

Working Paper 512

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of Industrial Sector in
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Published and Printed by: Institute for Social and Economic Change
Dr V K R V Rao Road, Nagarabhavi Post,
Bangalore - 560072, Karnataka, India.

ISEC Working Paper No. 512

March 2021

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ISBN 978-81-951228-8-2

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Working Paper Series Editor: **M Balasubramanian**

THE POLICY AND PERFORMANCE OF INDUSTRIAL SECTOR IN KARNATAKA

Malini L Tantri* and Sanjukta Nair**

Abstract

This paper evaluates the trajectory of industrial policies in Karnataka and their performance at both aggregate and disaggregate levels. While doing so, it also highlights the key challenges faced by the sector in terms of infrastructure and doing business. The analysis is based on secondary data and supplemented by insight obtained during some of the field observations.

Background

Post-Independence, India's industrial policies were aimed at economic and social development within a socialist framework, which included an emphasis on self-reliance in production, rapidly growing the capital goods sector, and a bias towards the government-owned sectors in transforming the economy (Singh, 2008). It was also characterised by the protection of domestic firms from inner as well as outer competition through industrial licensing, controls over imports, foreign investments, entry of new firms, prices as well as lack of incentives. There was a lack of institutional reforms, and the heavy curtailing of capital and technological imports led to slow growth during the 1960s and 1970s, though policies such as nationalisation of banks promoted rural credit (Kaur and Nirvikar, 2013). It was only after 1980 that the government slowly began to de-regulate and open more industries to the private sector, open the country to trade and investments, and focus on developing specific sectors, especially the IT sector. Though industrial policies led to rapid industrial growth, the share of the industrial sector to total GDP and employment grew slowly during these periods (Singh, 2008), mainly because of underperforming public sector firms and small sector enterprises (Aggarwal, 2019). In 2011, the government rolled out its first National Manufacturing Policy where the focus shifted towards more inclusive and sustainable industrial growth, through promoting skills amongst rural migrants, increasing energy efficiency and more competitive exports through industrial clusters. It was through the adoption of some of these policies, including the creation of technology parks, that the automobile sector in Tamil Nadu grew more than 170 per cent from 2007-2014. Aggarwal (2019) found that though the introduction of an industrial policy can lead to a GVA growth between 12-14 per cent, this effect reduces in the wake of introducing multiple policies and instability.

The state of Karnataka is known for a blend of high technology, capital and knowledge intensive industries on the one hand, and on the other, for also catering to the growing demand for consumer goods. Over 28 years, the state has shifted from an agrarian economy to a service-sector based economy; the share of agriculture to the state GDP declined from 36 per cent in 1989-1990 to 9 per cent in 2017-18. The share of the service sector grew from 36 to 66 per cent during the same period, given that Karnataka is home to the fourth largest technology cluster in the world, and hosts IT services for more than 400 of the Fortune 500 companies (IBEF, 2018). However, the one sector that

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has not seen much of a change during this period has been the industrial sector; its contribution to the state GDP partially fell from 28 to 26.6 per cent within the same period. Karnataka's industrial sector contribution to GDP (22.01 per cent) is less than the all India average (27.7 per cent), and less than 15 other Indian states and Union territories. However, it performs better compared to its South Indian neighbouring states with the exception of Tamil Nadu where the industrial sector contributes to one-third of its state output.

Though Karnataka is known as the knowledge and technological state of India given its high number of renowned universities and technical institutions along with sector-specific SEZs for automobile, engineering, food processing and aerospace industries amongst others, there has been a deceleration of industrial activity in the past, partly attributed to problems with core sectors including steel, automobiles and cement (Karnataka Industrial Policy, 2001). While Karnataka has come up with a product based industrial cluster development programme to boost manufacturing sector's contribution to the GDP, and has provided incentives to certain industries through interest-free loans and single window clearances, which has made it a leading state in terms of e-governance and providing online services, tax exemptions and electricity for mega industrial units, the state has to work towards absorbing the high number of skilled workers, improving infrastructure in terms of road and rail density, as well as high electricity costs and improvements in land availability and ownership. Karnataka was the first state to come out with a State Industrial Policy during 1982-83, and their most recent policy came out in 2020, but there has not been sufficient literature that discusses the performance of these industrial policies. In this context, this paper provides an overview of the performance of Karnataka's industrial sector with a focus on the manufacturing sector both at aggregate and disaggregate level, beside evaluating the industrial policy of the state in the backdrop of the changing business framework.

The purpose of the exercise is to provide a roadmap for boosting the industrial sector in the state through identifying lead and emerging sectors and also flag the key issues faced by the sector. The analysis is based on data collected from Annual Survey of Industries (ASI), Economic Survey and Directorate of Economics and Statistics, besides evaluating the pertinent policy document. The rest of the paper is organised as follows: The section following this discusses the making of the industrial policy of the state with a focus on the ease of doing business. The third section outlines the growth and pattern of the industrial sector with a focus on the manufacturing sector in Karnataka at aggregate and disaggregate levels. The paper will then conclude with a summary and policy suggestions.

Industrial Policy of the State

Karnataka was the first state to introduce a state-specific Industrial policy from 1983, the first to formulate a state-level export promotion policy (Pradhan et al., 2012), and become the aerospace hub; it was also the first state to come out with a ten year specific Aerospace Policy for the years 2013-2023, a Pharmaceutical Policy for the year 2012, and one of the first to release a Start-up Policy for the years 2015-2020. Karnataka has been recognised as one of the states with the highest number of start-ups; 14.6 per cent of all recognised start-ups in India came from Karnataka, the second after Maharashtra (18.9 per cent) (Economic Survey, 2019-20). Karnataka state's industrial policies over the years have aimed at diversifying the state's industrial sector through incentives and setting up institutions for the

development of sectors including textiles and garments, automobiles, bio-technology, mining and so on, which led to the state attracting as much as 65 per cent of the total investment in India's aerospace in 2018, made it India's fourth largest automobile manufacturer, fifth biggest exporter of pharmaceuticals and contribute to a third of biotechnology exports (Govt. of Karnataka, 2018). Karnataka is also the garment capital of India, contributing to nearly one-fifth of the country's total output in this sector.

Despite such a strong policy boost in place, the contribution of the industrial sector to total GDP has fallen (Figure 1), while that of the service sector has been increasing, in part due to the over-emphasis of incentives towards the development of the IT sector, given that Karnataka ranks first in IT exports and Bengaluru, the capital, has the fourth largest technology cluster in the world (Govt. of Karnataka, 2018). There has also been criticism over how, despite the industrial policies making provisions for overall state development through setting up SEZs and industrial parks throughout the state, industrial development and exports remain unbalanced and concentrated around certain regions (Paul *et al*, 2000).

While the industrial policy is released by the Department of Commerce and Industries, Karnataka, there have been a number of institutions and departments in place to implement these policies, some institutions being industry specific. Considering that Karnataka has been releasing industrial policies since as early as 1983, there are bound to be many measures that have been introduced since then. When it comes to trade-specific policies, Karnataka has, since the beginning, taken strides towards export promotion. In 1965, the Visvesvaraya Trade Promotion Centre was set up in Bengaluru, one of the first centres of its kind in India, to promote international trade in Karnataka. In 1989, the first fully export-oriented units were set up in Bengaluru, followed by policies to promote exports in electronics, software, garments and gems (Pradhan *et al.*, 2012). Subsequently, the state has outlined policies to promote exports through giving incentives to export-oriented units, and setting up Special Economic Zones for textiles, automobiles, electronics, pharmaceuticals and even aerospace. The government has provided for setting up various industrial parks in different regions to generate exports. While in 1993, EOUs were required to export at least 50 per cent of their products to be eligible for concessions, since 1996, the government has reduced it to 25 per cent. In 2012, the government offered full income tax exemption on export income from SEZs for the first five years, and half exemption for the next five years. The Industrial Policy of 2014-19 was the first to outline more specific incentives for exports. When it comes to setting up SEZs as well, there has been a heavy imbalance towards IT and IT enabled services; out of 31 operational SEZs in Karnataka, 23 are dedicated towards IT or IT enabled sectors. Pradhan *et al* in 2012 found that over ten years from 2000 to 2010, software exports on average grew more than 33 per cent, while manufacturing exports grew less than 25 per cent. During the same time period, Karnataka's software exports were one-third of India's software exports, while manufacturing exports were less than 8 per cent of the country total. They also found that Karnataka's manufacturing export basket was focused more on low and medium technology products versus high-technology products that are more competitive and sustainable for the economy. Karnataka's export basket needs to be more diversified and less reliant on the services sector to ensure sustained export performance in the long run.

