Chapter

CAN "MAKE IN INDIA" MAKE IT? THE CASE FOR A STRONGER MANUFACTURING BASE FOR SUSTAINABLE GROWTH

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INTRODUCTION

At a time when the liberal capitalist economies of the West are still suffering from a lack of demand and chronically slow growth rates in the aftermath of the global financial crisis, and China continues to grow, yet at consistently slower rates, India's economic performance has been remarkable. According to World Bank data, India's GDP has grown by 7.6 percent in 2016; and latest figures that are available show that India has the ninth fastest growing economy in the world, while, among the G20 members, it is the leading economy in terms of growth rates.[1] Moreover, India is also expected to further expand its economic clout and become one of the economically most dominant countries in the global system. According to the "index of economic dominance" constructed by Arvind Subramanian who measured countries' share of global economic power using weighted averages of their shares in world GDP, trade and net capital flows, India will be

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[1] The comparison is made by the web site Trading Economics using quarterly data as of the end of December 2016. Accordingly, India comes behind Iceland, Iraq, Ethiopia, Ivory Coast, Uzbekistan, Cambodia, Ireland, and Bangladesh. The G20 member that ranks closest to India in this list is China, which is in twelfth place. Source: "GDP Annual Growth Rate Countries List", Trading Economics, http://www. tradingeconomics.com/country-list/gdp-annual-growth-rate, (accessed on 8 April 2017).

the world's third economically dominant power with a share of 6.3 percent in global economic power, after China with 18.0 percent and the United States with 10.1 percent.[2]

India has not only registered unprecedented growth over the past two decades, but it is also on its way to become the world's most populous country, expected to surpass China in the near future.[3] A high growth economy with an enormous domestic market and large pools of labor to tap surely appears to be well positioned to rise to an economic powerhouse status within the global economy, as China did before. However, continuous strong growth is not preordained, and while India's past data reveals sizeable volatility in growth, the road to world economic domination envisaged as envisaged by Subramanian will be beset with challenges that undermine sustainability of India's economic development.

This chapter argues that India's key challenge is the relative weakness of the manufacturing industry against the conventional sources of growth such as services and agriculture. While past reforms—particularly those undertaken during the early 1990s—have led India to a successful performance through the emergence of a world-class services sector combined with a sizable agriculture industry, sustaining growth in the long run will require a move towards a stronger manufacturing base. Within this framework, recent initiatives aimed at improving India's manufacturing capabilities, such as the 'Make in India' program commenced under the current government led by Narendra Modi, can be useful, under the condition that the development in this field occurs in tandem with further gains in services and agriculture, increase in productivity, and a narrowing of regional disparities between India's provinces.

INDIAN PATH OF GROWTH

India's growth since the country's independence in 1947 is characterized by a consistent acceleration with severe volatilities that emerged in the form of cycles of sharp declines followed by recoveries, which Rakesh Mohan and Muneesh Kapur call "interregnum" periods in a continuous growth process.[4] A complex system of inward-looking socialist economic controls installed in the early periods within a statist approach

