem
325	Manufacture of medical and dental instruments	Precision manufacturing capabilities linked to engineering ecosystem

These sectors complement Haryana's industrial structure by strengthening:

- industrial maintenance services,
- circular economy integration,
- and precision manufacturing diversification.

Industrial Linkage Model

Automobile Manufacturing
↓
Auto Components & Fabricated Products
↓
Industrial Machinery & Services
↓
Recycling & Materials Recovery Ecosystem
Simultaneously:
Engineering Capability
↓
Precision Manufacturing
↓
Medical Instruments & High-Value Industrial Products

Reason behind this industrial pathway

This industrial pathway is realistic because Haryana already possesses:

- strong automobile manufacturing clusters,
- logistics and transport connectivity,
- engineering and fabrication capabilities,
- and industrial servicing demand generated by large manufacturing ecosystems.

The diversification industries, therefore, naturally emerge from existing industrial strengths rather than from disconnected industrial expansion

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Haryana can continue to function as one of India's leading automobile and engineering manufacturing hubs while simultaneously emerging as a centre for industrial servicing, recycling ecosystems, and precision manufacturing. This positioning strengthens inter-state industrial supply chains linked to automobiles, engineering goods, and industrial maintenance services.

9. Himachal Pradesh

State Industrial Overview

Himachal Pradesh possesses a distinctive hill-state industrial structure shaped by pharmaceuticals, horticulture, agro-processing, forestry-linked industries, and environmentally compatible manufacturing. Unlike highly urban-industrial states, Himachal Pradesh's industrial growth has evolved through cluster-based manufacturing, tax-incentive-driven industrialisation, and resource-linked production systems.

Industrial regions such as Baddi, Solan, Paonta Sahib, Una, and Nalagarh have emerged as important centres for pharmaceutical production and small-scale manufacturing activities.

The state's industrial ecosystem is closely connected with:

- pharmaceutical manufacturing,
- food and agro-processing,
- wood and forest-based industries,
- and packaging-related activities.

The composite score analysis identifies pharmaceuticals, grain-processing industries, wood products, and paper industries as Himachal Pradesh's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Strong pharmaceutical manufacturing ecosystem in Baddi and surrounding industrial clusters
106	Manufacture of grain mill products, starches and starch products	Agro-processing linked to regional agricultural production
162	Manufacture of wood products	Forestry-linked small-scale manufacturing base
170	Manufacture of paper and paper products	Packaging and forest-resource-linked industrial activity

These industries reflect Himachal Pradesh's comparative strengths in:

- environmentally compatible manufacturing,
- pharmaceuticals,
- horticulture-linked processing,
- and forest-resource-based industries.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
107	Manufacture of food products	Expansion of horticulture and agro-processing value chains
325	Manufacture of medical and dental instruments	Complementary healthcare manufacturing linked to pharma ecosystem
310	Manufacture of furniture	Wood-resource and tourism-linked manufacturing potential

Industrial Linkage Model

Pharmaceuticals
↓
Medical Devices & Packaging
↓
Healthcare Manufacturing Ecosystem
Simultaneously:
Forestry & Wood Resources
↓
Wood Products & Furniture
↓
Tourism & Local Consumption Markets
And:
Horticulture & Agriculture
↓
Food Processing
↓
Regional Agro-based Supply Chains

Reason behind this industrial pathway

This industrial structure is feasible because Himachal Pradesh already possesses:

- a nationally significant pharmaceutical ecosystem,
- horticulture-based agricultural production,
- forest resources,
- and environmentally sensitive industrial planning.

The linked diversification industries therefore align with both ecological sustainability and regional industrial strengths.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Himachal Pradesh can evolve as a specialised pharmaceutical, healthcare-manufacturing, and agro-processing state while also supporting sustainable forest-based industries. Such positioning enables the state to contribute high-value healthcare products, processed food items, and environmentally compatible manufacturing outputs to inter-state and national supply chains.

10. Jharkhand

State Industrial Overview

Jharkhand possesses one of India's most resource-intensive industrial structures due to its vast reserves of coal, iron ore, bauxite, copper, uranium, and other minerals. The state has historically functioned as a major mining, steel, and heavy-engineering centre supporting India's industrialisation process.

Industrial centres such as Jamshedpur, Bokaro, Dhanbad, Ranchi, and Hazaribagh collectively support:

- iron and steel production,
- heavy engineering,
- machinery manufacturing,
- mining-linked industries,
- and electrical equipment production.

Jharkhand's industrial ecosystem is therefore deeply integrated with India's heavy industrial and infrastructure supply chains.

The composite score analysis identifies basic metals, machinery, and electrical equipment as the state's strongest industrial capabilities.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
241	Manufacture of basic iron and steel	Strong steel ecosystem linked with mining and industrial infrastructure
242	Manufacture of basic precious and other non-ferrous metals	Mineral-resource-driven metal manufacturing capabilities
271	Manufacture of electrical equipment	Industrial and power-sector-linked equipment manufacturing
281	Manufacture of general-purpose machinery	Heavy engineering and industrial machinery ecosystem

These industries reflect Jharkhand's core strengths in:

- mining-based industrialisation,
- heavy engineering,
- industrial infrastructure production,
- and metal-based manufacturing systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
107	Manufacture of food products	Agro-processing diversification opportunity
259	Manufacture of fabricated metal products	Downstream industrial fabrication and MSME engineering ecosystem
239	Manufacture of non-metallic mineral products	Construction materials linked to infrastructure and urbanisation growth

These industries provide opportunities to deepen value addition and reduce overdependence on raw mineral extraction.

Industrial Linkage Model

Mining & Minerals
↓
Iron, Steel & Non-ferrous Metals
↓
Machinery & Engineering Industries
↓
Electrical Equipment & Industrial Fabrication
Simultaneously:
Industrialisation & Urbanisation
↓
Construction Materials & MSMEs
↓
Food Processing & Regional Diversification

Reason behind this industrial pathway

This industrial strategy is realistic because Jharkhand already possesses:

- large mineral reserves,
- heavy industrial infrastructure,
- engineering capability,
- and established steel manufacturing ecosystems.

The linked diversification industries therefore support downstream industrialisation and broader economic diversification rather than dependence solely on extractive industries

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Jharkhand can continue functioning as one of India's major heavy-industrial and engineering states while simultaneously strengthening downstream fabrication, machinery manufacturing, and construction-material industries. This positioning enables the state to contribute industrial raw materials, engineering goods, and infrastructure-supporting products to inter-state industrial supply chains across India.

11. Karnataka

State Industrial Overview

Karnataka possesses one of India's most technologically advanced and innovation-driven industrial ecosystems. The state has emerged as a national centre for electronics, aerospace, pharmaceuticals, information technology, precision engineering, and advanced manufacturing. Bengaluru, Mysuru, Hubballi-Dharwad, Mangaluru, and Belagavi collectively support a highly diversified industrial structure integrated with research institutions, global technology firms, and high-skill manufacturing sectors.

The state's industrial ecosystem is characterised by:

- electronics and semiconductor-linked manufacturing,
- aerospace and defence production,
- pharmaceuticals and biotechnology,
- precision engineering,
- and strong integration between manufacturing and digital services.