Recently (13th August 2020), the Karnataka government released the Industrial Policy 2020-25. One standout was the development of new rail lines and what is to be the world's largest solar park in Tumakuru with an outlay of nearly US\$ 2 billion. The policy focuses on promoting 'Industry 4.0', a revolution involving the use of data mining, data analytics, artificial intelligence, virtual reality and block chain technology in industrial development, given Karnataka's leadership in the IT sector. It has identified certain thrust sectors including automobiles and pharmaceuticals under which the government will be establishing pharma parks in Mangaluru, Shivamogga and other places, aerospace, electrical vehicles, renewable energy, cement and steel amongst others. For these sectors, the government has promised additional financial support, including the promotion of tie-ups between institutions, and special incentives to industries using the 'Industry 4.0' techniques mentioned above. The policy also talks about district-level industrial clusters, a first of its kind initiative in the country which aims at improving production within clusters dedicated towards specific products. This initiative aims at creating more than 9 lakh job opportunities over nine years. The clusters identified in the current industrial policy are indicated in Table 1. However, a quick comparison of the clusters identified in the current v/s previous industrial policy indicate that two important leading sectors of Karnataka that have been missed out in this policy are the food processing and wearing apparel sectors. The industrial policies of 2009-14 and 2014-19 included these sectors amongst the thrust sectors. Another leading sector that has not been included in the basket is the leather products sector. Amongst Karnataka's emerging sectors, the paper products, furniture, chemicals, rubber and plastics industries have not been included in the basket of thrust sectors. On the other hand, the new policy includes sectors such as health and wellness, education, electric vehicles, biofuels and logistics that were not mentioned in previous policies.

Table 1: Clusters under the District Industrial Cluster Development Programme

District	Product/Cluster
Kalaburagi	Solar panels, inverters, capacitors, laminators
Chitradurga	All kinds of LED lights
Hassan	Tiles, sanitaryware and bathroom fixtures
Koppal	Toys and mechanised toys
Mysuru	Integrated Circuit Boards (ICU)
Ballari	Textiles
Chikkaballapura	Mobile phone components
Tumakuru	Sports and fitness goods
Bidar	Agricultural implements
Dharwad	Home and personal care consumer goods
Shivamogga	Health and wellness

Source: Industrial Policy 2020-25.

Much of the focus of the policy has been on the development of MSMEs in Karnataka, one way being through the creation of an MSME Sarthak scheme to address challenges faced by MSMEs, as well as developing online portals to access raw materials, retail markets and information on international standards. The KIADB will also reserve 30 per cent of land in all their industrial areas towards MSMEs.

Doing Business and Karnataka – An Overview

Though Karnataka has taken several strides in improving the health of its industrial sector, it lags significantly behind the other industrialised states including Maharashtra, Gujarat and Tamil Nadu (Table 7). In terms of doing business as well, Karnataka has slipped in nationwide rankings¹. For the third consecutive year, Karnataka's ranking amongst 21 states has slipped from sixth to ninth position (Table 3). When one looks at the individual pillars, Karnataka's highest ranks are when it comes to the labour pillar, which is not surprising given the state's reputation for having several of the country's most prestigious universities and training institutions in several fields including engineering, law, statistics and other social sciences. Bangalore also hosts the country's only MSME² training institute, and is known for producing skilled labour. Karnataka has improved its ranking in three other pillars; the infrastructure pillar which can be attributed to the development of cargo handling facilities at the various airports in the country and the growth in the rail and road network, the economic climate pillar which is mainly due to the state's high service sector contribution to its GSDP, and the governance pillar which is due to the state's top ranking in terms of the almost negligible number of extremist and insurgency cases, and administration through e-services such as the single window clearance system.

Two pillars where Karnataka is amongst the bottom states are the land and perceptions pillar. Despite the industrial policy proposing to increase the number of industrial areas and industrial parks, industrial development in the state is concentrated in a few districts; in 2013-14, 81 per cent of the total income from manufacturing was generated from just nine of the total 30 districts and 31.6 per cent of secondary sector income was generated only from the Bangalore urban and rural districts (Karnataka Economic Survey, 2019-20).

On comparison with other industrial states (Table 4), it is seen that Karnataka lags significantly behind when it comes to land reforms, though it is nearly at par when it comes to labour, infrastructure and economic climate. With its neighbouring south Indian state Tamil Nadu, Karnataka has a lower ranking in all pillars except for economic climate. With its other neighbour Maharashtra, Karnataka is more politically stable and has better quality labour. However, on the whole, the NCAER has put Karnataka amongst the states that have the potential to improve their investment ranking given its policies to ensure easy investment in industries including aerospace, energy, bio-technology and automobiles, as well as the supply of skilled labour. The new Industrial Policy 2020-25 spoke of initiatives that are already existing such as the e-Udayami single portal window and the SAKALA Act, though auto-renewal of trade licences will be introduced under existing Acts. With export promotion as well, the respective section in the policy document is small and does not mention any new initiatives,

¹ The National Council of Applied Economic Research (NCAER) from 2016 came out with a State Investment Potential Index (SIPI) that ranks the states in India on the basis of their ease of doing business and their ability to attract investment. This index was created to complement the World Bank's Ease of Doing Business ranking, as well as the indices put out by the Department for Promotion of Industry and Internal Trade (DPIIT). The point of this index is to stimulate competitiveness among states and to incentivise them to take proactive measures to make doing business and investment easier. (NCAER, 2018).

This index is a weighted average of a state's ranking on six pillars; land, labour, infrastructure, economic climate, governance and political stability and perceptions on issues related to land, labour, governance and business expectations.

² Micro, Small and Medium Enterprises.

but re-affirms claims of improving infrastructure at airports and sea ports, along with organising trade fairs. However, the government intends to identify Towns of Export Excellence for export promotion. Overall, the policy has focused more on increasing incentives and not specified how institutions and infrastructure will be strengthened or created.

Table 2: The six Pillars under the SIPI Ranking

Pillar	Constitution
Land	Availability of land for industrial purpose and industrial parks such as SEZs, spread of digitised land registration.
Labour	Labour force participation, % of vocationally trained persons, average wages, labour turnover, seating capacity in Industrial Training Institutes (ITIs).
Infrastructure	Rail and road density, number of airports and sea-ports, average electricity tariff, cargo handled per day, ground water availability.
Economic Climate	Sector-specific gross domestic product, proximity of state border to metro city, average GSDP growth, share of state in fuel and non-fuel production.
Governance and Political Stability	Police strength, cases pending investigation from previous years, insurgency rates, political leaders with serious criminal charges, e-Governance index.
Perceptions	Responsiveness towards the suitability of investment when answering questions about the other five pillars.

Source: NCAER

Table 3: Karnataka's SIPI ranking over three years

Pillar	2016	2017	2018
Overall	6	9	9
Land	N/A	16	16
Labour	3	5	3
Infrastructure	11	7	7
Economic Climate	7	7	5
Political Stability and Governance	6	7	6
Perceptions	13	15	19

Source: NCAER

Note: The land pillar was introduced into the SIPI from 2017.

Table 4: Karnataka's SIPI ranking in 2018 compared to top industrialised states

Pillar	Karnataka	Maharashtra	Gujarat	Tamil Nadu
Overall	9	5	3	2
Land	16	6	8	3
Labour	3	6	8	1
Infrastructure	7	3	8	6
Economic Climate	5	4	3	9
Political Stability and Governance	6	10	4	1
Perceptions	19	21	1	10

Source: NCAER

DPIIT Survey Results

When it comes to government initiatives, the DPIIT developed an Action Plan for State Reforms (BRAP) in 2015 which was circulated to all states and Union territories, with the aim to develop partnerships in each state towards implementing reforms to make it easier for business to start and operate within these states. The BRAP includes certain action points and states are assessed on the basis of the extent to which they have implemented these points. In 2015, Karnataka implemented less than 50 per cent of the provided action points, but it performed well in terms of providing for online registrations, payment and filing of tax returns for which the state was awarded the Prime Minister's Award for 2011-12 (DPIIT, 2015). In 2016, the state significantly improved its performance by implementing more than 88 per cent of nearly 340 action points put forth by the DPIIT, particularly those related to labour and environment regulation. In 2017-18, the state implemented more than 96 per cent of action points mentioned, putting it amongst the best performing states. However, the latest BRAP ranking in 2019 has placed Karnataka a low 17th out of 39 states and Union territories, with Gujarat (10), Maharashtra (13) and Tamil Nadu (14) performing better. (Press Information Bureau, 2020).

