Chapter 1

Introduction

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The Context

In 2017–18, the manufacturing sector (industry) accounted for 18 per cent (31.2 per cent) of India’s gross domestic output (GDP) at constant prices. The corresponding ratio for employment is 12.1 per cent (27 per cent), as per the periodic labour force survey (PLFS) data. As the ratios have barely inched up for over 25 years (Figure 1.1), it is a sign of industrial stagnation (Nagaraj 2017). Moreover, after initiating the liberal (free-market) economic reforms in 1991, import and technological dependence have risen (Chaudhuri 2013; Mani 2018).

However, a boom in information technology (IT) services and their exports has more than compensated for industrial stagnation, as India’s output growth accelerated. After joining the World Trade Organisation (WTO) in 2001, if China came to be known as the world’s factory, many believed that India was

Figure 1.1 Share of manufacturing and industry in GDP

on its way to becoming the world’s back office. For a while, India seemed to be on course, catching up with China, but it faltered suddenly.

The global financial crisis in 2008, the great recession after that and the rising threats of a trade war have taken the sheen out of India’s performance and put paid to its global ambition. Meanwhile, China has graduated from assembling low-quality consumer goods to a technologically dominant nation – for example, Huawei’s pole position in the telecom technology market – with world-beating firms and brands, both in high-tech manufacturing and IT services.

Realising the limits to the growth of the new services without the backing of a sound manufacturing base, the National Manufacturing Policy, 2011, sought to raise the sector’s share in GDP to 25 per cent and to create 100 million additional manufacturing sector jobs by 2025. Though the policy failed to take off, the document helped articulate the need for industrialisation – or re-industrialisation – as an imperative for long-term national development.

In 2015, the policy was recast as the ‘Make in India’ initiative, with the following objectives:

1. The target of an increase in manufacturing sector growth rate to 12–14 per cent per annum over the medium term.
2. An increase in the share of manufacturing in the country’s GDP from 16 per cent to 25 per cent by 2022.
3. To create 100 million additional jobs by 2022 in the manufacturing sector.

What has Make in India managed to accomplish? For output growth, there are two competing estimates. Between 2012–13 and 2017–18, National Accounts recorded an annual industrial growth rate of 7.5 per cent. The index of industrial production (IIP) shows an annual growth rate of less than half of that figure, that is, 3.8 per cent. As the GDP growth rate is probably overestimated due to methodological issues in the current series of National Accounts with 2011–12 as the base year (Nagaraj and Srinivasan 2016), industrial growth rate is probably around 5–6 per cent per year, as per the Annual Survey of Industries (ASI). To gain a perspective, during the boom years of 2003–08, industry grew at close to 10 per cent per year. The modest output growth during the last decade was accompanied by massive job losses: the manufacturing sector lost 3.4 million jobs between 2011–12 and 2017–18 (Mehrotra and Parida 2019).

Widespread unease with poor industrial performance goes beyond the aggregate numbers. Imports of even simple consumer goods seem to have displaced domestic production; for example, from Ganesha idols and kites...
to electric toasters and fans are imported from China. Rising imports have reduced many domestic manufacturers to distributors and retailers of Chinese goods, selling imported goods under their labels. Though credible and granular data on production and imports of such items are hard to come by, there seems to be merit in the public perception that industrial performance has taken a serious beating.

In this context, we initiated a research programme on how to reimagine industrialisation for jobs and growth. The promotion of labour-intensive goods and their exports – to recall the theoretical arguments – was the primary reason for initiating liberal economic reforms, to encourage industrialisation in line with India’s comparative advantage.

The outcomes turned out to be different, however. Skill- and capital-intensive IT outsourcing services boomed, while manufacturing languished. Undoubtedly, the ability to move into (higher value-added) IT services – building on domestic industrial capabilities, including electronics hardware and technical education – was a creditable achievement. However, doing so by undermining domestic manufacturing was probably costly. Here is a telling evidence: in 1985, capital goods’ share in industrial production in China and India was about 20 per cent. By close to the year 2000, China’s share had risen to 30 per cent, while India’s share had shrunk to 15 per cent (Nagaraj 2007). The decline in capital goods’ share meant missing out on the positive externalities of productivity gains of manufacturing technologies (including information and communication technology [ICT] hardware) for the rest of the economy – following Verdoorn’s law (Dasgupta and Singh 2015; Felipe 2018). No large economy has moved up the development path without traversing the stage of industrialisation, history shows (Perkins and Syrquin 1989).