The composite score analysis identifies Karnataka's strongest industrial capabilities in electronics, communication equipment, computers, pharmaceuticals, and precision instruments.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Strong pharmaceutical and biotechnology ecosystem
261	Manufacture of electronic components	Electronics manufacturing and semiconductor-linked production ecosystem
262	262Manufacture of computers and peripheral equipment	Bengaluru-led technology manufacturing base
263	Manufacture of communication equipment	Telecom, electronics, and digital hardware ecosystem
265	Manufacture of measuring, testing and control instruments	Precision engineering and industrial instrumentation capabilities

These industries collectively demonstrate Karnataka's comparative strengths in:

- advanced technology manufacturing,
- high-value industrial production,
- innovation-driven industries,
- and globally integrated industrial ecosystems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments	Precision manufacturing and healthcare technology linkage
303	Manufacture of air and spacecraft and related machinery	Aerospace corridor and defence manufacturing potential
620*	IT/software ecosystem linkage	Digital ecosystem supporting manufacturing integration
279	Manufacture of other electrical equipment	Expansion of electronics and electrical manufacturing supply chains

Industrial Linkage Model

Electronics Manufacturing
↓
Communication Equipment
↓
Aerospace & Defence Manufacturing
↓
Precision Instruments
↓
Medical Devices & High-Technology Products

Reason behind this industrial pathway

This industrial structure is realistic because Karnataka already possesses:

- Bengaluru's technology ecosystem,
- aerospace and defence corridors,
- semiconductor ambitions,
- advanced engineering capabilities,
- and strong research and innovation infrastructure.

The linked diversification industries therefore deepen Karnataka's transition toward high-technology and innovation-intensive manufacturing.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Karnataka can function as India's advanced-technology manufacturing and innovation hub, specialising in electronics, aerospace, precision engineering, medical devices, and digitally integrated manufacturing systems. This enables the state to contribute high-value industrial products and innovation-led manufacturing capabilities to national and global supply chains.

12. Kerala

State Industrial Overview

Kerala's industrial structure is shaped by its marine economy, tourism ecosystem, agro-processing base, healthcare sector, and high human development indicators. Unlike heavily industrialised manufacturing states, Kerala's industrial activity is characterised by value-added processing industries, export-oriented food products, marine-linked industries, and service-integrated manufacturing.

The state's industrial ecosystem is linked with:

- fisheries and marine processing,
- food and beverage manufacturing,
- chemicals and rubber-linked industries,
- tourism-driven manufacturing demand,
- and healthcare-linked economic activity.

The composite score analysis identifies food products, beverages, fish processing, chemical products, and furniture manufacturing as Kerala's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Strong agro-processing and spice-processing ecosystem
110	Manufacture of beverages	Beverage processing linked to plantation and tourism economy
102	Processing and preserving of fish, crustaceans and molluscs	Marine economy and export-oriented seafood processing
202	Manufacture of chemical products	Rubber, chemicals, and downstream processing industries
310	Manufacture of furniture	Tourism, real estate, and wood-based manufacturing demand

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments	Healthcare and medical-tourism-linked manufacturing opportunity
222	Manufacture of plastic products	Packaging and FMCG-linked downstream industries
170	Manufacture of paper and packaging products	Export packaging and logistics demand
162	Manufacture of wood products	Furniture and tourism-linked manufacturing diversification

Industrial Linkage Model

Marine Economy

↓

Fish Processing & Food Products

↓

Packaging & Export Supply Chains

Simultaneously:

Tourism & Healthcare Economy

↓

Furniture & Hospitality-linked Manufacturing

↓

Medical Devices & Healthcare Products

Reason behind this industrial pathway

This industrial strategy is realistic because Kerala already possesses:

- a strong marine export economy,
- tourism-linked consumption demand,
- healthcare infrastructure,
- and agro-processing capability.

The linked diversification industries therefore complement existing economic strengths while supporting export-oriented value addition.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Kerala can specialise in marine processing, healthcare-linked manufacturing, tourism-supporting industries, and value-added food products. Such positioning strengthens Kerala's role in export-oriented agro-marine supply chains and healthcare manufacturing ecosystems.

13. Madhya Pradesh

State Industrial Overview

Madhya Pradesh possesses a diversified industrial structure combining agriculture-based industries, heavy manufacturing, pharmaceuticals, chemicals, and engineering activities. Its central geographic location, mineral availability, industrial corridors, and improving logistics connectivity have enabled the state to emerge as an important manufacturing and agro-processing centre in central India.

The state's industrial ecosystem is closely linked with:

- food processing,
- pharmaceuticals,
- chemicals,
- engineering industries,
- and machinery manufacturing.

Industrial centres such as Indore, Pithampur, Bhopal, Gwalior, and Jabalpur support diversified industrial activity ranging from MSMEs to large-scale manufacturing operations.

The composite score analysis identifies food products, iron and steel, chemical products, and pharmaceuticals as Madhya Pradesh's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Agro-processing linked to large agricultural production base
241	Manufacture of basic iron and steel	Industrial manufacturing and engineering support ecosystem
202	Manufacture of chemical products	Growing chemical manufacturing diversification
210	Manufacture of pharmaceuticals	Expanding pharmaceutical manufacturing clusters

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
282	Manufacture of special-purpose machinery	Healthcare and medical-tourism-linked manufacturing opportunity
222	Manufacture of plastic products	Packaging and FMCG-linked downstream industries
259	Manufacture of paper and packaging products	Export packaging and logistics demand
275	Manufacture of wood products	Furniture and tourism-linked manufacturing diversification

Industrial Linkage Model

Agro-processing
↓
Food Manufacturing
↓
Packaging & Consumer Goods
Simultaneously:
Iron & Steel
↓
Machinery & Fabricated Components
↓
Industrial Manufacturing Ecosystem
And:
Chemicals
↓
Pharmaceuticals
↓
Healthcare-linked Manufacturing

Reason behind this industrial pathway

This industrial pathway is realistic because Madhya Pradesh already possesses:

- strong agricultural production,
- central logistics connectivity,
- growing industrial infrastructure,
- and diversified manufacturing capability.

The linked diversification industries therefore strengthen downstream manufacturing integration and industrial value addition.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Madhya Pradesh can evolve as a diversified agro-industrial and engineering manufacturing state, supplying processed food products, industrial machinery, fabricated components, pharmaceuticals, and chemicals to national supply chains across India.

14. Maharashtra

State Industrial Overview

Maharashtra possesses the most diversified and industrially advanced manufacturing ecosystem in India. The state functions as a major centre for automobiles, pharmaceuticals, chemicals, plastics, engineering, electronics, financial services, logistics, and export-oriented manufacturing. Industrial regions such as Mumbai Metropolitan Region, Pune, Nashik, Aurangabad, Nagpur, Kolhapur, and Raigad collectively support one of the largest integrated industrial systems in the country.

The state benefits from:

- strong port infrastructure,
- advanced industrial corridors,
- financial and investment ecosystems,
- skilled labour availability,
- and deep manufacturing supply chains.

Maharashtra's industrial structure is characterised by strong interlinkages between:

- chemicals and plastics,
- automobiles and engineering,
- pharmaceuticals and medical manufacturing,
- electronics and precision industries,
- and export-oriented industrial activity.

The composite score analysis identifies pharmaceuticals, automobiles, chemicals, transport equipment, and plastics as Maharashtra's strongest industrial sectors

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Strong pharmaceutical and healthcare manufacturing ecosystem
291	Manufacture of motor vehicles	Major automobile manufacturing clusters in Pune, Nashik and Aurangabad
293	Manufacture of parts and accessories for motor vehicles	Deep auto-component and engineering supply-chain ecosystem

201	Manufacture of basic chemicals	Large chemical and petrochemical industrial base
202	Manufacture of chemical products	Strong downstream chemical diversification
309	Manufacture of transport equipment n.e.c.	Engineering-intensive industrial production ecosystem
222	Manufacture of plastic products	Strong plastics and packaging industries linked to chemicals and consumer manufacturing

These industries collectively demonstrate Maharashtra's strengths in:

- diversified industrial manufacturing,
- export-oriented production,
- engineering-intensive industries,
- and integrated industrial supply chains.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
261	Manufacture of electronic components	Electronics and semiconductor-linked manufacturing diversification
262	Manufacture of computers and peripheral equipment	Digital hardware and advanced manufacturing ecosystem
265	Manufacture of measuring, testing and precision instruments	Precision engineering and industrial instrumentation capabilities
325	Manufacture of medical and dental instruments	Healthcare manufacturing integration with pharma ecosystem
279	Manufacture of other electrical equipment	Expansion of industrial electrical manufacturing and EV-linked systems

These sectors deepen Maharashtra's transition toward:

- advanced manufacturing,
- precision engineering,
- healthcare manufacturing,
- and electronics-integrated industrial systems.

