ROLE OF MANUFACTURING IN EMPLOYMENT GENERATION IN INDIA
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EXECUTIVE SUMMARY

The manufacturing sector is crucial for employment generation and development of an economy. Historically, the development process has witnessed a trend of people shifting from agriculture to non-farm activities such as manufacturing and services. This renders manufacturing crucial for India’s development and employment objectives. It is especially true given that agriculture comprises a minor share of GDP, but accounts for a disproportionately large share in employment.

In coming years, India is expected to witness significant demographic growth and a disproportionate expansion in the working age population. To absorb much of this labour force, the manufacturing sector would need to play an important role. Currently, the sector accounts for 12 per cent of the total employment in the country, well below its true potential.

To boost employment generation in the manufacturing sector, it is imperative to lay greater emphasis on building human capital—certain manufacturing industries such as transport equipment, petroleum and electrical machinery require specialised training that can be met through a skilled labour force. Apart from focusing on human capital, it is also essential to promote growth in labour-intensive industries such as wood, paper products and textiles.

Small and medium enterprises (SMEs) and micro small and medium enterprises (MSMEs) account for 95 per cent of the total industrial activity in India and can play a vital role in boosting employment generation. Estimates suggest, the SME-MSME sector offers maximum opportunities for self-employment as well as jobs, after the agriculture sector. In addition, the labour-capital ratio tends to be higher for SMEs and MSMEs.

The National Manufacturing Policy is a positive step; the policy envisages increasing the share of manufacturing to 25 per cent of GDP by 2022 and provide employment to 100 million people. The policy is expected to focus on: (i) improving the business environment and facilitating easy technology acquisition and development; (ii) providing access to capital for SMEs; and (iii) enhancing the private sector’s role in skill development.
1. SNAPSHOT OF INDIA’S MANUFACTURING SECTOR

Manufacturing holds a key position in the Indian economy, accounting for nearly 16 per cent of the real GDP in FY12 and employing about 12 per cent of the country’s labour force. Growth in the sector has been strong, outpacing overall GDP growth since the past few years. For example, while real GDP expanded at a CAGR of 8.4 per cent over FY05–12, growth in the manufacturing sector was marginally higher at around 8.5 per cent over the same period. Consequently, the sector’s share in the economy increased (albeit marginally) to 15.4 per cent from 15.3 per cent.

![Exhibit 1: Size of the manufacturing sector in India](image1)

**Source:** RBI, Aranca Research

![Exhibit 2: Growth in real GDP and manufacturing in India (%)](image2)

**Source:** RBI, Aranca Research
Rapid growth in the manufacturing sector has been accompanied by higher productivity and profitability of Indian manufacturing companies. As per a study\(^1\) by the Reserve Bank of India (RBI), productivity of companies was 24 per cent higher in 2005 vis-à-vis 2000. The study also identified that Indian companies achieved higher growth in profits during the same period. Although profits were expected to decline during the downturn in 2009, manufacturing companies were resilient and are returning to the pre-crisis levels or even higher—the automotive industry has reported strong growth in business activity on an increase in domestic demand and exports.

The rising competitiveness of India’s manufacturing companies is reflected in the country’s second position in the world in terms of competitiveness as per the 2010 Global Manufacturing Competitiveness Index\(^2\) (GMCI) prepared by the US Council on Competitiveness and Deloitte. The index considers market dynamics and policy issues that influence the sector. India is ahead of several developed and emerging economies such as the US, South Korea, Brazil and Japan. GMCI expects the country’s competitiveness score to improve to 9.01 (out of 10) by 2015 from 8.15 in 2010.

<table>
<thead>
<tr>
<th>Current Rank</th>
<th>Country</th>
<th>Index Score</th>
<th>Rank in 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>10.00</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>India</td>
<td>8.15</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Republic of Korea</td>
<td>6.79</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>United States of America</td>
<td>5.84</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Brazil</td>
<td>5.41</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Japan</td>
<td>5.11</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Mexico</td>
<td>4.84</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Germany</td>
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<tr>
<td>9</td>
<td>Singapore</td>
<td>4.69</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
<td>Poland</td>
<td>4.49</td>
<td>9</td>
</tr>
<tr>
<td>New add*</td>
<td>Thailand</td>
<td>-</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Deloitte and US Council on Competitiveness

*New addition among the top-10 countries. Currently, Thailand ranks 12th with an Index Score of 4.17

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\(^1\) “Profitability of Indian Corporate Sector: Productivity, Price or Growth?”, Reserve Bank of India Occasional Papers, Vol. 28, No. 3

\(^2\) based on the views of more than 400 senior manufacturing executives worldwide
These developments have significantly bolstered India’s manufacturing prowess. As per the United Nations Industrial Development Organisation (UNIDO), after China, the country is currently the largest producer of textiles, chemical products, pharmaceuticals, basic metals, general machinery and equipment, and electrical machinery. The sector’s prominence in the domestic and global economies is set to rise in FY12 as a combination of supply-side advantages, policy initiatives and private sector efforts set India on the path to becoming a global manufacturing hub.