With industrial wages now rising in China, many labour-intensive industries are moving out to other labour-abundant countries such as Vietnam, Cambodia and Bangladesh. Can India attract such footloose global capital to reindustrialise to realise the Make in India goals? As a first step, can India retake the light manufactures that seem to have slipped out?

In light of the foregoing discussion, the research question posed is the following: How to promote employment and output growth in labour-intensive industries or labour-intensive segments of capital-intensive industries? Historically, state support for such industries has been vital (Wade 1990; Amsden 2001). So, what kind, variety and scale of state assistance could potentially help achieve the policy goals? Parenthetically, we were also interested in finding
out how Chinese imports may have affected these industries and the possible policy response to it. The research findings reported in this volume seek to answer some of these questions at the level of industrial districts, clusters and locations.

The introduction has three sections. Section I explains the research strategy and the modes of inquiry, section II offers a bird’s-eye view of findings, and section III concludes the chapter by drawing a few policy lessons.

I

Research Strategy

Research Design: Ideally, answering the foregoing questions requires detailed firm and factory (or establishment) level production and sales information. The ASI is a credible data source for factories employing 10 or more workers using power (that is, the organised sector), accounting for nearly two-thirds of the manufacturing output and about one-fifth of the employment. For the remaining, the economic census and its follow-up enterprise surveys of non-agricultural enterprises, conducted by National Sample Survey Organisation (NSSO) since 1977, are the sources. The latest one was conducted in 2015−16. However, the economic census is known to understate employment, and its output and investment data are weak (Manna 2010). Thus, using secondary data for studying labour-intensive industries that span the organised and unorganised sectors seems a difficult task.

The official data on registered micro, small and medium enterprises (MSMEs) – small industry, for short – is the other major source. Investment in plant and machinery is the defining criteria for registration under the MSME Development Act. The investment limits are periodically revised upwards; the current limits are as in Table 1.1. Since 1973−74, official agencies have conducted four censuses of registered MSMEs; the fifth census was scheduled for 2016 but was not conducted. Though a valuable source, the census results are not comparable as investment limits (cut-offs) to qualify as an MSME have been revised.

In 2016−17, MSMEs’ gross value added (GVA) was 44,05,753 crore, accounting for 29 per cent of GDP at current prices. In 2015−16, there were 196.65 lakh MSMEs in the manufacturing sector, employing 360.41 lakh workers (accounting for 31 per cent of value added and 32 per cent of all MSMEs respectively) (Annual Report, 2018−19, Ministry of MSMEs). These
estimates are based on the NSSO survey of unincorporated non-agricultural enterprises (excluding construction), 2015–16. Evidently, these estimates do not refer to the contribution of registered MSMEs.

The requirement for registration of enterprises under the MSME Development Act, 2006, is ambiguous. As the filing of information after the commencement of production is not mandatory, there is no record of working MSMEs, as evident from the following official statement:

As per the provisions of the Act, MSMEs file Entrepreneurs Memorandum (Part-I) at District Industries Centres (DICs). After commencement of the project, the entrepreneur concerned files Entrepreneurs Memorandum (Part-II)/EM-II. Prior to enactment of the Micro, Small & Medium Enterprises Development Act, 2006 (MSMED Act, 2006) there was a system of registration by small scale industrial units to the DICs. Now, filing of EM-II is discretionary for micro, small and medium enterprise engaged in both manufacturing and services. However, it is mandatory for medium scale enterprise engaged in manufacture or production of goods pertaining to any industry specified in the First Schedule of the ID&R Act, 1951.7

The official MSME data are not compatible with the ASI or the economic census estimates, as their defining characteristics are different. Moreover, a large segment of small enterprises lies outside the registered MSME sector.

Considering the foregoing problems with the official data, we chose to initiate detailed case studies of labour-intensive/industries/products/locations/clusters. We have not identified industries strictly by labour intensity criterion – as ideally required – but on shared knowledge about such industries and their activities. For instance, the automotive industry is known to be capital intensive, but many auto component industries and processes are known to be relatively labour intensive.
Admittedly, the case-study approach has its limitations, as it does not provide aggregate or a macro picture of the MSME sector. However, hopefully, these case studies will offer rich insights with realistic accounts to compensate for the lack of quantitative information, which will be helpful in drawing meaningful policy lessons. To ensure that our studies help secure an aggregate picture, we sought to spread case studies geographically as widely as possible.