Industrial Linkage Model

Chemicals & Petrochemicals

↓

Plastics & Industrial Materials

↓
Electronics & Electrical Systems
↓
Automobiles & Transport Equipment
↓
Precision Engineering & Industrial Manufacturing
Simultaneously:
Pharmaceuticals
↓
Medical Devices & Healthcare Manufacturing
↓
Packaging & Export-oriented Production

Reason behind this industrial pathway

This industrial structure is realistic because Maharashtra already possesses:

- advanced industrial infrastructure,
- strong chemical and pharmaceutical ecosystems,
- globally integrated automobile manufacturing,
- engineering and precision-manufacturing capabilities,
- and export-oriented logistics networks.

The linked diversification industries therefore emerge naturally from existing industrial strengths rather than from disconnected industrial promotion strategies.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Maharashtra can continue functioning as India's leading diversified manufacturing and export-oriented industrial state. Its strengths in chemicals, automobiles, pharmaceuticals, engineering, and advanced manufacturing position the state as a central supplier of high-value industrial goods, healthcare products, transport equipment, and precision-engineered components to both national and global markets.

15. Manipur

State Industrial Overview

Manipur possesses a predominantly agro-based and resource-linked industrial structure characterised by small-scale manufacturing, handloom and apparel activities, forestry-linked industries, and decentralised MSME production systems. Due to terrain constraints and limited heavy industrial infrastructure, the state's industrial development is more suitable for labour-intensive, resource-based, and community-linked manufacturing activities.

The state's industrial ecosystem is closely associated with:

- agro-processing,
- apparel and handloom activities,
- wood-based industries,
- handicraft-linked manufacturing,
- and small-scale consumer production systems.

The composite score analysis identifies food products, apparel, wood products, and furniture as Manipur's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Agro-based processing linked to local agricultural production
141	Manufacture of wearing apparel	Handloom, textile, and labour-intensive apparel ecosystem
162	Manufacture of wood products	Forest-resource-linked manufacturing activities
310	Manufacture of furniture	Bamboo, wood, and handicraft-linked production potential

These industries reflect Manipur's comparative strengths in:

- decentralised manufacturing,
- labour-intensive production,
- traditional skill-based industries,
- and resource-linked MSME activity.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
108	Manufacture of prepared animal feeds	Livestock and poultry-sector expansion potential
170	Manufacture of paper and paper products	Bamboo and forestry-linked packaging opportunities
222	Manufacture of plastic packaging products	Packaging demand linked to food processing and MSMEs

These sectors support downstream value addition while remaining compatible with the state's resource structure and industrial scale.

Industrial Linkage Model

Agro Economy
↓
Food Processing
↓
Packaging & MSME Manufacturing
Simultaneously:
Forestry & Bamboo
↓
Wood Products & Furniture
↓
Handicraft-linked Manufacturing & Local Markets

Reason behind this industrial pathway

This industrial structure is realistic because Manipur already possesses:

- strong traditional handicraft capabilities,
- agro-based livelihoods,
- bamboo and forestry resources,
- and labour-intensive production systems.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Manipur can specialise in agro-processing, apparel, handicraft-linked manufacturing, and bamboo-based industries while supplying niche products to inter-state markets. Such a strategy can strengthen employment generation, MSME development, and sustainable industrialisation in the northeastern region.

16. Meghalaya

State Industrial Overview

Meghalaya possesses a resource-based industrial structure shaped by forestry resources, limestone reserves, agro-horticultural production, and small-scale manufacturing activities. The state's industrial ecosystem remains relatively decentralised and environmentally sensitive, making resource-linked and low-to-medium-scale manufacturing more suitable than heavy industrialisation.

Industrial activity in Meghalaya is associated with:

- mineral-based industries,
- paper and wood products,
- food processing,
- and construction-material manufacturing.

The composite score analysis identifies non-metallic mineral products, paper products, food products, and wood products as Meghalaya's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
239	Manufacture of non-metallic mineral products	Limestone and construction-material-based industrial activity
170	Manufacture of paper and paper products	Forestry-linked paper and packaging potential
107	Manufacture of food products	Agro-processing linked to horticulture and local agriculture
162	Manufacture of wood products	Forest-resource-based manufacturing activities

These industries reflect Meghalaya's strengths in:

- resource-linked industrialisation,
- decentralised manufacturing,
- and environmentally compatible production systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
110	Manufacture of beverages	Agro-horticulture and tourism-linked beverage processing
222	Manufacture of plastic products	Packaging and consumer goods support industries
310	Manufacture of furniture	Forestry-linked downstream manufacturing opportunity

Industrial Linkage Model

Forestry Resources
↓
Paper & Packaging Products
↓
Consumer Packaging & MSMEs
Simultaneously:
Mining & Limestone
↓
Construction Materials & Mineral Products
And:
Agro & Horticulture Economy
↓
Food & Beverage Processing
↓
Regional Supply Chains

Reason behind this industrial pathway

This industrial strategy is realistic because Meghalaya already possesses:

- forest resources,
- limestone reserves,
- agro-horticultural production,
- and decentralised MSME activity.

The linked diversification industries therefore support gradual value addition and sustainable industrial expansion.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Meghalaya can specialise in mineral-based products, paper and packaging industries, agro-processing, and forest-linked manufacturing while supporting sustainable regional industrialisation across northeastern India.

17. Mizoram

State Industrial Overview

Mizoram possesses a small-scale, resource-based industrial structure shaped by agriculture, forestry, bamboo resources, and labour-intensive production systems. Due to limited heavy industrial infrastructure and hilly terrain, industrial activity in the state is more compatible with decentralised manufacturing, agro-processing, handicraft-linked industries, and bamboo-based value addition.

The state's industrial ecosystem is associated with:

- food processing,
- wood and bamboo products,
- apparel and textile-related activities,
- and small-scale furniture manufacturing.

The composite score analysis identifies food products, wood products, apparel, and furniture manufacturing as Mizoram's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Agro-based processing linked to local agricultural production
162	Manufacture of wood products	Bamboo and forestry-linked manufacturing activities
141	Manufacture of wearing apparel	Labour-intensive and household-based apparel production
310	Manufacture of furniture	Bamboo and wood-resource-based furniture manufacturing

These industries reflect Mizoram's strengths in:

- labour-intensive production,
- forestry-linked manufacturing,
- small-scale MSMEs,
- and decentralised value-addition systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
108	Manufacture of prepared animal feeds	Livestock and poultry-sector expansion opportunities
170	Manufacture of paper and paper products	Bamboo-based packaging and paper manufacturing potential
222	Manufacture of packaging materials	Packaging support industries linked to food processing

Industrial Linkage Model

Forestry & Bamboo

↓

Furniture & Wood Products

↓

Packaging & Small-scale Manufacturing

Simultaneously:

Agro-based Economy

↓

Food Processing

↓

Consumer-oriented MSME Production

Reason behind this industrial pathway

This industrial structure is realistic because Mizoram already possesses:

- bamboo and forestry resources,
- labour-intensive household manufacturing systems,
- agro-based livelihoods,
- and traditional handicraft capabilities.

The linked diversification industries therefore strengthen existing economic systems while promoting sustainable industrialisation suited to the state's geography and economic structure.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Mizoram can specialise in bamboo-based industries, furniture manufacturing, agro-processing, and labour-intensive MSME production while contributing niche forest-based and agro-based products to inter-state markets across India.