Table 5: Comparison of Action Points Fulfilled amongst Industrialised States

Year	Karnataka	Maharashtra	Gujarat	Tamil Nadu
2015	48.5	49.43	71.14	44.58
2016	88.39	92.86	98.21	62.8
2017-18	96.4	92.8	98	90.6

Source: DPIIT

From Table 5, it can be seen that Karnataka has taken significant strides to place itself among the top industrialised states, completing more action plans than Maharashtra and Tamil Nadu. Considering how industrial development in Karnataka is biased towards certain regions, the state's industrial policies over the years have been making provisions to increase the number of industrial parks for specific sectors including garments, retail and processed food, along with reserving a certain

percentage of industrial area land for investment by entrepreneurs from minority backgrounds. However, the SIPI survey has also noted how the state in general fares poorly when it comes to land reforms; Karnataka ranked last when it came to digitisation of land registration, and its poor implementation of land reforms has affected the agriculture sector as well; it ranked 8th out of 30 states and Union territories in terms of an agricultural marketing index, while the industrialised states of Maharashtra and Gujarat came first and second respectively. On the other hand, Karnataka has been positively singled out for its efficient online tax registration system that does not require any physical touch point (DPIIT, 2015). The BRAP 2016 report outlined that Karnataka needed to make improvements in its single-window system, land registration and enforcement of contracts through judicial reforms and provision of electronic courts.

SEZs and Doing Business in Karnataka

As per the latest available data, Karnataka (62 formal approvals) is the second highest state that has received SEZ approval in the country after Telangana (64 formal approvals). At the same time, in terms of difference in projected and actual investment and employment, it is respectively 57.3 and 78.70 per cent (CAG, 2014). Much of this is due to lower turnout of exporting units in each notified and operational SEZ. In the case of Suzlon SEZ located in Karnataka for engineering products, it is spread across 641 acres but has only three exporting units (Tantri, 2016). Similarly, KIADB Textile in Hassan, Karnataka is spread across 641 acres, but it also has about seven exporting units (ibid). Apparently, there has not been any attempt by the government to understand the factors and explain the phenomena of failure to introduce course corrections. A study carried out by Tantri (2016) highlights among other things that due to lack of builders' will to adhere to their responsibilities within SEZs and lack of government commitment in providing world class infrastructure facilities outside SEZs, it is apparently adding significantly to the transaction costs of doing business.

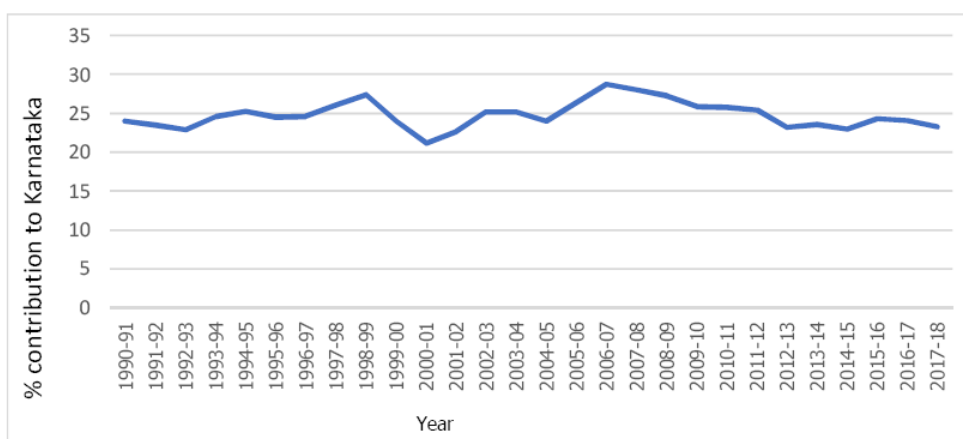
Performance of Industrial Sector - at Aggregate Level

With respect to industrial sector contribution to the respective states' total GDP, Karnataka (22) lags behind Gujarat (44 per cent) followed by Tamil Nadu (33), Maharashtra (30), Uttar Pradesh (27). Data over 28 years shows that the industrial sector has generally contributed less than 30 per cent of Karnataka's GDP (Figure 1), peaking at nearly 29 per cent in 2006-07.

The number of factories, a prominent indicator to explain the industrial activity, has increased in the state from 5381 (1980-81) to 13344 (2016-17). The highest spike was noticed in the year 2010 (Figure 2). Accordingly, the number of workers in these factories employed increased from 3,02,312 to 8,27,665 for the same reference period. (Figure 3). Though the period has seen a significant increase in gross capital formation from these factories, after 2012-13 onwards, it has witnessed a significant fall (Figure 4). The growth rates for the above indicators (Figure 5) reveal that the growth in number of factories peaked at more than 25 per cent in 2010-11, but has since seen a significant drop, growing by less than three per cent from the latest figures. In 2016, compared to 1980, the number of factories has grown by 148 per cent. The growth in the number of workers has peaked at more than 15 per cent, but has also dropped as steeply as negative 12 per cent during 1998-99. The latest figures pegged the

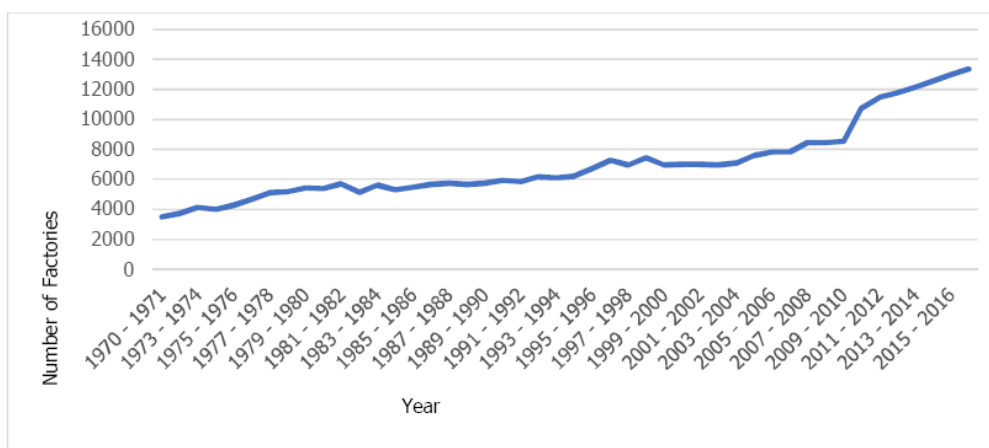
growth at 7.6 per cent. Compared to 1980, the number of workers has grown 72 times. With respect to gross capital formation, it has grown by more than 100 per cent for three separate years; 1994-95, 1998-99 and 2004-05. However, there were consistent negative growth rates from 2012-2015, and recent figures have shown a nearly negligible growth of 1.5 per cent. Compared to 1980, the growth overall has been by 174 per cent. Compared to the other three indicators, gross value added by industries in Karnataka has shown positive growth rates on average, peaking at 46.8 per cent in 2006-07, and declining the most by 12 per cent in 1999-2000. However, growth rates have slowed down to single digits from 2013 compared to double digits from previous years. From 1980, the GVA has overall grown more than 80 times according to latest figures adjusted using GDP deflator.

Figure 1: Karnataka's Industrial Sector Contribution to Total GDP (1990-2018).