For identifying locations for field surveys, ideally, one should be able to get quantitative information on labour-intensive industries. Such data are not available. Moreover, to undertake the fieldwork of factories and firms is a difficult task, requiring considerable local knowledge, language proficiency and prior experience. Social and personal connections to get access to entrepreneurs/government officials/trade representatives is a valuable resource for surveys.

Therefore, we sought to identify scholars (mostly) with prior fieldwork-based industrial research expertise (Table 1.1). In 2018, we initiated nine such case studies – from the sports goods industry in Jalandhar (Punjab) and Meerut (Uttar Pradesh) to the knitwear industry in Tirupur (Tamil Nadu), and the foundry cluster in Howrah (Kolkata urban region) to the ceramic tile industry in Morbi (Gujarat) (Map 1.1). The researchers addressed the question mentioned earlier from their preferred analytical perspectives – avoiding a cookie-cutter approach – which explains why we have used more general terms such as industrial location, cluster and district interchangeably.

Most economists believe in labour-intensive industrialisation as a proven route to development. However, scholars studying the (on-going) fourth industrial revolution – that is, artificial intelligence, virtual reality, internet of things, and robotics – have raised apprehensions over the prospects of large-scale job losses. Frey and Osborne (2013), for example, have suggested that up to 47 per cent of the total employment in the United States (US) is in the high-risk category of being automated quickly, in a decade or so.

Such dire prediction could have devastating implications for India, in an open globalised economy. In response, we considered it prudent to invite an economist specialising in technology to inform us of the potential threat of automation. The findings reported in the volume have used a unique database that tracks the application of industrial robots in India at the level of ‘tasks’ (against commonly used occupational classification). The findings suggest a sober view. Contrary to apocalyptic predictions, robots are not likely to steal manufacturing jobs, at least not yet (Chapter 11). These results, reassuringly, seem consistent with Frey’s (2019) revised, realistic, re-assessment.
Fieldwork Methodology

Ideally, fieldwork-based research should follow a well-defined statistical sampling procedure to obtain a representative account. However, often, it is not possible to get a reasonably complete list of factories and firms working in a location or an industry. District Industries Centres (DICs), the official nodal agency at the micro level, often lacks credible and up-to-date information. The
list of registered factories available with the inspectorate of factories – a factory being the primary unit of industrial production – is often quite at variance with the ground reality, as a large proportion of factories do not get (or avoid getting) registered under the Factories Act, 1948.\footnote{R. Nagaraj}

As industrial firms often operate under commercial secrecy and with ambiguous legal or commercial status, entrepreneurs many a time refuse to provide quantitative information or even spare audited balance sheet for academic research. Hence, we preferred personal, anonymous interviews. Thus, doing industrial fieldwork could be a daunting (at times, hazardous) task.\footnote{R. Nagaraj} However, rich details obtained by close observation and open-ended interviews, we believe, would compensate for the lack of quantitative accounts.

Given the challenges, the researchers followed mixed methods. They interviewed government officials at the state and district levels (such as DICs), and the local industry association(s), and sought their help in conducting the surveys. Scholars' prior professional and social acquaintances – in many cases based on their past field research in the location – often came in handy to get entry through many doors. However, to avoid potential selection bias, scholars consciously sought to survey and interview as diverse a set of firms and entrepreneurs as possible. Moreover, the information is invariably cross-checked or verified with knowledgeable people. We are thus confident that the survey material and their interpretations are a fair representation of the industry or location.

To get a glimpse of the ground reality, to wet one's feet in the fieldwork (and perhaps to whet one's curiosity), the volume editor spent 2–3 days at each location (barring one) when the scholars were in the field. As most surveys were conducted around the same time, the editor perhaps had the advantage of drawing lessons from a comparative experience of the clusters. Thus, what follows is a glimpse of the research findings – avoiding summarising each chapter – reported in the case studies as well from the editor's observations and field notes.