18. Nagaland

State Industrial Overview

Nagaland possesses a predominantly resource-based and labour-intensive industrial structure shaped by forestry resources, agro-based livelihoods, handicrafts, textiles, and small-scale manufacturing systems. Due to the state's terrain, limited heavy-industrial infrastructure, and decentralised economic structure, industrial development is more suitable in sectors linked to traditional skills, bamboo and wood resources, food processing, and MSME-oriented production.

The state's industrial ecosystem is closely associated with:

- food processing,
- wood and bamboo products,
- apparel and textile activities,
- furniture manufacturing,
- and handicraft-linked production systems.

Industrial activity in Nagaland remains largely decentralised and community-linked, making sustainable and small-scale industrialisation more practical than capital-intensive industrial expansion.
The composite score analysis identifies food products, wood products, apparel, and furniture as Nagaland's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Agro-based processing linked to local agricultural production and horticulture
162	Manufacture of wood products	Bamboo and forestry-linked manufacturing activities
141	Manufacture of wearing apparel	Traditional textile and labour-intensive apparel ecosystem
310	Manufacture of furniture	Wood and bamboo-resource-based furniture production

These industries reflect Mizoram's strengths in:

- labour-intensive production,
- forestry-linked manufacturing,
- small-scale MSMEs,
- and decentralised value-addition systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
108	Manufacture of prepared animal feeds	Livestock and poultry-sector expansion opportunities
170	Manufacture of paper and paper products	Bamboo-based paper and packaging potential
321	Manufacture of jewellery and related articles	Handicraft-linked manufacturing and tourism-oriented artisan production

These industries support downstream value addition while remaining compatible with the state's resource structure and cultural-economic ecosystem.

Industrial Linkage Model

Forestry & Bamboo Resources
↓
Wood Products & Furniture
↓
Local Manufacturing & MSMEs
Simultaneously:
Textiles & Apparel
↓
Handicraft-linked Production
↓
Tourism-oriented Consumer Products

Reason behind this industrial pathway

This industrial strategy is realistic because Nagaland already possesses:

- strong handicraft and textile traditions,
- bamboo and forest resources,
- labour-intensive production systems,
- and tourism-linked artisan demand.

The linked diversification industries therefore strengthen existing cultural and resource-based economic systems instead of introducing unsuitable heavy-industrial models.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Nagaland can specialise in bamboo-based industries, handicraft-linked manufacturing, apparel production, and agro-processing while contributing niche artisanal and forest-based products to inter-state markets and tourism-linked value chains.

19. Odisha

State Industrial Overview

Odisha possesses one of India's strongest mineral-resource and heavy-industrial ecosystems due to its vast reserves of iron ore, coal, bauxite, chromite, and other minerals. The state has evolved as a major centre for steel production, metals, mineral processing, chemicals, and industrial infrastructure manufacturing.

Industrial regions such as Rourkela, Angul, Jharsuguda, Kalinganagar, Paradeep, and Sambalpur collectively support:

- iron and steel production,
- non-ferrous metals,
- chemicals and petrochemicals,
- heavy engineering,
- and export-oriented industrial activity.

The state's industrial ecosystem is strongly integrated with mining, port infrastructure, energy production, and large-scale manufacturing systems.

The composite score analysis identifies iron and steel, non-ferrous metals, non-metallic mineral products, and chemicals as Odisha's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
241	Manufacture of basic iron and steel	Strong mining-linked steel ecosystem and industrial infrastructure
242	Manufacture of basic precious and other non-ferrous metals	Aluminium and mineral-based industrial production capabilities
239	Manufacture of non-metallic mineral products	Construction-material and mineral-processing industries
201	Manufacture of basic chemicals	Petrochemical and industrial chemical manufacturing ecosystem

These industries collectively demonstrate Odisha's strengths in:

- mineral-based industrialisation,
- export-oriented heavy industry,
- industrial raw-material production,
- and infrastructure-supporting manufacturing.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
281	Manufacture of general-purpose machinery	Downstream engineering and industrial machinery manufacturing
271	Manufacture of electrical equipment	Power-sector and industrial-equipment-linked manufacturing
259	Manufacture of fabricated metal products	Industrial fabrication and engineering MSME ecosystem
107	Manufacture of food products	Agro-processing diversification opportunities

These sectors deepen downstream industrial value addition while reducing dependence on raw mineral extraction alone.

Industrial Linkage Model

Mining & Minerals
↓
Iron, Steel & Non-ferrous Metals
↓
Machinery & Engineering Industries
↓
Electrical Equipment & Industrial Fabrication
Simultaneously:
Coastal Economy & Agriculture
↓
Food Processing & Export-linked Manufacturing

Reason behind this industrial pathway

This industrial structure is realistic because Odisha already possesses:

- large mineral reserves,
- port infrastructure,
- heavy industrial ecosystems,
- and export-oriented industrial corridors.

The linked diversification industries therefore strengthen downstream manufacturing integration and industrial value addition.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Odisha can function as one of India's major heavy-industrial and mineral-processing states while simultaneously strengthening engineering, electrical-equipment, and fabricated-metal manufacturing. This enables the state to contribute industrial raw materials, machinery, and infrastructure-supporting products to national industrial supply chains.

20. Punjab

State Industrial Overview

Punjab possesses a diversified industrial structure shaped by agriculture, agro-processing, light engineering, machinery manufacturing, furniture production, and MSME-led industrialisation. The state has historically developed as an agricultural powerhouse while simultaneously building strong industrial capabilities in engineering goods, machinery, fabricated products, and household manufacturing.

Industrial centres such as Ludhiana, Jalandhar, Amritsar, Mohali, and Mandi Gobindgarh support:

- agro-processing industries,
- bicycle and machinery manufacturing,
- fabricated metal products,
- furniture manufacturing,
- and light engineering industries.

Punjab's industrial ecosystem is characterised by strong MSME participation and integration between agriculture and manufacturing.

The composite score analysis identifies food products, special-purpose machinery, furniture, and fabricated metal products as Punjab's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Strong agro-processing ecosystem linked to wheat, dairy, and agricultural output
282	Manufacture of special-purpose machinery	Established engineering and machinery-manufacturing base
310	Manufacture of furniture	Household and wood-based manufacturing ecosystem
259	Manufacture of fabricated metal products	Strong MSME engineering and industrial fabrication activity

These industries collectively reflect Punjab's strengths in:

- agro-industrial integration,
- engineering-based MSMEs,
- light manufacturing,
- and household-oriented industrial production.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
275	Manufacture of domestic appliances	Consumer-manufacturing expansion opportunity
293	Manufacture of auto components	Engineering and fabrication ecosystem linkage
325	Manufacture of medical and dental instruments	Precision engineering diversification opportunity

These sectors complement Punjab's existing engineering and MSME ecosystem while supporting industrial diversification.

Industrial Linkage Model

Agriculture & Agro-processing
↓
Food Manufacturing
↓
Machinery & Packaging Support Industries
Simultaneously:
Light Engineering
↓
Auto Components & Fabricated Products
↓
Domestic Equipment & Precision Manufacturing

Reason behind this industrial pathway

This industrial structure is realistic because Punjab already possesses:

- strong agricultural production,
- engineering-based MSMEs,
- skilled manufacturing labour,
- and industrial fabrication capability.

The linked diversification industries, therefore, deepen manufacturing sophistication while remaining connected to existing industrial strengths.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Punjab can evolve as a specialised agro-industrial and engineering-manufacturing state supplying processed food products, machinery, fabricated metal products, and precision-engineered consumer goods to inter-state and national supply chains.

21. Rajashthan

State Industrial Overview

Rajasthan possesses a resource-intensive industrial structure shaped by minerals, stone and ceramics industries, agro-processing, handicrafts, and tourism-linked manufacturing. The state has emerged as an important centre for construction materials, mining-based industries, furniture, and MSME manufacturing activities.

