

Uttar Pradesh: Strategic, Economic and Industrial Profile

Dr. Sunil Kumar

Introduction

Uttar Pradesh occupies a distinctive position in the political, demographic, economic, industrial and strategic geography of India. With its large population, extensive geographical area, diversified economic structure, substantial labour force, expanding infrastructure and proximity to strategically important regions, the state constitutes one of the principal pillars of India's national development. Its significance, however, extends beyond demographic or economic size. The state's geographical location, established industrial centres, defence-related institutions, expanding transportation infrastructure and emerging aerospace and defence ecosystem have increasingly positioned Uttar Pradesh as an important component of India's defence-industrial strategy.

The transformation of Uttar Pradesh from a predominantly agrarian economy towards a more diversified economic and industrial structure has acquired particular significance during the last decade. Traditional sectors such as agriculture, textiles, leather, handicrafts, food processing and sugar continue to play an important role, while engineering, electronics, information technology, automobiles, logistics, aerospace and defence manufacturing are becoming increasingly important. The state's large Micro, Small and Medium Enterprise (MSME) base provides an extensive network of potential suppliers and ancillary manufacturers for emerging industries.

The defence-industrial dimension of this transformation is particularly significant. In 2018, the Government of India announced the establishment of two Defence Industrial Corridors, one in Uttar Pradesh and the other in Tamil Nadu, with the broader objective of promoting indigenous defence production,

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reducing import dependence and strengthening India's defence manufacturing ecosystem. Uttar Pradesh Defence Industrial Corridor (UPDIC) is planned across six nodes—Lucknow, Kanpur, Jhansi, Agra, Aligarh and Chitrakoot.

The significance of the UPDIC lies not merely in the creation of industrial land or individual defence factories. Its larger objective is to develop an integrated ecosystem involving defence manufacturers, MSMEs, research institutions, Centres of Excellence, skill-development institutions, testing facilities, logistics networks and technology providers. The official UPDIC framework identifies Centres of Excellence in collaboration with IIT Kanpur and IIT-BHU and envisages manufacturing and technology development as complementary components of the corridor.

The economic scale of Uttar Pradesh further strengthens the importance of this initiative. The 2025–26 state budget projected the Gross State Domestic Product (GSDP) at approximately ₹30.78 lakh crore at current prices, representing a projected growth of about 12% over the revised estimate for 2024–25. The state's economic structure is also becoming increasingly diversified, with manufacturing and services gaining importance alongside agriculture.

Thus, the emergence of Uttar Pradesh as a defence manufacturing centre should be understood within the broader framework of economic transformation, infrastructure development, industrial policy, technological advancement and national security.

This chapter examines the geographical, strategic, demographic, economic, industrial, infrastructural and institutional foundations of Uttar Pradesh's emerging defence-industrial ecosystem. It provides the broader context necessary for understanding the state's evolving role in India's defence manufacturing landscape and sets the foundation for subsequent chapters on defence-industrial policy, the Uttar Pradesh Defence Industrial Corridor, investment, technology, MSMEs, employment and prospects.

Geographical Profile of Uttar Pradesh

Uttar Pradesh is situated in northern India and occupies a strategically important position in the Indo-Gangetic plains. The state shares international boundaries with Nepal and has extensive inter-state connectivity with Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, Rajasthan, Haryana, Uttarakhand and Delhi. Its geographical location gives Uttar Pradesh access to several major economic regions of India. The state is connected to the National Capital Region in the west, the central Indian region through Bundelkhand and the eastern Indian market through Purvanchal. This geographical position makes it an important link between northern, central and eastern India.

The physical geography of Uttar Pradesh can broadly be divided into several regions, including:

1. Western Uttar Pradesh;
2. Central Uttar Pradesh;

3. Eastern Uttar Pradesh; and
4. Bundelkhand.

Each region has a distinctive economic and industrial profile. Western Uttar Pradesh is relatively more industrialised and closely integrated with the National Capital Region. Cities such as Agra, Aligarh and the surrounding industrial areas benefit from their proximity to major markets and transportation networks.

Central Uttar Pradesh contains major administrative and industrial centres such as Lucknow and Kanpur. The region also has important educational and research institutions and has become increasingly significant for technology-intensive industries.