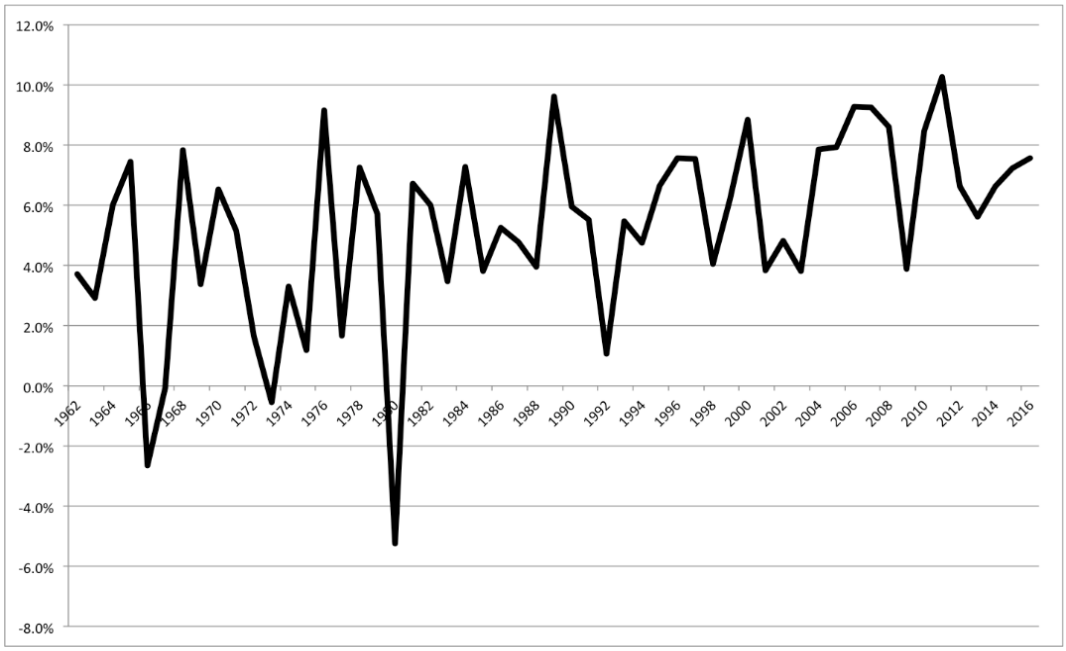
[2] Arvind Subramanian, "Eclipse: Living in the Shadow of China's Economic Dominance", (Peter G. Peterson Institute for International Economics, Washington D.C.: 2011), pp.100-104.

[3] According to the World Population Prospects database of the Department of Economic and Social Affairs of the United Nations (UN), China's population was 1,382,323,000 and India's population was 1,326,802,000 in 2016. UN forecasts that India will surpass China as the world's most populous country in 2022 when it will have a population of 1,418,681,00 against China's 1,409,375,000. Source: "Data Query: Total Population", World Population Prospects: the 2015 Revision, https://esa.un.org/unpd/wpp/DataQuery, (accessed on 9 April 2017).

[4] Rakesh Mohan and Muneesh Kapur, "Getting India Back to the Growth Turnpike: What Will it Take?", *India Review,* Vol. 14, No. 1, (2015), p.129.

produced a certain level of industrialization, but confined India's economy to the so-called "Hindu rate of growth" of about 3 percent a year until the 1980s.[5]

Real change in Indian economy began in the early 1990s, with a reform process aimed at economic liberalization. Dismantling the state controls on private economic activities unleashed the Indian population's entrepreneurial capabilities; economic growth became less volatile and reached a higher average rate than in the preceding decades; and the global integration of India helped to link Indian economy with the rest of the world. In the early 2000s, a growth pattern that privileged knowledge intensive services and capital-intensive manufacturing over labor-intensive manufacturing, together with a sprawling agricultural sector that employed the majority of the vast labor force produced increasing growth rates for India, a "golden era of growth" between 2003 and 2008.[6]



Source: Prepared using World Bank data.

Figure 1. India's annual GDP growth rates.

The global financial crisis that erupted in 2007-2008 led to a "sudden stop" in India's economic growth due to interruption of capital inflows and a collapse of both external and domestic demand.[7] The government's response came in the form of loose monetary

[5] For a detailed in-depth analysis of the historical development of Indian economy as well as an inquiry into the relationship between democracy and development in Indian context, see: Atul Kohli, *Democracy and Development in India: From Socialist to Pro-Business,* (Oxford University Press, New Delhi, 2011).

[6] Ibid, p.130.

[7] Mathew Joseph, "Global Financial Crisis: How was India Impacted?", paper presented at *InWent-DIE Conference on Global Financial Governance*, 2-3 September 2009, Berlin, Germany.

policies and a number of fiscal stimulus packages that helped to cushion the drop in demand. As a result, Indian growth returned to its growth path, as evident in the corresponding V-shaped turn in Figure 1, and reached double-digit rates in 2012.