Industrial regions such as Jaipur, Udaipur, Jodhpur, Kota, Bhilwara, and Alwar support:

- mineral-based industries,
- stone and ceramic manufacturing,
- agro-processing,
- furniture production,
- and engineering-related manufacturing activities.

The state's industrial ecosystem is strongly influenced by its mineral resources, tourism economy, and decentralised manufacturing base.

The composite score analysis identifies non-metallic mineral products, non-ferrous metals, food products, and furniture as Rajasthan's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
239	Manufacture of non-metallic mineral products	Strong stone, ceramics, cement, and construction-material ecosystem
242	Manufacture of basic precious and other non-ferrous metals	Mineral-resource-driven industrial production
107	Manufacture of food products	Agro-processing linked to agriculture and regional food industries
310	Manufacture of furniture	Wood, handicraft, and interior-manufacturing ecosystem

These industries collectively demonstrate Rajasthan's strengths in:

- mineral-based manufacturing,
- construction-material industries,
- handicraft-linked production,
- and tourism-linked manufacturing demand.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
222	Manufacture of plastic products	Packaging and industrial-material diversification
281	Manufacture of machinery	Industrial equipment and engineering expansion opportunity
271	Manufacture of electrical equipment	Infrastructure and industrial manufacturing support industries

These sectors support downstream industrial diversification and strengthen industrial linkages beyond raw mineral extraction.

Industrial Linkage Model

Mining & Minerals
↓
Construction Materials & Ceramics
↓
Industrial Inputs & Infrastructure Supply Chains
Simultaneously:
Stone & Interior Industries
↓
Furniture & Handicraft Manufacturing
↓
Tourism-linked Consumer Demand

Reason behind this industrial pathway

This industrial structure is realistic because Rajasthan already possesses:

- large mineral reserves,
- construction-material manufacturing capability,
- tourism-linked consumption demand,
- and decentralised MSME production systems.

The linked diversification industries, therefore, deepen manufacturing sophistication while remaining connected to existing industrial strengths.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Punjab can evolve as a specialised agro-industrial and engineering-manufacturing state supplying processed food products, machinery, fabricated metal products, and precision-engineered consumer goods to inter-state and national supply chains.

22. Sikkim

State Industrial Overview

Sikkim possesses a relatively small but strategically specialised industrial structure shaped by pharmaceuticals, agro-processing, beverages, and environmentally compatible manufacturing. Due to its ecological sensitivity, mountainous terrain, and limited industrial land availability, the state's industrialisation pathway has evolved around high-value, low-volume industries rather than heavy manufacturing.

Industrial development in Sikkim has been supported through:

- pharmaceutical manufacturing clusters,
- organic agriculture and food processing,
- beverage production,
- and packaging-related industries.

The state's economic ecosystem is closely associated with:

- organic farming,
- tourism,
- healthcare manufacturing,
- and environmentally sustainable industrial activity.

The composite score analysis identifies pharmaceuticals, food products, beverages, and chemical products as Sikkim's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Strong pharmaceutical manufacturing ecosystem supported by industrial incentives
107	Manufacture of food products	Agro-processing linked to organic agriculture and horticulture
110	Manufacture of beverages	Beverage processing linked to agriculture and tourism demand
202	Manufacture of chemical products	Chemical and pharmaceutical support industries

These industries collectively reflect Sikkim's strengths in:

- environmentally compatible manufacturing,
- high-value healthcare industries,
- organic agro-processing,
- and niche industrial production systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments	Healthcare-manufacturing diversification linked to pharma ecosystem
170	Manufacture of paper and packaging products	Packaging demand linked to pharmaceuticals and food processing
222	Manufacture of plastic packaging products	Industrial packaging support for healthcare and agro-processing sectors

These sectors strengthen downstream value addition and industrial integration while remaining aligned with the state's ecological and economic structure.

Industrial Linkage Model

Pharmaceuticals & Chemicals
↓
Packaging & Healthcare Inputs
↓
Medical Devices & Healthcare Manufacturing
Simultaneously:
Organic Agriculture
↓
Food Processing
↓
Beverage Manufacturing & Tourism-linked Consumption

Reason behind this industrial pathway

This industrial structure is realistic because Sikkim already possesses:

- a strong pharmaceutical manufacturing base,
- organic agricultural production,
- environmentally regulated industrialisation,
- and growing healthcare-linked economic activity.

The linked diversification industries therefore deepen value addition while maintaining ecological compatibility and high-value manufacturing orientation.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Sikkim can specialise in pharmaceutical manufacturing, organic food processing, healthcare-linked products, and environmentally sustainable industrial production. Such positioning allows the state to contribute high-value niche products to national healthcare and agro-processing supply chains while maintaining ecological sustainability.

23. Tamil Nadu

State Industrial Overview

Tamil Nadu possesses one of India's largest and most diversified industrial ecosystems, with strong capabilities in automobiles, textiles, engineering, electronics, pharmaceuticals, and electrical equipment manufacturing. The state has emerged as a major manufacturing and export hub supported by industrial corridors, ports, skilled labour availability, and deep supply-chain integration.

Industrial centres such as Chennai, Coimbatore, Hosur, Tiruppur, Sriperumbudur, Madurai, and Salem collectively support:

- automobile manufacturing,
- auto-component industries,
- apparel and textile production,
- electronics manufacturing,
- pharmaceuticals,
- and electrical equipment industries.

Tamil Nadu's industrial structure is characterised by strong integration between traditional manufacturing sectors and advanced industrial diversification. The composite score analysis identifies automobiles, auto components, apparel, pharmaceuticals, and electrical equipment as Tamil Nadu's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
291	Manufacture of motor vehicles	Major automobile manufacturing ecosystem around Chennai-Hosur corridor
293	Manufacture of parts and accessories for motor vehicles	Deep auto-component and engineering supply-chain integration
141	Manufacture of wearing apparel	Strong textile and export-oriented apparel ecosystem
210	Manufacture of pharmaceuticals	Expanding pharmaceutical and healthcare manufacturing capability
271	Manufacture of electrical equipment	Strong industrial and engineering manufacturing base

These industries collectively demonstrate Tamil Nadu's strengths in:

- diversified industrial manufacturing,
- export-oriented production,
- engineering-intensive industries,
- and integrated industrial ecosystems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
261	Manufacture of electronic components	Electronics and semiconductor-linked manufacturing diversification
262	Manufacture of computers and peripheral equipment	Digital hardware manufacturing expansion
263	Manufacture of communication equipment	Telecom and electronics ecosystem integration
325	Manufacture of medical and dental instruments	Precision engineering and healthcare-manufacturing diversification

These sectors support Tamil Nadu's transition toward:

- advanced manufacturing,
- EV-linked production systems,
- electronics integration,
- and precision industrial manufacturing.

Industrial Linkage Model

Automobile Manufacturing
↓
Auto Components & Engineering
↓
Electronics & Communication Equipment
↓
EV Ecosystem & Advanced Manufacturing
Simultaneously:
Textiles & Apparel
↓
Technical Textiles
↓
Export-oriented Consumer Manufacturing

Reason behind this industrial pathway

This industrial structure is realistic because Tamil Nadu already possesses:

- globally integrated automobile manufacturing,
- strong engineering and textile ecosystems,
- electronics manufacturing capability,
- and export-oriented industrial infrastructure.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Tamil Nadu can continue functioning as one of India's leading automobile, engineering, textile, and electronics manufacturing states while simultaneously strengthening EV ecosystems, advanced electronics, and precision healthcare manufacturing for national and global supply chains.