Eastern Uttar Pradesh has a large population and labour force and is witnessing growing infrastructure and industrial connectivity. The expansion of the Purvanchal Expressway and associated infrastructure has strengthened the economic integration of the region.

Bundelkhand has historically faced relatively lower levels of industrialisation, but the development of the Bundelkhand Expressway and the Jhansi and Chitrakoot nodes of the Defence Industrial Corridor is creating new possibilities for industrial transformation.

This geographical diversity is important from the perspective of defence industrialisation because it enables the development of a geographically distributed manufacturing network rather than excessive concentration in a single urban-industrial centre.

Strategic Geography of Uttar Pradesh

The geographical position of Uttar Pradesh gives it strategic importance within India's national security architecture. The state lies close to India's northern frontier and is connected with major military, administrative and economic centres. Its proximity to the national capital provides access to the central institutions of governance and defence policy, while its eastern and central connectivity provides access to other strategically important parts of the country. From the perspective of defence manufacturing, location matters because defence production requires access to transport networks, availability of industrial land, skilled manpower, access to markets, logistics facilities, research institutions, testing infrastructure, and connectivity with defence establishments. Uttar Pradesh possesses many of these characteristics. The strategic importance of the state is further enhanced by its extensive expressway network. The UPDIC is supported by major transport corridors including the Yamuna Expressway, Agra–Lucknow Expressway, Purvanchal Expressway, Bundelkhand Expressway, Gorakhpur Link Expressway and Ganga Expressway. This combination of geographical location and transportation infrastructure creates the possibility of connecting defence manufacturing clusters with national markets, ports, airports, military establishments and other industrial centres.

Demographic Profile and Human Capital

The demographic scale of Uttar Pradesh represents both an opportunity and a developmental challenge. A large population creates a substantial domestic market and a large potential labour force. For conventional industries, this can provide a major advantage. For defence industries, however, population size alone is insufficient. Modern defence production requires highly skilled engineers, technicians, scientists, software professionals, designers and specialised manufacturing workers. The transition towards technologically sophisticated defence production therefore requires investment in human capital. The defence-industrial ecosystem requires expertise in areas such as mechanical engineering, electrical and electronics engineering, aerospace engineering, materials science, metallurgy, computer science, artificial intelligence, robotics, cybersecurity, embedded systems, precision manufacturing, quality control, systems engineering, and project management.

Uttar Pradesh has a broad institutional base from which such human capital can be developed. Universities, engineering institutions, polytechnics, Industrial Training Institutes (ITIs) and research institutions provide a foundation for skill formation. Institutions such as IIT Kanpur and IIT-BHU are particularly relevant to technology development and research. The UPDIC framework has sought to connect academic institutions with defence-industrial requirements through Centres of Excellence.

Thus, the state's demographic advantage needs to be converted into a human-capital advantage through technical education, vocational training, industrial apprenticeships, research opportunities and continuous skill upgrading.

Economic Profile

The economy of Uttar Pradesh has historically been characterised by the importance of agriculture, but it has progressively diversified into manufacturing and services. The 2025–26 Budget projected Uttar Pradesh's GSDP at approximately ₹30.77 lakh crore at current prices, with an estimated growth of 12% over the revised estimate for 2024–25.

Available economic estimates also demonstrate the growing importance of manufacturing and services. According to the analysis of the 2025–26 budget, agriculture and manufacturing each accounted for approximately 27% of the state's economy at current prices in 2023–24, while services accounted for approximately 46%. Manufacturing was estimated to have grown by about 13% at constant prices in 2023–24. This structural transformation has important implications for defence industrialisation.

A modern defence industry cannot exist independently of the wider economy. It depends upon engineering industries, metal industries, electronics, software, chemicals, automobile manufacturing, logistics, financial services, research and development, telecommunications, and specialised professional services.

Therefore, the broader diversification of Uttar Pradesh's economy increases the potential for developing a sophisticated defence-industrial ecosystem.