Figure 1 also shows the reversal of India's economic fortunes after 2012. A slowing down of the growth rate has been the case in this period, and while a number of factors have contributed to this development, such as the overshooting of the stimulus, high inflation caused by the fiscal stimulus, squeezing of the domestic resources for the private sector, and the rising current account deficit, a key feature of the slowdown was the "near collapse" of manufacturing growth, which in turn was caused by the absence of incentives for new investments.[8] India's annual growth rate, which was 5.6 percent in 2013, reentered an acceleration phase the next year when general elections were held and the Modi government entered into the office. While this development was welcomed by different strata of the Indian society, the question of sustainability is still looming large.

The weakest link in the Indian economy is the weakness of the manufacturing sector. According to latest available data, manufacturing corresponds to 12.9 percent of the GDP,[9] which is at least six percentage points below where it should be at India's current stage of development.[10] Manufacturing is the foundation of sustainable development and employment growth in emerging economies, and is still the missing pillar in the foundations of India's economic growth. While a developed services sector employs the country's well educated and skilled urban labor force, and agriculture absorbs large swathes of the rural population, the absence of a strong labor-intensive manufacturing means a lack of employment opportunities for the relatively lower skilled urban unemployed. The share of manufacturing in Indian economy is not increasing, and in fact, it is currently lower even than its levels in the early 1960s.

As evident in Figure 2, services are the primary source of economic development in India, and they increasingly dominate the sectoral distribution of India's GDP. Reforms that were launched in early 1990s had a positive impact on Indian service industries by relaxing regulations, particularly those on foreign direct investment (FDI), by reducing government involvement and increasing the space for the private sector. Moreover, easier access to imported high-quality capital equipment has been key to growth in services.[11] Currently, finance, insurance and business services contribute to 32.5 percent of the total output in India's services, followed by trade-related services with 26.5 percent,

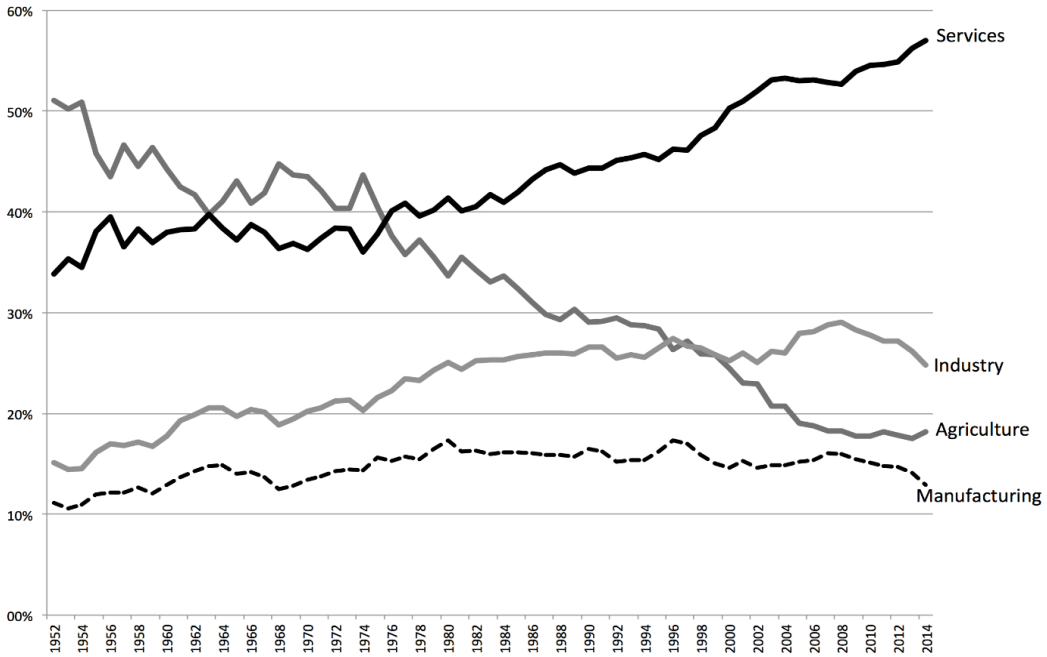
[8] Mohan and Kapur, "Getting India Back to the Growth Turnpike: What Will It Take?", p.133.