24. Telangana

State Industrial Overview

Telangana possesses a rapidly expanding industrial ecosystem shaped by pharmaceuticals, chemicals, electronics, food processing, and digitally integrated manufacturing systems. Hyderabad has emerged as one of India's leading centres for pharmaceuticals, biotechnology, healthcare manufacturing, and technology-linked industrial activity.

The state's industrial structure is strongly associated with:

- pharmaceutical production,
- chemicals,
- electronics manufacturing,
- food processing,
- and technology-enabled industrial systems.

Industrial corridors and infrastructure around Hyderabad, Medchal, Sangareddy, and Warangal have supported rapid industrial diversification and advanced manufacturing growth.

The composite score analysis identifies pharmaceuticals, chemical products, electronics, and food products as Telangana's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Hyderabad-led pharmaceutical and biotechnology ecosystem
202	Manufacture of chemical products	Strong downstream chemical manufacturing capabilities
261	Manufacture of electronic components	Expanding electronics manufacturing and digital hardware ecosystem
107	Manufacture of food products	Agro-processing and food-manufacturing diversification

These industries collectively reflect Telangana's strengths in:

- healthcare manufacturing,
- technology-linked industrialisation,
- chemicals,
- and diversified industrial growth.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments	Healthcare-manufacturing diversification linked to pharma ecosystem
279	Manufacture of other electrical equipment	Industrial and electronics manufacturing expansion
262	Manufacture of computer hardware	Technology and digital-manufacturing integration

These sectors support Telangana's transition toward advanced manufacturing and digitally integrated industrial ecosystems.

Industrial Linkage Model

Pharmaceuticals
↓
Chemicals & Healthcare Inputs
↓
Medical Devices & Healthcare Manufacturing
Simultaneously:
Electronics Manufacturing
↓
Electrical Equipment
↓
Digital Manufacturing Ecosystem

Reason behind this industrial pathway

This industrial structure is realistic because Telangana already possesses:

- one of India's strongest pharmaceutical ecosystems,
- expanding electronics manufacturing capability,
- technology infrastructure,
- and advanced industrial policy support.

The linked diversification industries therefore strengthen downstream value addition and industrial sophistication.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Telangana can evolve as a specialised pharmaceutical, electronics, and digitally integrated manufacturing state while contributing healthcare products, electronics components, and technology-linked industrial goods to national and global supply chains.

25. Tripura

State Industrial Overview

Tripura possesses a small-scale, resource-based industrial structure shaped by agro-processing, bamboo and forestry resources, beverages, and furniture manufacturing. Due to geographical constraints and limited heavy-industrial infrastructure, the state's industrial development is more compatible with decentralised MSME-led manufacturing and resource-linked value addition.

The state's industrial ecosystem is closely linked with:

- food processing,
- bamboo and wood-based industries,
- beverages,
- and furniture manufacturing.
-

Tripura also possesses potential for export-oriented niche production due to its proximity to Bangladesh and broader northeastern trade networks.

The composite score analysis identifies food products, wood products, beverages, and furniture manufacturing as Tripura's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
107	Manufacture of food products	Agro-processing linked to agriculture and horticulture
162	Manufacture of wood products	Bamboo and forestry-linked manufacturing activities
110	Manufacture of beverages	Agro-based beverage production and regional consumption demand
310	Manufacture of furniture	Bamboo and wood-resource-based furniture manufacturing

These industries reflect Tripura's strengths in:

- resource-linked manufacturing,
- labour-intensive MSMEs,
- bamboo-based industries,

and decentralised production systems

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
108	Manufacture of prepared animal feeds108	Livestock and poultry-sector expansion opportunities
170	Manufacture of paper and paper products	Bamboo-based paper and packaging manufacturing potential
222	Manufacture of packaging materials	Packaging demand linked to food processing and beverages

These sectors support downstream value addition and strengthen agro-processing-linked industrial supply chains.

Industrial Linkage Model

Bamboo & Forestry Resources
↓
Furniture & Wood Products
↓
Packaging & Small-scale Manufacturing
Simultaneously:
Agro-processing
↓
Food & Beverage Manufacturing
↓
Export-oriented Niche Production

Reason behind this industrial pathway

This industrial structure is realistic because Tripura already possesses:

- bamboo and forestry resources,
- agro-based production systems,
- labour-intensive MSMEs,
- and proximity to regional trade routes.

The linked diversification industries therefore strengthen sustainable industrialisation while supporting niche export-oriented production systems.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Tripura can specialise in bamboo-based industries, agro-processing, beverages, and packaging-linked MSME manufacturing while contributing niche forest-based and agro-based products to northeastern and inter-state supply chains across India.

26. Uttar Pradesh

State Industrial Overview

Uttar Pradesh possesses one of India's largest and most diversified industrial ecosystems due to its vast population base, agricultural production, labour availability, expanding industrial corridors, and large domestic market. The state's industrial structure combines agro-processing, textiles and apparel, furniture manufacturing, pharmaceuticals, MSME-led production systems, and emerging engineering industries.

Industrial regions such as Noida, Ghaziabad, Kanpur, Lucknow, Agra, Varanasi, Meerut, and Gorakhpur collectively support:

- apparel and textile manufacturing,
- food processing,
- pharmaceuticals,
- paper and packaging industries,
- furniture manufacturing,
- and expanding engineering-based industries.

The state's industrial ecosystem is characterised by strong integration between labour-intensive manufacturing and consumer-market-oriented industrial production.

The composite score analysis identifies apparel, food products, paper products, furniture, and pharmaceuticals as Uttar Pradesh's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
141	Manufacture of wearing apparel	Large labour-intensive textile and garment manufacturing ecosystem
107	Manufacture of food products	Agro-processing linked to wheat, sugarcane, dairy, and horticulture production
170	Manufacture of paper and paper products	Packaging and agro-linked industrial ecosystem
310	Manufacture of furniture	Wood-based MSME manufacturing and household production systems
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Expanding pharmaceutical manufacturing capability

These industries collectively reflect Uttar Pradesh's strengths in:

- labour-intensive manufacturing,
- agro-industrial integration,
- MSME-based industrialisation,
- and consumer-oriented production systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
293	Manufacture of parts and accessories for motor vehicles	Industrial diversification linked to NCR manufacturing ecosystem
271	Manufacture of electrical equipment	Infrastructure and industrial-manufacturing expansion
325	Manufacture of medical and dental instruments	Healthcare-manufacturing diversification linked to pharma ecosystem
222	Manufacture of plastic products	Packaging and industrial-material demand

These sectors support industrial upgrading while complementing the state's existing labour-intensive and consumer-manufacturing ecosystem.

Industrial Linkage Model

Agro-processing
↓
Food Manufacturing
↓
Paper, Packaging & Consumer Products
Simultaneously:
Textiles & Apparel
↓
Garment Manufacturing
↓
Export-oriented Labour-intensive Production
And:
Electronics & Engineering Expansion
↓

Auto Components & Electrical Equipment
↓
Industrial Diversification

Reason behind this industrial pathway

This industrial structure is realistic because Uttar Pradesh already possesses:

- a large labour force,
- extensive agricultural production,
- strong MSME participation,
- expanding industrial corridors.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Uttar Pradesh can evolve as a major labour-intensive manufacturing and agro-industrial state while simultaneously strengthening pharmaceuticals, packaging, engineering goods, and electrical-equipment industries. Such positioning enables the state to contribute consumer goods, processed food products, pharmaceuticals, and industrial components to national supply chains.

27. Uttarakhand

State Industrial Overview

Uttarakhand possesses a hill-state industrial structure shaped by pharmaceuticals, food processing, beverages, packaging industries, and environmentally compatible manufacturing activities. Industrial development in the state has been concentrated around cluster-based industrialisation supported by tax incentives, logistics connectivity with northern India, and agro-horticultural resources.