2. CONTRIBUTION OF MANUFACTURING TO EMPLOYMENT IN INDIA

2.1 Manufacturing plays a crucial role in absorbing surplus agriculture labour

The manufacturing sector is critical for the economy’s growth as it employs 12.0 per cent of the country’s labour force as well as provides a transitional opportunity to the labour force in agriculture. In addition, the sector has a multiplier effect for job creation in the services sector. According to National Manufacturing Policy 2011, every job created in the manufacturing sector creates two-three additional jobs in related activities.

Exhibit 4
Labour distribution across different sectors (FY11)

Source: RBI (GDP data); Economic Survey (Workforce data)
Note: * workforce data is for FY10 (recent articles show manufacturing sector employs as much as 12% of the total workforce); Economic Survey FY12 uses Census 2001 data to arrive at agriculture labour force; industrial sector also includes construction
Exhibit 5
Labour intensity across manufacturing in India* (number of workers per INR hundred thousand of output generated)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Labour Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic metals</td>
<td>0.5</td>
</tr>
<tr>
<td>Rubber &amp; petroleum</td>
<td>0.5</td>
</tr>
<tr>
<td>Electrical machinery</td>
<td>0.5</td>
</tr>
<tr>
<td>Transport equipment</td>
<td>0.5</td>
</tr>
<tr>
<td>Chemicals</td>
<td>0.5</td>
</tr>
<tr>
<td>Metal products &amp; machinery</td>
<td>0.5</td>
</tr>
<tr>
<td>Food products</td>
<td>0.5</td>
</tr>
<tr>
<td>Others</td>
<td>0.5</td>
</tr>
<tr>
<td>Non-metallic products</td>
<td>1.0</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.5</td>
</tr>
<tr>
<td>Paper &amp; wood products</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Source: CII- BCG Report on manufacturing- 2010; ASI; CSO; Aranca Research;
Note: * indicates labour intensity data is for 2008

Textiles and garments, leather and leather products, and food processing are among the major employers in the manufacturing sector. As depicted in the exhibit 5, there is a significant variation in terms of volume and requisite skill sets across various industries in the manufacturing sector. For instance, the paper and wood products industry tends to be more labour-intensive compared to the electrical machinery and transport equipment industry.

According to a CII-BCG report on manufacturing, the average capital efficiency (revenues/invested capital) in the manufacturing sector is nearly 2.4 (based on an analysis of registered sector data); however, across sub-sectors, it varies from 1.4 for non-metallic products to 3.5 for food products. The average labour efficiency (revenues in INR10 million/1,000 workers as reported by the Annual Survey of Industries) is nearly INR480 million/1,000 workers. However, there is a wide variation across different industries with paper & wood generating INR70 million/1,000 workers and the basic metals industry generating INR3, 400 million/1,000 workers.

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3 CII BCG Report, Indian Manufacturing: The Next Growth Orbit, January 2010
There has been a rising perception that growth in the manufacturing sector has not been accompanied by growth in employment, as the sector exhibits lower employment elasticity. However, according to the Economic Survey FY11, there has been a continuous increase in employment in the organised manufacturing sector since FY05. The survey, based on data from the Annual Survey of Industries, shows that:

- Employment elasticity measures the percentage change in employment due to a percentage change in output.
- Based on data from the Annual Survey of Industries (ASI).
Industries (ASI), suggests that employment in the sector decelerated over FY97–FY05; thereafter, there has been a continuous rise in employment. In FY09, the latest year for which ASI data is available, there was a constant increase in the number of people employed. This is in sharp contrast to the anecdotal evidence and various surveys that indicated a decline in employment in the organised manufacturing sector. While there was an increase in the capital employed per unit of labour and output per unit of labour during the same period, growth in labour absorption was at a faster rate.  

2.2 MSMEs play a significant role in employment generation

The Micro, Small and Medium Enterprises (MSMEs) have witnessed the highest growth rate in manufacturing sector employment in recent years. As per the Annual Report – FY11 of the Ministry of MSME, Government of India, the sector is estimated to employ about 73 million workers in over 31 million units throughout the country.