II

A Glimpse of Finding and Policy Lessons

*Wide Variations in Output and Employment Performance*

Ceramic tiles (in Morbi) and engineering goods (in Rajkot) were booming. The auto-ancillary cluster (in Hosur and Chennai) and the Kolkata and Tirupur
garment clusters were performing well with stable demand conditions. The iron foundries in Howrah, leather goods in Dharavi, sports goods in Jalandhar and lock manufacturing in Aligarh appeared stagnant or declining. These are bold generalisations based on extensive interviews and anecdotal evidence; no comparable hard data are available.

Employment generation appeared similar. If Rajkot reported a shortage of skilled workers, Jalandhar faced widespread underemployment, as many manufacturers turned traders and retailers, selling Chinese sports goods. Tirupur seemed to face labour shortages, and employers offered free bus service to ferry workers from nearby villages. Foundries in Howrah faced labour shortages, as the work was strenuous and hazardous, and the local workers (especially younger ones) found easier and better-paying jobs in the services in urban areas (such as running a battery-operated 3-wheeled to-to, ubiquitous in the town).

Demonetisation of high-valued currency notes in November 2016 and the introduction of the (ill-designed) goods and services tax (GST) in early 2017 seem to have hit hard the smaller among the enterprises surveyed in most locations. The bigger firms were able to get through with GST filing, as the entrepreneurs were better educated and had the ability to hire accountants for filing the returns frequently.

The inability of smaller and self-employed enterprises to cope with GST is not merely on account of their propensity to evade taxes (as alleged popularly and by many GST proponents). They are also mostly poor and illiterate, and cannot afford to engage a chartered accountant to file the GST returns. Such enterprises usually survive on the strength of skilled work and ability to use the owners and their families’ (unpaid) labour intensely with thin profit margins (with zero opportunity cost in a labour-surplus economy). As the high GST rates and the compliance costs seem to undercut the labour cost advantage of such enterprises, they are getting edged out of the market. The GST exemption limit seems too meagre to compensate for the compliance cost.

**Effect of Chinese Imports**

Jalandhar (sports goods) and Aligarh (locks) are adversely affected by Chinese imports. Lately, in Dharavi, Chinese imports have made inroads into the higher-end corporate market, leaving the cluster with lower-end, low margin mass market.

Jalandhar seems stuck in a ‘low-level equilibrium’ producing mainly traditional wood- and leather-based sports goods for football and cricket, albeit
with a stable demand. Chinese firms have captured the cream of the market, that is, exports. Newer sports items (such as badminton and tennis goods) are met by Chinese and Japanese imports (more about it later).

Aligarh has faced intense competition in the low-end domestic market from China. Demand for newer products such as automobile locks was met by imports from East Asia, as global auto firms prefer to source components from their ancillary partners in their home countries. This is a clear indication of the lack of India’s domestic capability.

Morbi’s ceramic tile industry offers a counterexample where the Chinese imports are pushed back as domestic capabilities have expanded (more about it later).

**Export Performance**

Most clusters primarily cater to the domestic market, though a small fraction of firms in these locations specialise in exports (though hard to get their estimates, either as quantities or output shares). Such firms mostly tend to be secretive and refuse to grant interviews or share information (we had some bitter experiences in Howrah and Aligarh). Hence, our information on export-oriented enterprises is sparse. Tirupur is mainly an export-oriented cluster, and Morbi has reportedly seen a rising share of exports lately.

Tirupur and Morbi are both relatively dynamic industrial centres. Firms in these locations perceive exports as the way to grow, with scope for learning by producing, and through better value addition to the raw materials – though, at the moment, they mostly produce relatively low-end (low value-added) items. These clusters, expectedly, face fierce competition in external markets, where large monopsonistic buyers squeeze profit margins (by comparing costs and delivery schedules on a real-time basis across clusters and countries). Nevertheless, entrepreneurs in Tirupur and Morbi firmly believe in the gains from exports lying in large production volumes, in the prospects of moving up the value chain and of the potential for ‘learning by doing’.

In Jalandhar, hand-stitched footballs/rugby balls are an essential export item, produced by a few relatively larger firms, supplying to wholesale traders in London (apparently, not to leading brands directly). Similarly, in Howrah, reportedly, a few large foundries export manhole (or utility hole) covers – a sanitary item – to Europe and the Middle East, historically a vital market that got eroded. The business press often suggests substantial exports from Howrah,