Industrial regions such as Haridwar, Dehradun, Rudrapur, Pantnagar, and Kashipur support:

- pharmaceutical manufacturing,
- food and beverage industries,
- packaging and paper products,
- and small-to-medium-scale manufacturing activities.

The state's industrial ecosystem is strongly associated with:

- healthcare manufacturing,
- agro-processing,
- packaging industries,
- and environmentally sustainable industrial activity.

The composite score analysis identifies pharmaceuticals, food products, beverages, and packaging industries as Uttarakhand's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
210	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Strong pharmaceutical manufacturing ecosystem in industrial clusters
107	Manufacture of food products	Agro-processing linked to horticulture and regional agricultural production
110	Manufacture of beverages	Beverage manufacturing linked to tourism and agro-based raw materials
170	Manufacture of paper and packaging products	Packaging demand linked to pharmaceuticals and food industries

These industries collectively reflect Uttarakhand's strengths in:

- healthcare manufacturing,
- agro-processing,
- environmentally compatible industrialisation,
- and packaging-linked manufacturing systems.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments	Healthcare-manufacturing diversification linked to pharma ecosystem
222	Manufacture of plastic products	Packaging and industrial-material support industries
310	Manufacture of furniture	Tourism and forestry-linked manufacturing opportunities

These sectors strengthen downstream industrial integration while remaining aligned with the state's ecological and industrial structure.

Industrial Linkage Model

Pharmaceuticals
↓
Packaging & Industrial Inputs
↓
Medical Devices & Healthcare Manufacturing
Simultaneously:
Horticulture & Agriculture
↓
Food & Beverage Processing
↓
Tourism-linked Consumption & Regional Markets

Reason behind this industrial pathway

This industrial structure is realistic because Uttarakhand already possesses:

- strong pharmaceutical manufacturing capability,
- agro-horticultural resources,
- tourism-linked demand,
- and environmentally sensitive industrial planning.

The linked diversification industries, therefore, support sustainable industrialisation and higher-value manufacturing integration.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, Uttarakhand can specialise in pharmaceuticals, healthcare-linked manufacturing, food processing, and packaging industries while contributing high-value healthcare products and agro-processed goods to northern India's industrial and consumer supply chains.

28. West Bengal

State Industrial Overview

West Bengal possesses a historically significant and diversified industrial ecosystem shaped by ports, chemicals, engineering industries, textiles, food processing, and MSME manufacturing activities. The state's strategic location, port infrastructure, skilled labour availability, and historical industrial base have enabled it to maintain strong manufacturing linkages across eastern India.

Industrial centres such as Kolkata, Howrah, Durgapur, Haldia, Asansol, and Siliguri collectively support:

- chemicals and petrochemicals,
- food processing,
- apparel and textiles,
- fabricated metal products,
- and packaging-related industries.

The state's industrial ecosystem is characterised by strong integration between manufacturing, logistics, port activity, and export-oriented industrial systems.

The composite score analysis identifies paper products, food products, apparel, chemicals, and fabricated metal products as West Bengal's strongest industrial sectors.

Existing Industrial Strengths (Data-Driven Findings)

NIC Code	Industry	Pillars of Existing Strength
170	Manufacture of paper and paper products	Strong packaging and industrial paper ecosystem
107	Manufacture of food products	Agro-processing linked to rice, tea, fisheries, and horticulture
141	Manufacture of wearing apparel	Labour-intensive textile and apparel manufacturing ecosystem
201	Manufacture of basic chemicals	Haldia and industrial chemical manufacturing ecosystem
259	Manufacture of fabricated metal products	Engineering and industrial fabrication industries

These industries collectively reflect West Bengal's strengths in:

- port-linked manufacturing,
- chemicals and fabrication,
- labour-intensive industrial production,
- and packaging-linked industries.

Strategically Linked Diversification Industries

NIC Code	Industry	Strategic Rationale
325	Manufacture of medical and dental instruments	Healthcare-manufacturing diversification opportunities
271	Manufacture of electrical equipment	Industrial engineering and infrastructure-linked manufacturing
222	Manufacture of plastic products	Packaging and consumer-industrial support industries
331	Repair and installation of machinery and equipment	Port-linked industrial servicing and maintenance ecosystem

These sectors strengthen downstream industrial value addition and expand manufacturing diversification.

Industrial Linkage Model

Port Economy & Chemicals
↓
Industrial Fabrication & Engineering
↓
Electrical Equipment & Industrial Services
Simultaneously:
Textiles & Agro-processing
↓
Food Manufacturing & Apparel
↓
Packaging & Export-oriented Manufacturing

Reason behind this industrial pathway

This industrial structure is realistic because West Bengal already possesses:

- port infrastructure,
- chemical manufacturing capability,
- engineering and fabrication industries,
- labour-intensive manufacturing systems,
- and export-oriented industrial connectivity.

The linked diversification industries therefore deepen industrial integration and strengthen downstream manufacturing ecosystems.

Strategic Outlook under Cooperative Federalism

Under cooperative federalism, West Bengal can function as eastern India's chemicals, packaging, engineering, and agro-industrial manufacturing hub while contributing fabricated products, processed food goods, electrical equipment, and export-oriented manufacturing capabilities to national and regional supply chains.

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INDUSTRIAL COOPERATIVE FEDERALISM, SPECIALISATION, AND INTER-STATE COMPLEMENTARITY OF THE 28 STATES OF INDIA

Findings & Analysis: Cooperative Industrial Federalism and Inter-State Industrial Complementarity in India

India's industrial development has historically been characterised by a competitive federal structure in which states attempt to attract similar industries through incentives, subsidies, industrial parks, tax concessions, and infrastructure support. While such competition has contributed to industrial expansion, it has also created significant duplication of industrial activity across states. Multiple states simultaneously attempt to become hubs for automobiles, electronics, pharmaceuticals, petrochemicals, textiles, and engineering industries, often resulting in fragmented industrial ecosystems, inefficient allocation of public resources, and weakened inter-state industrial coordination.

The findings of this study suggest that a more sustainable and nationally efficient industrial strategy lies in the development of Cooperative Industrial Federalism, where states specialise according to their comparative industrial strengths while simultaneously integrating with other states through supply chains, value chains, logistics systems, and production complementarities.

The objective of this concluding chapter is to demonstrate how states with complementary industrial structures can work together to create integrated regional industrial ecosystems that strengthen:

- national manufacturing capability,
- export competitiveness,
- balanced regional development,
- employment generation,
- and long-term industrial resilience.

Concept of Cooperative Industrial Complementarity

Industrial complementarity refers to a situation where industries across different states are not directly competing with each other but instead function as interconnected stages within a broader production ecosystem.

Under this framework:

- one state may specialise in raw materials,
- another in intermediate manufacturing,
- another in component production,
- and another in final assembly and exports

Such integration creates:

- industrial efficiency,
- economies of scale,
- reduced duplication,
- supply-chain stability,
- and stronger domestic value chains.

Instead of every state attempting to manufacture the same products independently, states become specialised nodes within a coordinated national industrial system.

1.Gujarat–Maharashtra–Karnataka–Tamil Nadu Industrial Corridor: India's Advanced Manufacturing and Technology Corridor

One of the strongest examples of potential industrial complementarity identified in this study is the western and southern industrial belt consisting of:

- Gujarat,
- Maharashtra,
- Karnataka,
- and Tamil Nadu.

Each state possesses distinct industrial strengths that can function as sequential components within a larger manufacturing value chain.

Industrial Specialisation Structure

State	Core Strength
Gujarat	Petrochemicals, chemical, plastics
Maharashtra	Automobiles, transport equipment, engineering
Karnataka	Electronics, precision systems, aerospace
Tamil Nadu	EVs, electronics assembly, auto components

Proposed Cooperative Industrial Model

Gujarat

Gujarat's petrochemical and chemical ecosystem can supply:

- industrial chemicals,
- polymers,
- plastics,
- and synthetic materials

to downstream industries in Maharashtra and Tamil Nadu.