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6 Economic Survey FY11  
7 Annual Report FY12, Ministry of Micro Small and Medium Enterprises, Government of India
MSMEs have consistently registered a higher growth rate vis-à-vis the industrial sector. There are over 6,000 products ranging from traditional to high-tech items, which are being manufactured by the MSME’s in India. The sector also offers maximum opportunities for both self-employment and jobs in India, after the agriculture sector.

Source: Annual Report FY12, Ministry of Micro Small and Medium Enterprises, Government of India, Aranca Research
Note: * data for FY11 is projected; ** production data is in current prices; data upto FY06 is for small scale industries. Subsequent to FY06, data is for MSMEs.
3. ROLE OF MANUFACTURING IN EMPLOYMENT GENERATION

The manufacturing sector is widely regarded as the transformational sector, for agricultural labourers moving from low skilled to more value added jobs. This is because, historically, economic development has followed a pattern of pulling people out of agriculture, moving them into non-farm activities such as manufacturing and services. The importance of the role of manufacturing (industrial sector) in absorbing surplus labour from agriculture sector has also been proved by the development experience of many developed countries and lately in various South East Asian countries.

This makes manufacturing extremely important for India, where agriculture constitutes a minor share of GDP, but accounts for a disproportionately large share in employment.

* The data for the period up to FY06 is of small scale industries (SSI). Subsequent to FY06, data for micro, small and medium enterprises (MSMEs) has been compiled.
Exhibit 13
Structural changes model

Agriculture

Industry

Services

Source: Aranca Research

Exhibit 14
Agriculture accounts for a disproportionately large share in employment

Agriculture accounts for 14.4% of the GDP

But employs 58.2% of the workforce

Source: Source: RBI (GDP data); Economic Survey (Workforce data) ; Aranca Research
Note: GDP data is for FY11, employment data is for FY10; Economic Survey FY12 uses Census 2001 data to arrive at agriculture labour force

For India—where provision of gainful high-quality employment has been a key element of goals under successive Five-Year Plans—including the 12th Five Year Plan (2012–17), robust growth in the manufacturing sector can be a potential panacea for providing employment to a vast majority of the population.

As depicted in the exhibit below, India is likely to be one of the few countries to witness a disproportionate expansion in its working-age population by 2020. Nearly 60 per cent of the population was within the working-age group (20–50 years) in 2007. The figure is estimated to reach approximately 63 per cent by 2020. The additional three per cent is expected to translate into nearly 47 million

° Boston Consulting Group (BCG) analysis, based on the data from US census bureau
additions to the working-age population. As per the International Labour Organisation (ILO), the number of people above 65 years would be 39 per cent in the US, 53 per cent in Germany and 67 per cent in Japan by the middle of the 21st century. By contrast, in India, just 19 per cent of the population is expected to be above the age of 60.

An abundant supply of people in the working-age group has the potential to boost manufacturing growth. However, to absorb much of this labour force, there is a need to lay larger emphasis on building strong human capital. This is important considering that certain manufacturing industries, such as transport equipment, petroleum and electrical machinery, require specialised training, which can be met only by skilled labour force.

On a positive note, the government has set up the National Skills Development Council to encourage private participation/management of industrial training institutes (ITIs). Among its objectives, NSDC seeks to contribute significantly (about 30 per cent) to the overall target of skilling/upskilling 500 million people in India by 2022.

The government has also unveiled the National Manufacturing Policy 2011, which aims to create to 100 million jobs in the manufacturing sector and increase the share of manufacturing in GDP to 25 per cent by 2022. To achieve this objective, the policy proposes to develop National Investment and Manufacturing Zones (NIMZs), which which will be integrated industrial townships, with world class infrastructure. In line with China’s policy of building up large economic zones, these NIMZs will be built on minimum size of 5,000 hectares. Further, to improve the business environment in the country, these NIMZs will enjoy single window clearance and a liberal exit policy. This apart, the policy also provides incentives for units in NIMZs such as exemptions from capital gains tax, and incentives for green manufacturing and technology acquisitions.
4. BOOSTING EMPLOYMENT IN MANUFACTURING: AGENDA FOR ACTION

Manufacturing sector is critical for the growth of the economy. This is because the sector tends to have a multiplier effect on other sectors in the economy. The manufacturing sector avails raw materials and services from other sectors in the economy and in turn supplies them with finished products. Hence stimulating demand for everything from raw materials to intermediate goods. Its area of influence includes sectors like software, health, and transportation. As envisaged in NMP, the manufacturing sector has the potential to provide employment to 100 million people by 2022. However, before this happens, it is important to bring about certain reforms in India’s manufacturing and labour sector. Some of the suggestions through which employment can be boosted in the manufacturing sector are touched upon below –

- **Encourage growth in labour-intensive industries:** Wood, paper products and textile industries tend to be more labour-intensive and require a large workforce, mostly unskilled with no special qualifications. By focussing on growth in these industries, it is possible to absorb the rising surplus of unskilled workers, particularly in less developed states (such as Uttar Pradesh and Bihar), where population is projected to grow 8–11 per cent by 2015.