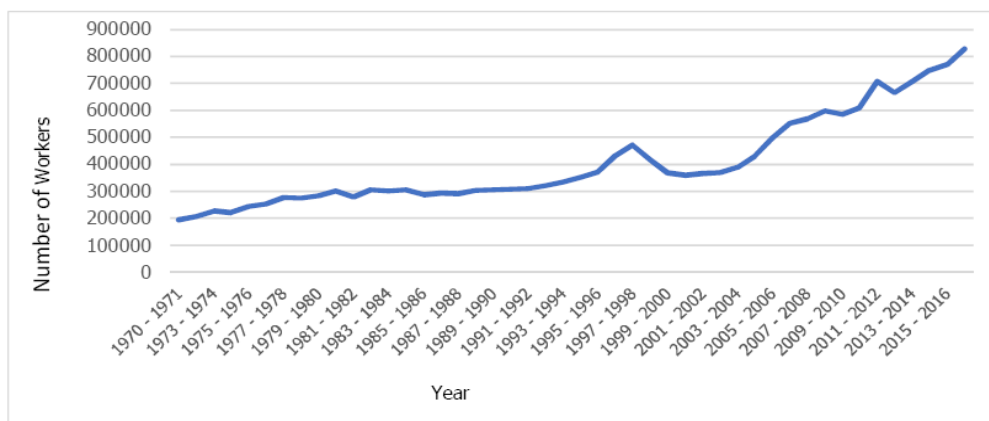
Source: RBI Handbook of Statistics

Figure 2: Trend in Number of factories in Karnataka



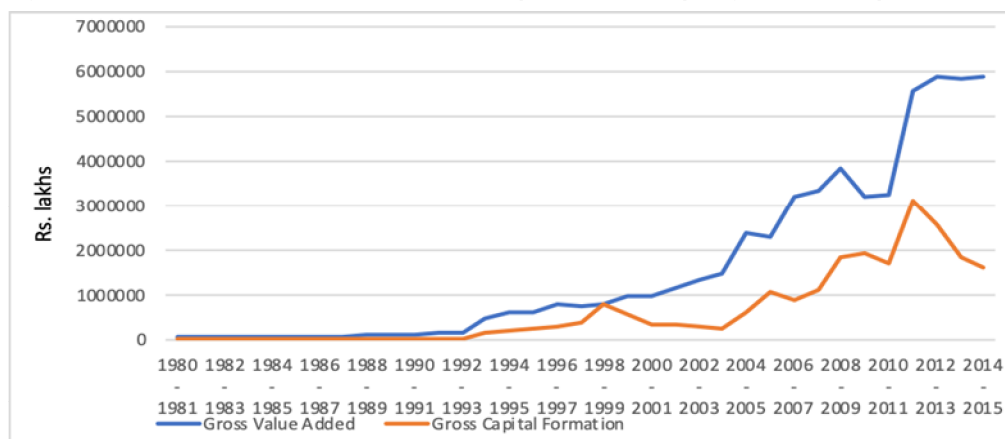
Source: Annual Survey of Industries

Figure 3: Trend in Number of Workers Employed in Factories



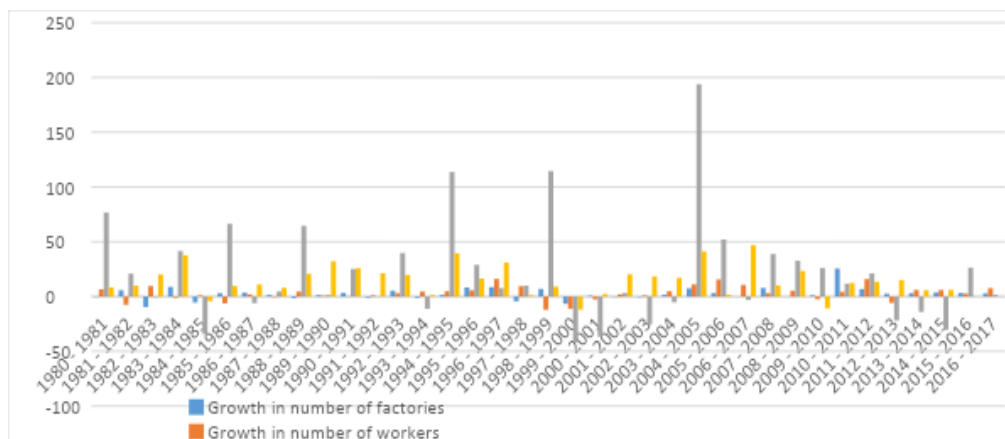
Source: Annual Survey of Industries

Figure 4: Trend in Gross Value Added and Gross Capital Formation (using GDP deflator)



Source: Annual Survey of Industries

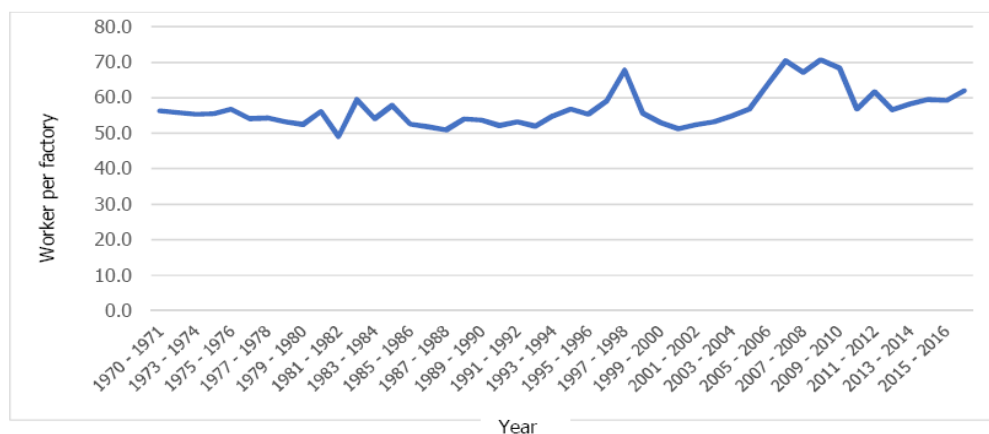
Figure 5: Growth Rates for Certain Industrial Indicators



Source: Annual Survey of Industries

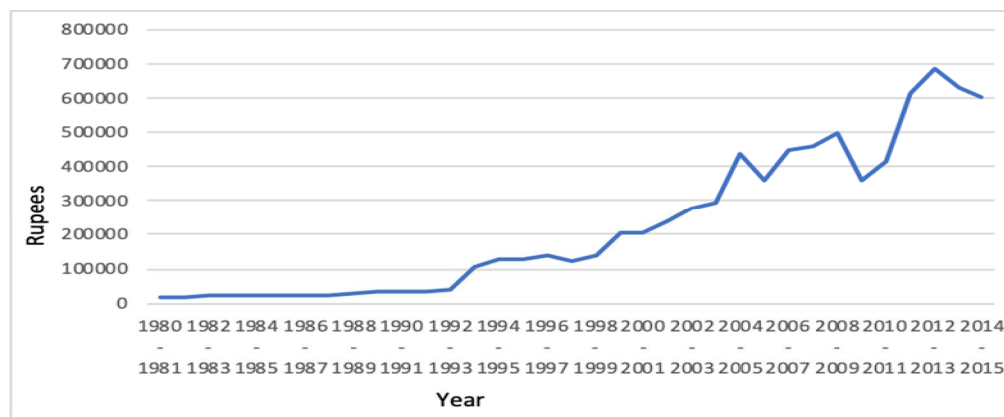
A study of the trends in average size of factories, GVA per employee and fixed capital per worker reveals that over 46 years, the average number of workers per factory (Figure 6) has ranged between 49 and 71 workers, peaking at 71 in 2008-09. As the graph shows, there has been no overall increasing or decreasing trend though compared to 1970-71 (56), the average size has grown in 2015-16 to 62. From 1980 to 2015, the GVA per capita has increased (Figure 7) from around Rs. 18,000 to more than Rs. 6 lakh when adjusted using GDP deflators. There has been an overall increasing trend, with declining GVA per capita during certain years after 1998. The fixed capital per worker for the same period (Figure 8) has increased from Rs. 42 thousand to Rs. 1.7 lakh using GDP deflators. While there has been an overall increasing trend, growth was stagnant between 1999-2001 and there was a fall post 2013. A study of the data of the gross value added over the years shows that the largest influence on gross value added growth was the number of industries. For most years, a rise or fall in the growth of factory numbers was accompanied by a higher rise or fall in gross value added. When compared with the growth in gross capital formation, it was found that the erratic performance of the GCF over the years could explain to some extent the sharp rises and falls in the GVA (Figure 9).

Figure 6: Average Size of Factories; 1970-2016



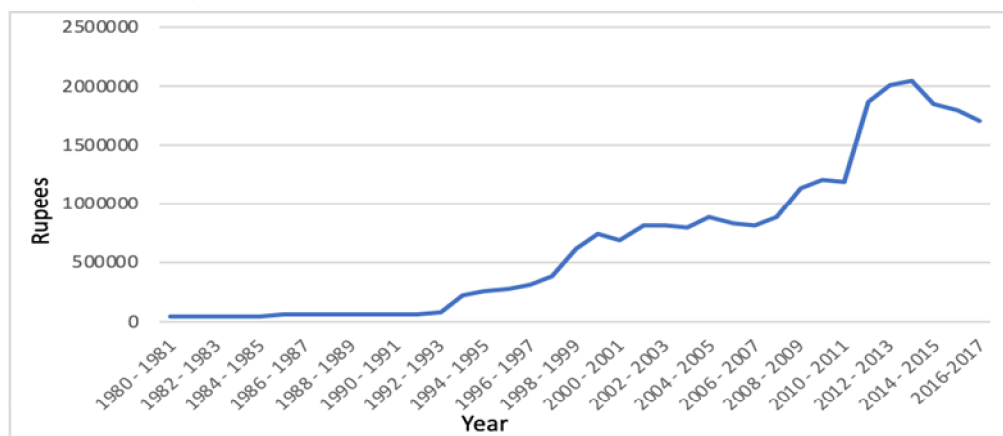
Source: Annual Survey of Industries

Figure 7: Gross Value Added Per Capita (per employee): 1980-2016



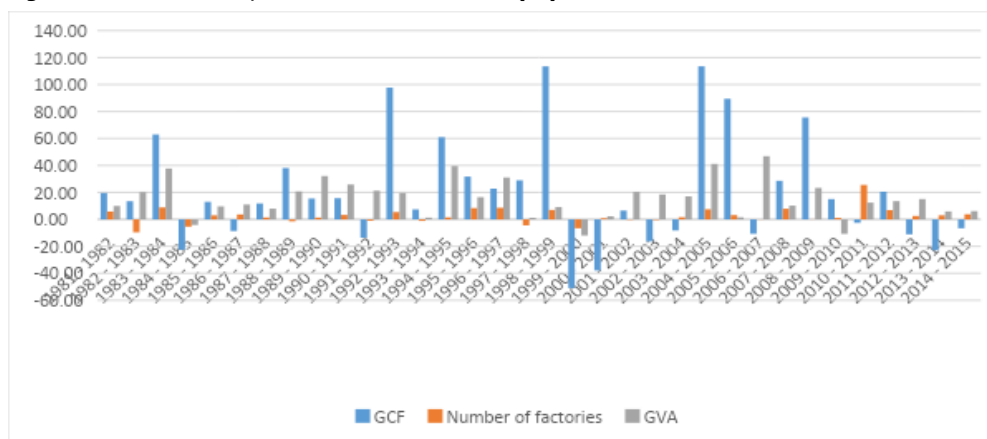
Source: Annual Survey of Industries

Figure 8: Fixed Capital Per Worker: 1970-2016



Source: Annual Survey of Industries

Figure 9: Growth in GVA, GCF and No. of Factories (%)