[9] According to the latest available data from India's Central Statistics Office, India's GDP totaled 104.7 trillion rupees, in which manufacturing share was 12.9 percent, corresponding to 13.5 trillion rupees. Data obtained through CEIC database, https://insights.ceicdata.com/insight/9e4da03c-a65c-46bc-a4e6-62b7ff9c0c7f/data, (accessed on 7 April 2017).

[10] Ruchir Sharma, "Breakout or Washout?", *Reimagining India: Unlocking the Potential of Asia's Next Superpower,* (Simon & Schuster, New York, 2013), p.14.

[11] Barry Bosworth and Susan M. Collins, "India's Growth Slowdown: End of an Era?", *India Review,* Vol. 14, No. 1, (2015), p.15.

community and social services with 25.5 percent, real estate by 21.6 percent, and transport, storage and communication with 13.1 percent.[12] These services are not only the drivers of India's growth, but they are also major earners of export revenues. In merchandise trade, India has a deficit. In 2016, India's exports totaled $261.0 billion, against imports of $356.7 billion. While the lack of a strong manufacturing base is clearly a reason behind this large deficit in merchandise trade,[13] this deficit is partially offset in services trade. In 2015, latest year for which services trade data was available at the time of writing; India's services exports amounted to $155.7 billion, whereas imports were $123.1 billion. In the same year, telecommunications, computer, and information services made up 37.1 percent of all commercial services exported by India, followed by other business services with 31.3 percent.[14]



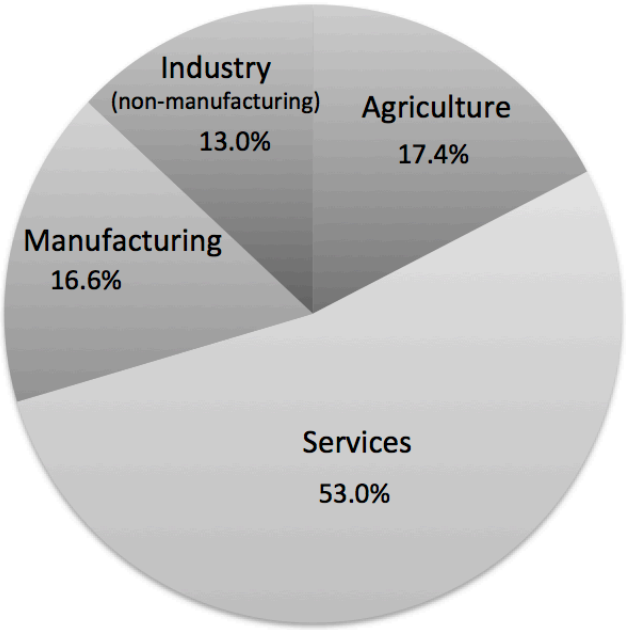
* Note: Industry share in GDP includes the share of manufacturing.
Source: Author's calculations using data from India's Central Statistics Office.

Figure 2. Shares of Sectors in India's GDP.

[12] Author's calculations using latest available data from India's Central Statistics Office, obtained through CEIC database, https://insights.ceicdata.com/insight/9e4da03c-a65c-46bc-a4e6-62b7ff9c0c7f/data, (accessed on 7 April 2017). For a discussion on the diversity of India's service industries, see: Barry Eichengreen and Poonam Gupta, "The Service Sector as India's Road to Economic Growth", *NBER Working Papers 16757,* (Cambridge, National Bureau of Economic Research, 2007).

[13] India's major export items are non-manufactured products, such as precious metals and stones, and petroleum oils.

[14] All the trade data in this section are obtained through ITC Trade Map, http://trademap.org, (accessed on 7 April 2017).



Source: Author's calculations using data from India's Central Statistics Office.

Figure 3. Sources of value added in India's economy (2016).

The domination of services in India's economy is also evident with respect to the value added provided by each sector to the economy. As seen in Figure 3, services sector is by far the largest source of value added in India's economy.