Maharashtra

Maharashtra's engineering and automobile ecosystem can convert these intermediate industrial inputs into:

- automobiles,
- transport equipment,
- industrial machinery,
- and engineering systems.

Karnataka

Karnataka can specialise in:

- electronics,
- semiconductor-linked systems,
- embedded technologies,
- aerospace electronics,
- and precision instruments.

Tamil Nadu

Tamil Nadu can function as:

- a large-scale EV assembly,
- auto-component,
- and export manufacturing hub.

Case Study: Automobile and EV Ecosystem

Production Stage	State
Petrochemicals & battery materials	Gujarat
Vehicle chassis & transport systems	Maharashtra
Embedded electronics & control systems	Karnataka
Final EV assembly & exports	Tamil Nadu

Such coordination would reduce duplication while increasing India's global competitiveness in electric mobility manufacturing.

2.Odisha–Jharkhand–Chhattisgarh Industrial Resource Corridor: India's Heavy Industrial and Mineral Manufacturing Belt

Another major complementary industrial structure identified in this study consists of:

- Odisha,
- Jharkhand,
- and Chhattisgarh.
-

These states collectively possess some of India's largest mineral reserves and heavy industrial ecosystems.

Industrial Specialisation Structure

State	Core Strength
Odisha	Minerals, metals, chemicals
Jharkhand	Steel, machinery, engineering
Chhattisgarh	Electrical equipment, industrial materials

Proposed Cooperative Industrial Model

Odisha

Odisha can specialise in:

- mining,
- mineral processing,
- non-ferrous metals,
- and industrial chemicals.

Jharkhand

Jharkhand can specialise in:

- steel manufacturing,
- heavy machinery,
- industrial engineering,
- and fabricated components.

Chhattisgarh

Chhattisgarh can focus on:

- electrical equipment,
- industrial systems,
- power infrastructure products,
- and industrial materials.

Case Study: National Infrastructure Supply Chain

The integrated production system could function as:

Mining
↓
Metal Processing
↓
Steel Manufacturing
↓
Machinery Production
↓
Electrical Equipment
↓
Infrastructure Development

This creates:

- stronger domestic industrial supply chains,
- reduced import dependence,
- and greater value addition within India.

3.Punjab–Haryana–Uttar Pradesh Agro-Industrial Corridor: Labour-Intensive and Consumer Manufacturing Ecosystem

Northern India presents strong opportunities for cooperative industrial integration between:

- Punjab,
- Haryana,
- and Uttar Pradesh.

Industrial Specialisation Structure

State	Core Strength
Punjab	Agro-processing, machinery
Haryana	Auto components, engineering
Uttar Pradesh	Apparel, consumer manufacturing, pharmaceuticals

Proposed Cooperative Industrial Model

Punjab

Punjab can specialise in:

- food processing,
- agricultural machinery,
- and agro-industrial systems.

Haryana

Haryana can focus on:

- engineering,
- automobile components,
- industrial services,
- and industrial recycling systems.

Uttar Pradesh

Uttar Pradesh can function as:

- a labour-intensive manufacturing hub,
- apparel and furniture producer,
- and pharmaceutical manufacturing centre.

Case Study: Agro-to-Consumer Manufacturing Chain

Agriculture
↓
Food Processing
↓
Packaging & Machinery
↓
Consumer Manufacturing
↓
Domestic and Export Markets

This integrated system would strengthen:

- rural industrialisation,
- MSME development,
- and employment generation across northern India.

4.Northeast India as an Integrated Regional Industrial Ecosystem

The study finds that many northeastern states currently exhibit overlapping industrial structures centred around:

- food processing,
- wood products,
- furniture,
- bamboo products,
- and small-scale manufacturing.

Instead of each state attempting identical industrialisation, regional differentiation can create stronger industrial coordination.

Proposed Regional Industrial Roles

State	Proposed Specialisation
Arunachal Pradesh	Forestry and hydropower
Assam	Petroleum refining and packaging
Nagaland	Handicrafts and tourism-linked manufacturing
Mizoram	Bamboo processing
Tripura	Furniture and packaging
Meghalaya	Mineral products and construction materials

Benefits of Regional NE States Coordination

Such a coordinated structure would:

- create economies of scale,
- improve regional trade,
- reduce industrial duplication,
- strengthen market access,
- and increase employment opportunities.

Lessons from International Industrial Models

The concept of cooperative industrial specialisation is not unique to India and has been successfully implemented globally.

1. Germany's Regional Industrial Specialisation

Germany's industrial system is based on regionally specialised manufacturing clusters:

- Bavaria specialises in automobiles and engineering,
- Baden-Württemberg in precision machinery,
- North Rhine-Westphalia in chemicals and industrial manufacturing.

These regions cooperate through integrated supply chains rather than competing identically.

2. China's Coastal Manufacturing Clusters

China's industrial rise was supported through regional industrial differentiation:

- Shenzhen specialised in electronics,
- Guangzhou in manufacturing assembly,
- Shanghai in finance and advanced manufacturing,
- Tianjin in heavy industry and ports.

This created globally integrated production ecosystems.

3. Japan's Industrial Production Networks

Japan developed strong industrial coordination between regions specialising in:

- components,
- precision systems,
- automobiles,
- electronics,
- and export logistics.

This strengthened national industrial efficiency and export competitiveness.

Policy Recommendations

Based on the findings of this study, the following policy recommendations are proposed:

1. Inter-State Industrial Coordination Councils
States with complementary industries should establish formal coordination mechanisms for:

- industrial planning,
- logistics integration,
- and supply-chain development

2. National Industrial Value-Chain Mapping
The Government of India should identify:

- which states are best suited for raw materials,
- intermediate manufacturing,
- component production,
- and final assembly.

3. Reduction of Industrial Duplication
States should avoid excessive duplication of:

- semiconductor parks,
- EV clusters,
- chemical corridors,
- and identical industrial incentives.

4. Regional Production Corridors
Industrial policies should support:

- integrated regional manufacturing systems,
- rather than isolated state-level industrialisation.

5. MSME Integration into Inter-State Supply Chains
Smaller industries should be linked into larger national production ecosystems to improve:

- productivity,
- market access,
- and industrial resilience.

Conclusion

This study demonstrates that India's future industrial growth cannot rely solely on competitive state-led industrialisation where every state attempts to develop identical industries simultaneously. Such an approach creates duplication, fragmented industrial ecosystems, inefficient resource allocation, and unhealthy competition for investments.

Instead, the findings strongly support the development of a Cooperative Industrial Federalism framework in which states specialise according to their comparative strengths while integrating through national production systems, industrial corridors, and supply-chain complementarities.

The study identifies multiple examples where states can function not as competitors, but as interdependent industrial partners:

- Gujarat–Maharashtra–Karnataka–Tamil Nadu as an advanced manufacturing corridor,
- Odisha–Jharkhand–Chhattisgarh as a heavy-industrial ecosystem,
- Punjab–Haryana–Uttar Pradesh as an agro-industrial and consumer-manufacturing network,
- and northeastern states as a coordinated resource-based industrial region.

Such an approach can:

- strengthen India's manufacturing competitiveness,
- improve industrial efficiency,
- generate balanced regional development,
- promote employment,
- reduce regional disparities,
- and build resilient domestic supply chains.

Ultimately, the transition from "competitive duplication federalism" to "cooperative industrial federalism" may become one of the most important strategic pathways for India's long-term industrial transformation and global economic positioning.

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This report demonstrates how India can move toward Cooperative Industrial Federalism by identifying State-wise industrial strengths, strategic specialisation opportunities, and inter-state manufacturing linkages that can strengthen national productivity, exports, industrial efficiency, and balanced regional development.