Source: Annual Survey of Industries

The decadal growth rates (Table 6) reveal that between 2000 and 2010, on an average we have seen better growth rate across different categories of performance indicators except the gross capital formation that showed better growth between 1990-2000. Across indicators, gross capital formation showed negative growth rates during the last decade; declining on average by 6.01 per cent in the last six years. A comparative picture of the same indicators with major industrial states indicates that Karnataka contributes 5.52 per cent of operating factories in India, which is lower than the industrialised states of Maharashtra, Gujarat and Tamil Nadu, each of which contribute more than 10 per cent of total industries (Table 7). When it comes to employment, 6.8 per cent of those employed in the registered manufacturing sectors come from Karnataka, which is behind the three industrialised states and Andhra Pradesh. Karnataka industries have generated more than 6.5 per cent of the nation's industrial output generated on average and by 2017, Karnataka industries contributed to more than 7 per cent of the net value added by Indian industries. Out of the top five industrialised states, Karnataka increased its contribution to India's industrial GVA from 4.8 to 6.3 per cent over 28 years, but its

industrial sector GDP contribution is less than half of Maharashtra despite a reduced contribution from that state (Table 8). With respect to industrial sector output, Karnataka's performance has been erratic, with growth peaking at 35 per cent in 2004-05, and declining more than 5 per cent in 2015-16. From Figure 10, it can be seen that Karnataka's growth trajectory has been along the lines of India's industrial output growth, except for stronger declines in 2009-10 and 2015-16, and higher growths in 2004-05, 2008-09, 2012-13 and 2016-17. In terms of net value added in industrial activities, Karnataka's growth has been more erratic compared to all states taken together, declining by more than 13 per cent in 2009-10 while overall, the country showed positive growth. Karnataka's growth performance in the above two indicators compared to other industrialised states is mentioned in Table 9.

Table 6: The decadal growth rates for Key Performance Indicators of Industries in Karnataka (in %)

	Number of factories	Gross Capital Formation	Number of Employees	Gross Value Added
1980-1990	0.6	10.5**	0.5	13**
1990-2000	2.6**	27.5**	3.6**	14.34*
2000-2010	2.6**	26**	7.3**	18.1*
2010-2016	3.4**	-6.01*	3.46**	9.6*

Source: Annual Survey of Industries

Note: For GVA, the decadal growth rate is calculated for years 2010-2014.

* - significant at 5 percent

** - significant at 1 per cent

Table 7: Certain Industrial Indicators for Top Industrialised States (% of India total)

State	Number of operating factories	Total persons engaged	Total Output	Gross Value Added	Net Value Added
Tamil Nadu	16.37	16.16	10.7	11.19	11.14
Gujarat	10.52	11.7	16.85	15.05	14.89
Maharashtra	10.3	12.86	14.86	17.63	18.19
Uttar Pradesh	6.56	6.86	6.38	5.75	5.92
Karnataka	5.52	6.82	6.55	6.97	7.09

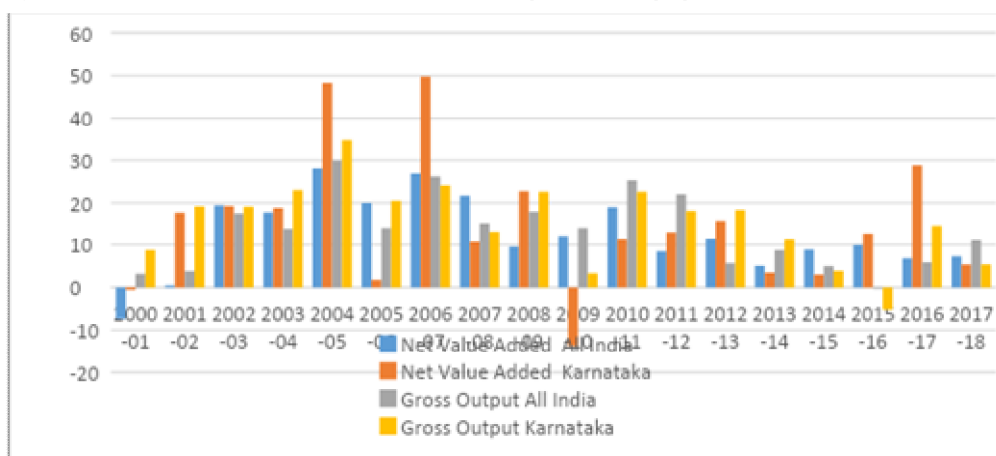
Source: Annual Survey of Industries, 2017-18.

Table 8: India's Top Industrial States as of 2015-16

State	Contribution to India's Industrial GVA (2015-16)	Contribution to India's Industrial GVA (1990-91)
Maharashtra	15.6	19.6
Gujarat	11.9	8.4
Tamil Nadu	9.6	8.8
Uttar Pradesh	7.2	10.09
Karnataka	6.3	4.8

Source: RBI Handbook of Statistics.

Figure 10: India and Karnataka's NVA and Gross Output Growth (%)



Source: Annual Survey of Industries

Table 9: Growth in NVA and Gross Output among leading industrialised states (%)

Year	All India		Gujarat		Maharashtra		Tamil Nadu		Karnataka		Uttar Pradesh	
	Value of Output	Net Value Added	Value of Output	Net Value Added	Value of Output	Net Value Added	Value of Output	Net Value Added	Value of Output	Net Value Added	Value of Output	Net Value Added
2000-01	3.2	-7.3	8.0	-12.6	2.0	-9.6	9.5	11.8	8.8	-0.6	6.2	-6.4
2001-02	3.8	0.5	15.3	0.2	-2.0	-6.0	-8.9	-11.6	19.2	17.7	3.4	4.5
2002-03	17.5	19.4	23.8	35.6	20.1	18.8	14.5	3.3	19.1	19.3	20.1	13.6
2003-04	13.9	17.8	13.5	26.1	9.5	20.0	20.2	26.5	23.0	18.8	16.0	11.3
2004-05	29.9	28.1	25.8	24.8	50.6	22.4	22.8	12.9	34.7	48.3	16.9	13.0
2005-06	14.1	20.0	18.1	32.9	4.1	44.9	19.1	29.7	20.5	1.8	8.9	14.9
2006-07	26.2	26.9	21.0	0.2	27.6	28.3	35.3	35.0	24.1	49.8	39.6	39.0
2007-08	15.2	21.7	20.3	29.5	9.1	15.9	3.3	4.1	13.2	10.8	16.8	12.8
2008-09	17.9	9.6	13.4	-2.7	15.4	2.1	13.3	1.0	22.6	22.7	3.4	-6.2
2009-10	14.1	12.2	26.5	49.0	4.0	4.4	24.9	48.9	3.3	-13.7	12.6	28.3
2010-11	25.3	19.0	25.5	-0.6	25.8	27.0	25.6	21.7	22.6	11.3	29.5	43.3
2011-12	22.0	8.5	23.8	-2.0	28.0	4.7	29.1	6.9	18.1	13.1	13.8	-16.3
2012-13	5.7	11.4	11.8	35.6	1.7	14.0	1.6	18.7	18.3	15.8	8.6	10.7
2013-14	8.8	5.1	10.2	8.0	4.3	12.2	9.3	-4.5	11.3	3.5	13.8	26.2
2014-15	5.0	8.9	3.2	32.1	5.0	4.2	3.5	0.8	3.9	3.0	2.9	-15.7
2015-16	-0.3	10.0	-9.1	6.1	4.3	4.0	-0.2	24.1	-5.2	12.8	1.2	25.4
2016-17	5.9	6.9	5.9	-8.1	-8.0	-3.9	9.5	8.2	14.6	28.8	15.7	65.0
2017-18	11.1	7.3	11.3	10.6	11.6	7.2	12.8	16.2	5.4	5.4	3.9	-19.5