Figure 3 reflects the situation of the Indian economy as of the year 2016. However, when figures for the last five years are compared, a similarly crucial trend becomes evident: Services are in fact increasing their share in the gross value added in the Indian economy. Between 2012 and 2016, this share increased from 49.0 percent to 53.0 percent, while the share of manufacturing went down from 18.5 percent to 17.4 percent in the same period.[15] In other words, services are and continue to be, in an increasing way, the main lifeline of India's economy.

In this picture, agriculture still has a vital position for Indian economy. Agriculture's share in the GDP and in value added generated for the economy has been falling, as India sought to diversify what has been a largely rural economy into services and industry. Although the economy's dependence on agriculture has declined in recent decades, crop farming and livestock breeding, both of which are overwhelmingly done at the subsistence level, is still the major, and in many cases the only source of income for millions of families in rural India. The problem is that productivity in Indian agriculture is extremely low, due to a number of reasons, such as the small size of land holdings

[15] Author's calculations using data from India's Central Statistics Office, obtained through CEIC database, https://insights.ceicdata.com/insight/664c166b-82d1-4f83-a17f-2c86eb5b2cfe/data, (accessed on 9 April 2017).

which limits the applicability of capital-intensive farming methods, exposure to weather uncertainties, disincentives to improvements caused by the emphasis on government subsidies, fraud and waste.[16] Indian agriculture yields continue to remain far below the Asian average.

Compared with the well-developed services sector and the expansive agricultural sector, industry remains considerably weak and underdeveloped in India, which in fact contrasts starkly with the East Asian development experience, where growth has taken off after low value added labor-intensive manufacturing supplemented subsistence farming, production oriented towards exports, manufacturing climbed the ladders of value added moving from labor-intensive products to capital and technology intensive ones, and services following afterwards. In India, services developed earlier, manufacturing and industry in general came from behind.

Manufacturing is the largest sub-sector in Indian industry in terms of contribution to the total output.[17] According to latest available data, manufacturing contributed to 52.0 percent of total output in industry, while construction came second with a share of 31.5 percent, followed by mining and utilities with 8.6 percent and 7.8 percent respectively.[18] The problem with manufacturing is, however, its poor performance over the years and a lack of standards. "Indian manufacturing has not been a performer despite its hey days in public sector enterprises," writes Pankaj Chandra, and provides a vivid description of the state of Indian manufacturing: "Though it must be accepted that it has never been dormant and has often changed its structure—from distributed to large to mass to small and medium. From textile mills, steel plants, and railway coach factories and sugarcane mills, bicycle producers and garment factories to automotive plants, pharmaceutical firms and chemical factories and aviation manufacturing and consumer electronics assembly—the historical journey of Indian manufacturing has been quite fascinating. It traverses the whole continuum of capabilities—wholly modern to wholly backward—the modern automotive sector in Tamil Nadu to the outmoded bangle factories of Firozabad or the cracker cluster in Hosur or the brick production units all over the country. It is this diversity—some that deploy large number of workers through very unsafe processes and practices to those factories that are world class in both practices and performance—that obfuscates our understanding of manufacturing in India."[19]

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[16] Bosworth and Collins, "India's Growth Slowdown: End of an Era?", pp.12-13.

[17] According to the International Standard Industrial Classification of All Economic Activities issued by the United Nations, the industry sector covers manufacturing, mining, utilities and construction. See: "ISIC Rev. 4", United Nations Statistics Division, https://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27&Lg=1, (accessed on 10 April 2017).

[18] Author's calculations using latest available data from India's Central Statistics Office, obtained through CEIC database, https://insights.ceicdata.com/insight/9e4da03c-a65c-46bc-a4e6-62b7ff9c0c7f/data, (accessed on 7 April 2017).

[19] Pankaj Chandra, "Pivoting Indian Manufacturing Policy Differently", *India Review,* Vol.14, No.1, (2015), p.111.