Economic Transformation and Industrialisation

Industrialisation is central to the transformation of Uttar Pradesh's economy. Historically, major industrial centres such as Kanpur, Agra, Aligarh, Moradabad, Firozabad, Varanasi and Ghaziabad developed specialised industrial clusters. These include leather, brassware, glass, textiles, carpets, handicrafts, engineering products and other manufacturing activities. The challenge in the twenty-first century is to connect these traditional capabilities with advanced manufacturing. Defence industrialisation provides one possible pathway for such technological upgrading. For example: Traditional Engineering to Precision Engineering, Advanced Manufacturing, Defence Components, Defence Systems. Similarly, Electronics Manufacturing to Embedded Systems, Sensors, Communication Equipment, Defence Electronics. The same transformation can take place in automobiles, software, metallurgy, chemicals and other sectors. Thus, defence industrialisation can act as a catalyst for broader industrial upgrading.

Manufacturing Base of Uttar Pradesh

Uttar Pradesh has a diversified manufacturing structure. Traditional industries remain important, but newer sectors are increasingly contributing to industrial growth. Important industrial activities include textiles and garments, leather and footwear, food processing, sugar, carpets, handicrafts, glass, metal products, engineering, automobiles and components, electronics, pharmaceuticals, information technology, and aerospace and defence.

This industrial diversity creates opportunities for cross-sectoral integration. For instance, the automobile industry can provide expertise in vehicle manufacturing that can potentially support the development of military vehicles. Electronics industries can contribute to communication and sensor technologies. Engineering firms can manufacture precision components. Software companies can support command, control and information systems. The defence industry therefore acts as an industrial multiplier, because its requirements extend across multiple sectors.

Region/City	Major Industrial Capability	Potential Defence Linkage
Kanpur	Leather, engineering, defence-related manufacturing	Defence equipment, components
Aligarh	Locks, hardware, engineering	Precision components

Agra	Footwear, engineering, manufacturing	Components and ancillary industries
Ghaziabad	Engineering, electronics, manufacturing	Defence components
Firozabad	Glass	Specialised glass/material applications
Moradabad	Metal products	Metal components
Lucknow	IT, engineering, aerospace/defence ecosystem	Defence technology, systems
Jhansi	Engineering and emerging industrial base	Defence manufacturing
Chitrakoot	Emerging industrial region	Defence and strategic manufacturing

MSME Ecosystem

Micro, Small and Medium Enterprises (MSMEs) are among the most important components of Uttar Pradesh's industrial economy. Recent state-level information places the number of MSMEs in the state at around 96 lakh units, demonstrating the enormous scale of the state's small-enterprise ecosystem.

For defence industrialisation, MSMEs are particularly important because large defence companies generally depend upon extensive supplier networks. Components, precision parts, electronic systems, software, fabricated structures, testing services and maintenance-related products can be produced by specialised smaller firms.

The integration of MSMEs into the UP Defence Industrial Corridor can therefore produce a multiplier effect. Large anchor companies may create direct employment and investment, while smaller firms can benefit through vendor development and supply-chain opportunities.

Infrastructure and Connectivity

Infrastructure is one of the most important determinants of industrial competitiveness. Uttar Pradesh has invested significantly in expressways and other transportation infrastructure. The state has developed an extensive expressway network connecting major regions and industrial centres.

The UP Defence Industrial Corridor is strategically linked with major expressways. According to UPEIDA, the six nodes are supported by the Yamuna Expressway, Agra–Lucknow Expressway, Purvanchal Expressway, Bundelkhand Expressway, Gorakhpur Link Expressway and Ganga Expressway. The infrastructure advantage has several implications: Reduction in transportation time, improved movement of heavy industrial equipment, better

connectivity between suppliers and manufacturers, improved access to airports and railway networks, greater attractiveness for private investment, and integration of relatively less industrialised regions with major economic centres. For defence manufacturing, this infrastructure can support the development of distributed supply chains across the state.

Existing Defence and Strategic Industrial Base

The emergence of the UP Defence Industrial Corridor does not represent the beginning of defence manufacturing in Uttar Pradesh. The state already has a historical defence-industrial presence. Kanpur has long been associated with defence-related manufacturing and engineering activities. Lucknow has an important administrative and technological ecosystem. Other locations have also hosted defence-related production and institutional activities.