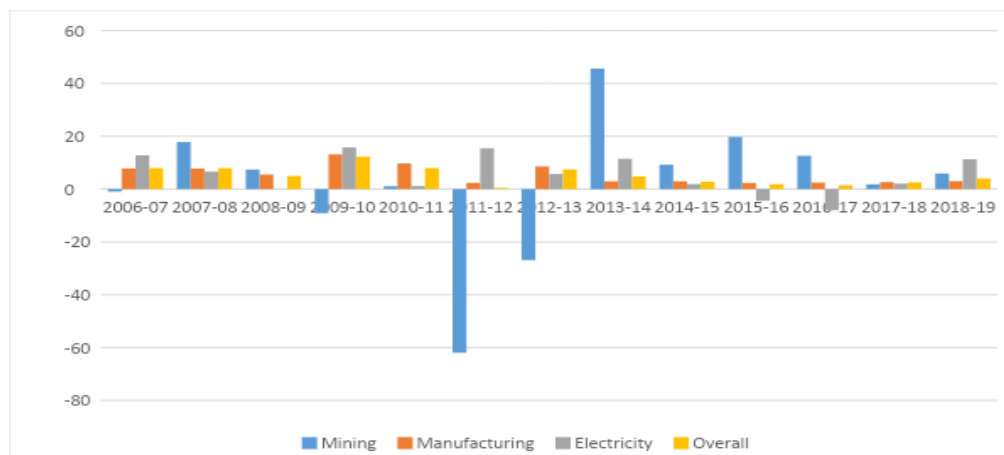
Source: Annual Survey of Industries

Changing Composition of Manufacturing in Karnataka

As seen in Figures 1 to 4, the manufacturing sector growth in Karnataka has overall seen occasional sharp rises and falls, especially when it comes to gross capital formation, and gross value added growth has slowed over recent years to single digits, partly due to the performance in GCF. Moreover, the

growth in GVA and GCF per capita has seen a decline in the most recent years (Figures 7 and 8). In this section, we look at the growth rates in various sectors within the Karnataka industrial sector.

Figure 11: Growth Rates in Industrial Subsectors (Karnataka)



Source: Karnataka Economic Survey 2019-2020

With respect to industrial location, though there are ten prominent industrial areas spread across the state, much of it is concentrated in the Bengaluru region (Table 10). Further, industries in general were concentrated in urban areas without much diversification in other districts³. In 2013-14, 81 per cent of the total income from manufacturing was generated from just nine of the total 30 districts and 31.6 per cent of secondary sector income was generated only from the Bengaluru Urban and rural districts (Karnataka Economic Survey, 2019-20).

Table 10: Main Industrial Areas in Karnataka

Industry	Areas
Aerospace	Belagavi
Automobiles	Ramanagara, Shivamogga, Dharwad and Kolar, Bengaluru, Bidadi
Steel	Ballari, Koppal, Bagalkote, Haveri, Gadag and Raichuru
Biotechnology	Electronic City, Bengaluru. Centres being planned in Dharwad, Mangaluru, Bidar
Industrial Valves	Hubballi, Dharwad
Machine Tools	Peenya
Textiles	Doddaballapur, Bengaluru, Hassan, Ballari
Garments	Bengaluru
Cement	Kalaburagi, Chitradurga, Belagavi

Source: PricewaterhouseCoopers, IBEF.

³ Also see Arun Kumar, 1996

Table 11: Trend in Number of Factories in Karnataka (rural-urban break up)

Year	Rural	Urban	Total
1998 - 1999	1845	5597	7442
1999 - 2000	1475	5478	6953
2000 - 2001	1588	5422	7010
2001 - 2002	1679	5308	6987
2002 - 2003	1633	5323	6956

Source: Annual Survey of Industries

Note: ASI do not have any recent year data on this

Performance at Disaggregate Level

The sub sectoral contribution of GVA to industrial activity (Table 12) reveals that across sub categories, the manufacturing sector has the highest share. Over the years, it has increased from 59.67 in 2011-12 to 65.70 per cent in 2018-19 and this was followed by the construction industry. With respect to their growth rate, the mining sector has seen the most uneven growth, rising by 17.8 per cent in 2007-08, only to see consistent declining growth rates over the next few years, dropping by as much as 60 per cent in 2011-12. As of 2019-20, the electricity sector saw the highest growth, at 11.3 per cent (Table 14).

Table 12: Sub-sectoral Contribution of Gross Value Added (GVA) to the Industrial Sector of Karnataka (2011-2019)

Year	Mining and Quarrying	Manufacturing	Electricity, gas, water supply & other utility services	Construction	Total
2011-12	2.77	59.67	6.65	30.92	100.00
2012-13	2.31	61.51	6.51	29.67	100.00
2013-14	3.14	60.09	6.50	30.26	100.00
2014-15	4.17	58.74	7.07	30.02	100.00
2015-16	2.69	62.95	7.38	26.98	100.00
2016-17	3.48	65.25	6.27	25.00	100.00
2017-18	3.07	66.21	6.16	24.57	100.00
2018-19	3.36	65.70	6.44	24.50	100.00

Source: Ministry of Statistics and Programme Implementation

Table 13: Sub-sectoral Contribution of Gross Domestic Product to the Industrial Sector of Karnataka (2011-2020)

Year	Mining	Manufacturing	Electricity	Construction
2011-12	2.77	59.67	6.65	30.92
2012-13	2.38	62.29	6.41	28.92
2013-14	3.14	60.45	6.26	30.15
2014-15	4.07	59.29	6.83	29.82
2015-16	4.34	62.45	6.56	26.64
2016-17	3.51	68.65	4.84	23.01
2017-18	3.42	68.27	5.18	23.13
2018-19	2.74	68.80	5.16	23.30
2019-20	2.65	69.32	5.27	22.76

Source: Economic Survey Karnataka 2019-2020

Table 14: Growth rates in output among industrial subsectors in Karnataka

Year	Mining	Manufacturing	Electricity	Overall
2007-08	17.81	7.7	6.6	7.9
2008-09	7.4	5.5	0.08	4.9
2009-10	-9.12	13.1	15.8	12.2
2010-11	1.09	9.7	1.15	7.9
2011-12	-61.9	2.4	15.4	0.47
2012-13	-26.8	8.5	5.7	7.4
2013-14	45.6	2.9	11.5	4.7
2014-15	9.2	2.9	1.9	2.8
2015-16	19.7	2.3	-4.41	1.8
2016-17	12.5	2.4	-7.9	1.4
2017-18	1.8	2.6	2.06	2.5
2018-19	5.8	3.01	11.3	4.03
CAGR	-1.22	5.4	5.2	5.1

Source: Karnataka Economic Survey 2019-2020

To have a better understanding of the disaggregate level performance of the industrial sector, we have looked at ASI data at the two digit level, which consists of 25 categories of products (Appendix Table 1), for the last one decade. Of the 25 industries, Karnataka figures amongst the top three manufacturing states (Table 15) with respect to tobacco products, wearing apparel, coke and refined petroleum, electrical equipment and publishing activities. However, Maharashtra (18 products), Gujarat (15), Tamil Nadu (12) and Uttar Pradesh (10), which contribute more to India's industrial GDP, also are the leading states for more industrial activities compared to Karnataka, explaining their higher GVA contributions.