In recent years, especially after 2012, the industrial sector accounted for the bulk of the slowdown in India's GDP and the poor performance of manufacturing has been a major reason behind this fact. Inadequacies in physical infrastructure, a weak financial system, excessive bureaucracy and poor execution capabilities of the state apparatus, lack of adequate human resources, and the absence of links with global supply chains are considered as the major reasons of the weakness of manufacturing in India.[20] Moreover, the two-tiered structure of the sector, composed of an organized sector that includes firms that are registered with the government, and an unorganized sector that is unregulated and composed of small-scaled firms is another obstacle against sectoral development. Organized sector, which accounted for 71.5 percent of the total production in manufacturing, generates only around 20 percent of total employment and continues to suffer from excessive red tape, while the unorganized sector employs more people but is less productive.

Transformation of the manufacturing sector is a vital *sine qua non* for India's economy. However, in addition to all the obstacles listed above, there does not exist a consensus on the path manufacturing in India should take in the future either. Debates are going on whether India should focus on the efficiency of mass production or the flexibility of high variety production, on labor driven manufacturing or capital driven manufacturing, on low-tech production or high-tech production.[21] Whichever way India chooses, strengthening the manufacturing base is a vital necessity for sustainable growth in this country. This is why, after coming to power in 2014, the government of Narendra Modi prioritized the development of manufacturing in its economic agenda, and launched the assertive 'Make in India' initiative that aims to serve this purpose.

THE 'MAKE IN INDIA' INITIATIVE

'Make in India' is an initiative launched by the Modi government to improve the manufacturing capabilities of the country by encouraging both domestic companies and multinational corporations to invest in manufacturing in India. Prime Minister Modi, who officially launched the program on 25 September 2014, stated in a later speech: "We launched the Make in India campaign to create employment and self-employment opportunities for our youth. We are working aggressively towards making India a global manufacturing hub. We want the share of manufacturing in our GDP to go up to 25 percent in the near future."[22]

[20] Ibid; see also Bosworth and Collins, "India's Growth Slowdown: End of an Era?", p.14.
[21] Chandra, "Pivoting Indian Manufacturing Policy Differently", pp.113-117.
[22] Remarks from Modi's speech at the launch of the Make in India Week in Mumbai, 13 February 2016. For the full text of the speech see: "PM's Speech at Inauguration of Make in India Week, Mumbai", Office of the Prime

Increasing manufacturing share in GDP from its current 12.9 percent to 25 percent, and doing so, as Modi pointed out, by the year 2022, will be a challenging task, and it remains to be seen to what extent the initiative will be able to deliver or whether it will remain in the realm of rhetoric. In addition to increasing the share of manufacturing in national output, the vision brought forward by the 'Make in India' initiative also encompasses the following:

- An increase in manufacturing sector growth to 12-14 percent per annum over the medium term.
- To create 100 million additional jobs by 2022 in manufacturing sector.
- Creation of appropriate skill sets among rural migrants and the urban poor for inclusive growth.
- An increase in domestic value addition and technological depth in manufacturing.
- Enhancing the global competitiveness of the Indian manufacturing sector.
- Ensuring sustainability of growth, particularly with regard to environment.[23]

The initiative targets a total of twenty-five sectors, which include Employment-intensive industries like textiles and garments, leather and footwear, precious stones and metals, and food processing industries; capital goods industries like machine tools, heavy electrical equipment, heavy transport, earthmoving and mining equipment; industries with strategic significance like aerospace, shipping, IT hardware and electronics, telecommunication equipment, defense equipment and solar energy; and industries where India enjoys a competitive advantage such as automobiles, pharmaceuticals and medical equipment.[24] In order to improve the manufacturing base in all these sectors by encouraging more domestic and foreign, the government of India is to establish new National Investment and Manufacturing Zones (NIMZs) where manufacturing activities will be supported through incentives and subsidies, regulatory environment will be simplified and paperwork will be reduced, there will be a focus on acquisition and development of technology; measures to protect the environment will be taken; small and medium scaled enterprises will be provided with special benefits; and public procurement will be considered with stipulation of local value addition in specified sectors.

Minister of India, http://www.pmindia.gov.in/en/news_updates/prime-ministers-speech-at-inauguration-of-make-in-india-week-mumbai, (accessed on 9 April 2017).

[23] "National Manufacturing", Make in India web site, http://www.makeinindia.com/policy/national-manufacturing, (accessed on 9 April 2017).