The state's existing defence ecosystem includes public-sector and government-supported industrial facilities. The official UPDIC framework identifies existing defence capabilities as one of the foundations upon which the new defence-industrial ecosystem can be developed.

This existing industrial base offers several advantages: a skilled workforce, supplier networks, institutional knowledge, industrial infrastructure, defence-related experience, and potential for technology and skill transfer. The challenge is to connect this legacy infrastructure with the new generation of private-sector and technology-driven defence manufacturing.

Uttar Pradesh Defence Industrial Corridor

The Uttar Pradesh Defence Industrial Corridor constitutes the central pillar of the state's contemporary defence-industrial strategy. The Government of India announced the creation of Defence Industrial Corridors in Uttar Pradesh and Tamil Nadu in 2018. Their broad objective was to encourage indigenous defence production, attract investment, generate employment and reduce dependence on imports.

The UPDIC consists of six nodes: 1. Lucknow, 2. Kanpur, 3. Jhansi, 4. Agra, 5. Aligarh, 6. Chitrakoot. The nodes extend across different geographical regions of Uttar Pradesh and are connected to major transport corridors.

The project is being implemented through UPEIDA as the nodal state agency. The official UPDIC framework envisages defence manufacturing, aerospace production, MSME participation, common facility centres, Centres of Excellence, skill-development centres, research and development, technology development, and investment facilitation. Thus, the UPDIC should be understood as an industrial ecosystem rather than merely an industrial corridor.

Policy Framework for Aerospace and Defence

Policy support is essential for the development of a defence-industrial ecosystem. Uttar Pradesh introduced its Defence and Aerospace Units and Employment Promotion Policy in 2018. The policy was subsequently amended, and the state has now introduced the Uttar Pradesh Aerospace and Defence Unit and Employment Promotion Policy–2024.

The official UPDIC website lists the 2024 policy and its implementation framework, including the Standard Operating Procedure issued in February 2026. The evolution from the 2018 policy towards the 2024 framework demonstrates that the state's approach is moving from initial investment attraction towards ecosystem development. The policy's long-term success, however, will depend on effective implementation.

Conclusion

Uttar Pradesh possesses a unique combination of geographical, demographic, economic, industrial and strategic advantages that provides a strong foundation for defence industrialisation. Its large domestic market and labour force, diversified industrial structure, extensive MSME ecosystem, growing infrastructure, strategic location and existing defence-related capabilities create favourable conditions for the development of an integrated aerospace and defence manufacturing ecosystem.

The state's economic scale is also expanding. The 2025–26 budget projected GSDP at approximately ₹30.78 lakh crore at current prices, while manufacturing and services have become increasingly important components of the economic structure.

The state's more than 96 lakh MSMEs represent another important foundation for industrial development and provide substantial opportunities for supplier development and employment generation.

The Uttar Pradesh Defence Industrial Corridor adds a strategic dimension to this industrial transformation. Its six nodes—Lucknow, Kanpur, Jhansi, Agra, Aligarh and Chitrakoot—are distributed across different regions of the state and supported by an expanding expressway and logistics network.

At the policy level, the evolution from the 2018 defence and aerospace policy towards the Uttar Pradesh Aerospace and Defence Unit and Employment Promotion Policy–2024 indicates an attempt to create a more comprehensive ecosystem for aerospace and defence investment. The official implementation framework was further operationalised through an SOP issued in 2026.

The central proposition emerging from this chapter is therefore that Uttar Pradesh's defence industrialisation should be understood as a process of strategic-economic transformation rather than merely the establishment of defence factories.

The state has the geographical scale, economic capacity, industrial diversity and human resources required to become a major pillar of India's defence manufacturing ecosystem. The challenge before policymakers and industry is to convert these structural advantages into sustainable technological and

manufacturing capabilities. In this context, the Uttar Pradesh Defence Industrial Corridor represents an important experiment in combining industrial policy, regional development, technological innovation and national security.

The subsequent chapters of this volume examine this transformation in greater detail by analysing the evolution of defence-industrial policy in Uttar Pradesh, the structure and performance of the Defence Industrial Corridor, its six nodes, public and private-sector participation, MSMEs, technology and innovation, investment, employment, strategic significance, challenges and prospects.

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