Table 15: Top Three Manufacturing States under Different Sectors

Industry	First	Second	Third
Cotton	Gujarat (30.4)	Maharashtra (23.1)	Telangana (18.04)
Food Products	Maharashtra (13.5)	Gujarat (11.4)	Uttar Pradesh (10.8)
Beverages	Maharashtra (15.25)	Uttar Pradesh (12.8)	West Bengal (7.8)
Tobacco Products	Uttar Pradesh (29.2)	Karnataka (16.5)	West Bengal (9.7)
Textiles	Gujarat (23.1)	Tamil Nadu (22.05)	Maharashtra (9.1)
Wearing Apparel	Tamil Nadu (33.47)	Karnataka (16.1)	Uttar Pradesh (9.9)
Leather and related products	Tamil Nadu (28.3)	Uttar Pradesh (22.8)	Haryana (13.6)
Wood and wood products	Gujarat (13.8)	West Bengal (12.8)	Uttarakhand (8.9)
Paper and paper products	Maharashtra (15.5)	Gujarat (14.3)	Uttar Pradesh (10.4)
Printing and recorded media	Maharashtra (23.1)	Uttar Pradesh (14.6)	Tamil Nadu (10.3)
Coke and Refined Petroleum	Gujarat (37.05)	Maharashtra (13.9)	Karnataka (6.4)
Chemicals	Gujarat (33.3)	Maharashtra (16.35)	Uttar Pradesh (5.7)
Pharmaceuticals	Maharashtra (16.8)	Telangana (14.5)	Gujarat (14.4)
Rubber and plastics	Maharashtra (16.5)	Gujarat (14.8)	Tamil Nadu (11.03)
Other non-metallic minerals	Gujarat (15.8)	Rajasthan (12.09)	Tamil Nadu (8.95)
Basic metals	Odisha (12.2)	Gujarat (11.2)	Maharashtra (11.1)
Fabricated metal products	Maharashtra (25.3)	Tamil Nadu (13.5)	Gujarat (11.1)
Computer, electronics and optical products	Uttar Pradesh (31.3)	Tamil Nadu (15.07)	Andhra Pradesh (12.4)
Electrical Equipment	Maharashtra (15.7)	Gujarat (8.3)	Karnataka (7.6)
Machinery and Equipment	Maharashtra (26.3)	Tamil Nadu (19.5)	Gujarat (13.8)
Motor Vehicles	Tamil Nadu (26.2)	Haryana (22)	Maharashtra (19.7)
Other Transport Equipment	Maharashtra (20.8)	Haryana (17.8)	Tamil Nadu (12.8)
Furniture	Maharashtra (20)	Rajasthan (18.8)	Uttar Pradesh (17.3)
Other Manufacturing	Gujarat (27.9)	Maharashtra (21.8)	Karnataka (11.1)
Publishing Activities	Karnataka (13.4)	Tamil Nadu (12.2)	West Bengal (11.8)

Source: Annual Survey of Industries, 2017-18.

Note: Values in parenthesis are percentage of total output in the country

Within the state and across categories (at two digit levels), food products, fabricated metals, machinery and equipment, wearing apparel and other non-metallic mineral industries are leading in terms of number of factories and over the years, their composition has changed slightly (Table 16). Among all, the apparel, food products and machinery equipment industries seem to be labour intensive as they have revealed the highest share in total labour employed, with a combined total of more than 50 per cent of labour employed amongst all industries in Karnataka. When it comes to GVA, the food products industry has seen its share improve to more than 12 per cent from 7 per cent over eight years, while that of basic metals has fallen from 15 to 9 per cent over the same period. Similar changes were observed in terms of net value added.

Though the basic metals industry continues to be leading in terms of gross capital formation, its composition to the total has nearly halved from one-third of total industrial GCF to 18 per cent. Under this indicator, there has been significant change in the leading industries; motor vehicles, pharmaceuticals and coke and refined products industries were amongst the top 5 leading industries in

2016-17, but were not in earlier years. Overall, the food products industry was the leader in terms of number of industries, gross and net value added in 2016-17, and was the second in terms of labour and third in terms of GCF, making it the leading industry overall on these indicators. The wearing apparel industry which employed the most labour placed fourth in terms of number of factories and third in terms of net value added, which could explain why Karnataka is second ranked amongst all states in this industry (Table 15). Though Karnataka ranks third amongst states in manufacturing electrical equipment, Table 16 figures show that it was a leading industry in certain indicators in 2008-09, but was no longer a leader in recent years. Other industries that have overall remained leaders include industries manufacturing basic metals, machinery and equipment, and motor vehicles and trailers.

Table 16: Leading Industrial Category Across Indicators (% share of Karnataka industrial total in brackets)

Year	Number of factories		Labour		GVA		GCF		NVA	
	2008-09	2016-17	2008-09	2016-17	2008-09	2016-17	2008-09	2016-17	2008-09	2016-17
1	Food products (17.6)	Food products (15.9)	Wearing apparel (35.04)	Wearing apparel (32.4)	Basic metals (15.03)	Food products (12.7)	Basic metals (34.3)	Basic metals (18.1)	Basic metals (14.6)	Food products (13.06)
2	Machinery and Equipment (9.6)	Fabricated metal products (9.6)	Food products (10.3)	Food products (11.4)	Machinery and equipment (8.09)	Machinery and equipment (10.9)	Machinery and Equipment (8.06)	Motor vehicles, trailers and semi-trailers (9.04)	Machinery and Equipment (8.14)	Machinery and Equipment (11.9)
3	Fabricated metal products (6.7)	Machinery and equipment (8.1)	Machinery and equipment (7.1)	Motor vehicle, trailers and semi-trailers (7.3)	Food products (7.03)	Basic metals (9.4)	Food products (6.71)	Machinery and equipment (7.11)	Food products (7.14)	Wearing Apparel (8.26)
4	Wearing Apparel (6.6)	Wearing apparel (7.3)	Basic metals (5.2)	Machinery and equipment (6.4)	Electrical equipment (6.6)	Leather and related products (8.6)	Electrical Equipment (6.01)	Pharmaceuticals, medicinal, chemical and botanical products (7.1)	Electrical Equipment (6.84)	Basic Metals (8.14)
5	Other non-metallic mineral products (6.1)	Other non-metallic mineral products (6.1)	Electrical equipment (4.5)	Basic metals (5.02)	Coke and refined petroleum (6.5)	Motor vehicles, trailers and semi-trailers (7.5)	Other non-metallic mineral products (4.1)	Coke and refined petroleum products (7)	Other non-metallic products (6)	Motor vehicles, trailers and semi-trailers (6.66)

Source: Annual Survey of Industries.

Table 17: Emerging Industrial Category across Indicators

Year	Number of factories	Labour	GVA	GCF	NVA
1	Wearing apparel	Motor vehicles, trailers and semi-trailers	Leather and related products	Manufacture of other transport equipment **	Other transport equipment
2	Rubber and plastics	Wearing apparel *	Computer, electronic and optical products		Leather and related products
3	Food products	Machinery and equipment **	Furniture *		Computer, electronic and optical products
4	Motor vehicles, trailers and semi-trailers *	Waste collection, treatment and disposal activities **	Wearing Apparel *		Furniture *
5	Chemical and chemical products *	Other transport equipment **	Paper and paper products *		Paper and paper products *

Source: Annual Survey of Industries

Note: * -- reported positive growth rate over past four years

**-- reported positive growth rate over past three years

As against the leading industries, which are based on their share in total, we have calculated the emerging industries at two-digit levels. Emerging industries are labelled those industries that have registered strictly positive growth rates over a period of a minimum three years. In terms of number of factories, the leading industries of food products and wearing apparel registered positive growth rates over five years. Motor vehicles and chemical product industries are emerging in that the number of factories have increased at a positive rate over four years. In terms of labour employed, most industries have seen erratic growth rates, with only the motor vehicle industry (the third leading in this indicator) maintaining positive growth over five years, while the largest employer, the wearing apparel industry has seen positive growth over four years. Though the waste disposal industry is not a leader at the state or national level, it has been seeing increases in labour employed. The leather product industry and the computer electronics industries have been successful in continuously increasing their gross and net value added; the leather industry is amongst the leading in terms of GVA. Industries producing furniture and paper products appear to be emerging from these indicators. All industries in Karnataka have seen irregular growth when it comes to gross capital formation, and apart from the manufacture of other transport equipment, the rest of the industries have failed to maintain positive growth for the minimum period of three years that was considered.

In order to understand how production has grown under these sub-sectors, the indices of industrial production were analysed over the years 2006-2019. Compared to 2004-05 figures, over 14 years, industrial production in Karnataka has grown by 110 per cent, with the highest year on year growth of 13.1 per cent between 2009-10. The industry that has seen the maximum growth on the basis of industrial production is the publishing and printing materials industry, which grew more than 265 per cent. As mentioned in Table 15, this is the sector in which Karnataka ranks first in the whole country. This sector is followed by industries manufacturing wood and wood products (167 per cent) and those manufacturing motor vehicles, trailers and semi-trailers (165).

However, a comparison of the remaining sectors in which Karnataka is amongst the top three states (Table 18) has found that growth in production in these sectors has been less than 100 per cent after 14 years. The tobacco sector registered the lowest growth of 65 per cent, followed by wearing apparel and coke and refined petroleum sectors that grew 92 per cent. The electrical sector performed best with a growth of over 132 per cent.