- **Focus on MSMEs:** MSMEs are critical for the country’s economic and social development. They significantly contribute to the GDP, manufacturing output, exports and employment. In India, MSMEs account for eight per cent of GDP, 45 per cent of manufacturing output and 40 per cent of exports. Also, the labour-capital ratio is much higher in MSMEs than larger industries. Furthermore, they are considered budding grounds for entrepreneurs, thus encouraging innovation in the country. Hence, it is imperative to focus on growth in MSMEs that, in turn, would provide a fillip to the manufacturing sector as well as raise the level of employment. Globalisation has resulted in several opportunities, such as access to supply chains worldwide, for SMEs and MSMEs. However, for the sector to reap benefits from the fruits of globalisation, it is important to enhance the sector’s competitiveness. One of the options for SMEs to improve competitiveness is to adopt the cluster approach, which addresses the general problems of taxation, interest rate or FDI policies as well as harmonises and simplifies procedures including those related to labour laws.

It is also important to increase the availability of bank credit for the SME-MSME sector. Even though the sector falls in the category of priority sector lending, only 8 per cent of the total bank credit finds its way in to the sector. This is miniscule given the fact that almost 95 per cent of the total industrial sector is in the SME – MSME sector. Apart from
encouraging bank lending to the sector, it is also important to look at other ways of financing in the sector. One way could be the venture capitalist funding for SME – MSME sector, which is practised in developed countries. Other option can be better regulation and monitoring of micro finance institutions. Currently most of the micro finance institutions operating in India are either too small to make an impact or are operating with welfare motive.

- **Labour reforms**: A multitude of labour laws exist in India. There are 45 Central Acts and 16 associated rules that directly deal with labour. In addition, other acts indirectly deal with labour issues. A number of these acts prohibit companies, with more than 100 employees, from making positions redundant and firing people for any cause other than criminal misconduct. An additional 45 national laws, intersecting or derived from the Industrial Disputes Act of 1948, and about 200 state laws control the relationship between employees and employers. Rigid labour laws are potentially restricting the country’s industrial growth and impacting the very workers they are meant to protect, by preventing large scale flexible employment. Consequently, companies are increasingly resorting to outsourcing and contracting of labour. Hence, it is important to harmonise rules across all of these acts to ensure labour laws are more flexible.

- **Improve the quality of training imparted in schools and colleges**: Apart from labour reforms, the government is aware of the human capital challenge and has taken major initiatives such as setting up the NSDC to encourage private participation/management of ITIs. However, there is scope for further initiatives such as: (i) to improve the quality of teaching in schools and colleges; (ii) to increase provisions for vocational training as well as its attractiveness; and (iii) to expand the availability and feasibility of vocational education for school dropouts.

- **Enhance labour productivity**: Indian companies have made major strides in improving labour productivity in recent years. Over the last decade, the country’s labour productivity has increased significantly, but has been lower compared to China. Although India has lower wage rates than China, productivity-adjusted wage rates are equal in the two countries. India needs to make substantial efforts to close this productivity gap and remain competitive on a global level by focussing on lean manufacturing techniques and R&D.

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10 Ministry of Labour & Employment, Government of India
11 CII - BCG Analysis
5. CONCLUSION

The ability of the manufacturing sector to absorb excess labour from the agriculture sector and shift the same to services renders it the driving force in the development process of an economy. While, the Indian manufacturing sector has witnessed remarkable growth in recent years; its contribution to GDP and employment is well below its true potential.

The manufacturing sector would need to play a crucial role for India to achieve its goal of employment generation. There is a need for strong commitment from the government as well as the industry for the sector to enter the next orbit of high growth and employment generation. Also, there is a need for a robust labour policy, which strikes the right balance between workers’ rights and competitive needs of the manufacturing sector. Furthermore, it is important to enhance the productivity of the labour force by enhancing the quality of training.

If the National Manufacturing Policy achieves its objectives, it has the potential to render the manufacturing sector a driving force in India’s economic development.
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