Table 18: Index of Industrial Production Amongst Manufacturing Sub-sectors in Karnataka

NIC-04	Industry name	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
15	Food products and beverages	115.03	125.66	152.4	181.07	206.87	163.81	179.92	188.48	196.55	202.27	208.5	214.96	222.59
16	Tobacco products	101.72	109.6	89.97	128.38	153.33	130	142.44	148.32	153.74	156.33	159.16	162.42	165.68
17	Textiles	93.39	96.36	112.51	119.7	128.78	150.88	167.95	175.76	182.79	188.57	195.17	200.6	207.43
18	Wearing apparel	103.67	109.94	96	122.9	137.3	136.61	150.29	158.45	165.61	172.38	179.6	185.42	192.34
19	Leather goods	80.95	86.73	124.45	133.95	139	134.84	145.24	149.24	152.54	157.39	162.1	165.95	170.5
20	Wood and wood products	93.09	96.11	100.86	102.3	106.99	205.84	221.48	231.38	240.02	247.57	254.84	260.82	267.62
21	Paper and paper products	114.35	123.01	153.13	161.86	170.51	171.29	190.56	197.67	205.54	212.08	219.09	225	231.41
22	Publishing and printing materials	103.3	109.04	211.5	219.71	241.83	200.12	307.06	315.23	328.99	334.36	342.18	352.33	364.14
23	Manufacture of coke, refined petroleum products and nuclear fuel	108.08	114.96	144.64	157.5	167.83	148.61	162.26	169.1	175.24	179.1	183.01	187.41	192.83
24	Chemical and chemical products	123.34	133.36	106.14	113.59	119.93	137.42	153.31	156.61	162.37	167.25	171.86	176.41	181.53
25	Rubber and plastic products	115.66	124.09	173.11	179.34	195.95	177.92	196.53	200.38	205.4	209.59	214.32	218.9	224.86
26	Other non metallic mineral products	140.34	160.54	144.56	149.3	155.41	183.35	193.03	196.25	201.01	203.7	206.97	212.46	218.43
27	Basic metals	138.09	157.43	157.82	166.64	179.03	153.45	173.24	196.33	179.91	182.28	185.03	190.03	196.2
28	Fabricated metal products	98.52	102.62	120.46	126.71	131.72	183.22	203.81	208.14	212.95	217.18	221.2	225.55	232.24
29	Machinery equipments	103.15	110.22	110	116.17	120.32	196.39	213.73	218.76	227.1	236.69	244.5	250.64	257.59
30	Office, accounting and computing machinery	115.66	124.09	171.71	181.52	197.51	187.2	189.46	196.97	201.75	205.73	211.58	217.56	224.79
31	Electrical machinery apparatus	119.49	128.71	117.19	125.15	130.3	209.24	209.75	214.17	216.45	218.38	221.75	226.83	232.79
32	Television and other communication equipments	132.13	147.41	144.99	163.62	182.61	194.96	198.43	203.04	206.4	211.85	217.82	222.88	228.91
33	Medical, optical instruments and watches	139.22	158.99	123.4	127.7	130.77	164.91	173.75	177.41	181.11	184.45	188.98	193.79	199.39
34	Motor vehicles, trailers and semi-trailers	97.4	98.91	101.34	119.44	136.45	228.64	232.42	238.45	241.59	245.58	251.27	258.41	265.96
35	Other transport equipment	106.27	111.15	59.04	61.59	71.02	201.39	204.58	213.05	219.26	223.83	229.49	235.21	242.6
36	Furniture	87.4	92.95	135.64	148.6	151.74	161.56	163.39	167.25	169.74	173.94	177.63	181.97	187.58
	Overall manufacturing index	114.18	123.05	129.83	146.9	161.18	165.05	179.19	184.44	189.85	194.29	199.08	204.34	210.49
	Growth over the previous year.	7.83	7.77	5.51	13.15	9.72	2.4	8.56	2.93	2.93	2.34	2.47	2.64	3.01

Source: Karnataka Economic Survey 2019-20

Note: Base year is 2004-05

Summary

Though Karnataka has the credit of being the first to introduce a state-specific industrial policy, in terms of its performance, specifically in comparison with other leading industrialised states, it lags behind significantly. In terms of trade facilitation as well, Karnataka has slipped in nationwide rankings. In the pursuit of attracting investment from within India and elsewhere, perhaps it may be a better choice to look at some of the best success stories elsewhere⁴. There apparently exists a great void between the aspirations set out in the policy and realised performance. At disaggregate levels, the present study has identified a few leading and emerging industries. Perhaps, the government may consider boosting these industries with specific measures. Within the state, we observe regional imbalances in industrial expansion with preference to urban areas than rural setups. The explanation for such performance could be attributed to lack of business enabling reform in the state, compared with other states.

The new industrial policy has identified a few new sets of clusters and has left out a few leading sectors from thrust areas. Considering the fact that in the post Covid-19 world, the government is aiming to capture Chinese trade spots in the global economy, the existing SEZs and industrial clusters may provide suitable material and for that, the government needs to attend more to the institutions and infrastructure side of it than focusing on incentives. Perhaps Covid-19 may prove an opportunity to introduce a new set of institutional reforms in the country in general and Karnataka in particular. While doing so, the sectoral approach needs to be followed rather than a 'one size fits all' approach. For instance, demand for infrastructure from the IT/ITes sector will be entirely different from that of a manufacturing hub. To begin with, the government may think of developing a sector-specific revival policy (based on comparative advantage) after undertaking due survey of the same. While doing so, care needs to be taken while providing incentives to institutions and infrastructure, as the former improves our competitiveness in international trade, whereas the latter may attract investment but may fail to provide us a competitive edge. The post Covid-19 policy response may also be drafted to overcome the regional imbalances in industrial expansion. The government needs to undertake a quick study of key industrial hubs of the state and understand their problems in doing business with states. Beside this, quite often the turf war between departments and ministries results in increasing the hassles of doing business. To avert this, the government should introduce a higher level of governance across vertical and horizontal levels so that commitments and aspirations are met in real terms. In the pursuit of attracting investments from within India and elsewhere, perhaps it may be better to look at some of the best success stories elsewhere. Meanwhile, the government should have a well thought out plan for demand and supply of labour required for industrial activity, specifically in the pandemic situation wherein a majority of migrated labour are being marginalised. The major limitations of the study are: It has not touched upon the non-manufacturing sectors of Karnataka, focusing solely on the manufacturing sectors due to data availability. Moreover, due to data constraints, it was not possible to conduct a study of rural-urban development in these respective sectors over time. Certain indicators have been adjusted using GDP deflators to reduce inflation effects, since the Karnataka Economic Survey data includes GDP figures from 1980 which were used to calculate the deflator.

⁴ See Annexure Table 1 for details

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Annexure

Table 1: Best Industrial Policy Practices in Other Indian States

State	Practice	Possible Lessons
Gujarat	The states' Investor Facilitation Portal has a dedicated land bank section which provides GIS maps and data on land availability in various estates including those in SEZs. Applications are reviewed online within 30 days. To reduce corruption, the same inspector is not permitted to inspect the same establishment consecutively, and there should be a single joint inspection instead of multiple ones.	Land mapping is an effective tool to provide future entrepreneurs information about government sanctioned land to start an industry, without the concern of constructing on illegal land. Ensuring that inspections are carried out in a systematic manner by different people will reduce corruption through time wasted in unnecessary inspections and bribing by officials.
Uttarakhand	Uttarakhand was the most improved state when it came to trade facilitation reforms. They introduced a single window portal to make appeals and seek redressal, including from the Chief Minister, a penalty to officers for making delays in responding to investors and ensuring decisions on proposals that are made within a fortnight.	Though Uttarakhand has a disadvantage in terms of poor road and rail connectivity, it worked on improving its investment climate in other ways through passing a Single Window Clearance Act to ensure proposals, appeals and redressals are addressed as soon as possible and penalising those who make delays. Passing an act gives a statutory obligation to officials to perform their duty.
Jharkhand	The state has passed separate labour Acts for building and construction workers, beedi, motor transport and even inter-state migrant workers, as well as exemption of low-risk industries from inspection if they file labour return forms online. Other reforms include a planned inspection of 20 per cent units identified at random, and one day registration of shops and establishments.	Providing protection to different labour groups through separate labour acts reduces exploitation of labour, improves their productivity as well as facilitates foreign investment from companies that are concerned about labour standards and protection. Unplanned inspections increase the accountability of industries to ensure they are complying with industrial norms.
Tamil Nadu	The state created a Single Window Portal specially for MSMEs to obtain approvals and no objection certificates. This portal also facilitates the disbursal of govt. subsidies to MSMEs and officials have been reaching out to MSMEs to inform them of these facilities.	Though Single Window portals have been in existence in several states since a long time, TN's portal for MSMEs is the first of its kind in India. Given the growing importance of MSMEs in the country, providing them a dedicated portal can facilitate them receiving quicker approvals instead of waiting behind bigger industries to receive them, and encourage their growth.
Telangana	Telangana has outlined several incentives for start-ups which include yearly reimbursement of SGST, reimbursement of 30 per cent of costs incurred in international marketing for trade shows, costs for patent filing and even monetary recruitment assistance for employees in the first year.	Given that for start-ups the main issue concerns finance, state govt support through reimbursement of costs will encourage the growth of start-ups. Telangana's unique model of recruitment assistance will promote employment generation without the fear of increasing costs.

Source: DPIIT, CII.

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ISBN 978-81-951228-8-2



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