[24] Ibid. For a full list of all the sectors covered by the 'Make in India' initiative together with their specific details, see: "Focus Sectors", Make in India web site, http://www.makeinindia.com/sectors, (accessed on 10 April 2017).

So far the government of India seems to be satisfied with the progress of the initiative. The official website of 'Make in India' boasts: "In a short space of time, the obsolete and obstructive frameworks of the past have been dismantled and replaced with a transparent and user-friendly system that is helping drive investment, foster innovation, develop skills, protect intellectual property and build best-in-class manufacturing infrastructure. The most striking indicator of progress is the unprecedented opening up of key sectors–including railways, defense, insurance and medical devices–to dramatically higher levels of foreign direct investment."[25] There is certainly a degree of truth to claims of progress, and while it would be too far-fetched to claim direct causality between the increasing pace of economic growth in India since 2014 and the 'Make in India' initiative, a correlation between the two can perfectly exist. Statistics, however, require us to proceed cautiously.

FDI to India is increasing. According to data released by the Reserve Bank of India, total FDI flows to the country, which amounted to $24.7 billion in the fiscal year of 2014-15, went up to $36.1 billion in 2015-16. This is certainly a positive development, however it is also true that the FDI is coming, ironically, for the services sector, rather than manufacturing. Reserve Bank data also shows that between the two fiscal years mentioned above, FDI attracted to the services sector went up from $11.3 billion to $20.8 billion, a 84.3 percent increase, while FDI to manufacturing actually declined from $9.6 billion to $8.4 billion, a 12.2 percent decline.[26] Moreover, between 2014 and 2016, while the gross value added generated by manufacturing for India's economy has increased in nominal terms from 18.8 trillion rupees to 22.8 trillion rupees, manufacturing share in the total value added generated in the economy remained almost constants, moving up only slightly from 16.5 percent to 16.6 percent, while for the services a rise from 50.6 percent to 53.0 percent has been the case.[27] In the meantime, the share of manufacturing in the sectoral distribution of Indian GDP continues to decline, while services continue their ascent. To sum, the picture is mixed so far.

THE ROAD AHEAD

The argument brought forward in this chapter is that under the right policy environment, wherein the key structural challenges faced by India are addressed, the

[25] "About Us", Make in India web site, http://www.makeinindia.com/sectors, (accessed on 10 April 2017).
[26] Data obtained from "Foreign Direct Investment Flows to India: Country-wise and Industry-wise", Reserve Bank of India, https://www.rbi.org.in/Scripts/AnnualReportPublications.aspx?Id=1194, (accessed on 10 April 2017).
[27] Author's calculations using data from India's Central Statistics Office, obtained through CEIC database, https://insights.ceicdata.com/insight/664c166b-82d1-4f83-a17f-2c86eb5b2cfe/data, (accessed on 9 April 2017).

'Make in India' initiative can achieve its objectives and help turn India into a global manufacturing powerhouse.

India has a number of strengths that can be capitalized upon. To start with it is already a growth economy, on its way to become one of the most dominant economies in the global system. The country has a favorable demographic dividend that would last for the next decades, a quality workforce, and low labor costs. Moreover, there is a large domestic market to tap into, which is another attractive element for prospective investors. Strengths of India are described in a survey by the international accounting firm AT Kearney as follows: "India has several strengths that could help it become a manufacturing powerhouse: a large pool of engineers, a young labor force, wages that are half that of China's, and significant domestic consumption of manufactured goods. These factors become especially important as China, the world's preeminent manufacturing destination, faces peak labor shortages and exponential wage growth."[28]

A closer look at numbers reveals that these advantages of India are real and significant. India has one of the largest pools of labor in the world, with a labor force of 502.1 million as of 2015.[29] While Asia's work force in general is set to shrink in size over the coming decades, India is expected to overtake China as Asia's largest source of workers.[30] Moreover, these workers will come with a cost advantage. As seen in Figure 4, India is one of the countries in Asia where labor costs in manufacturing are the lowest.

The combination of a vast labor pool and significantly low labor costs appear to offer a winning formula for India to replace China as the new global manufacturing powerhouse. However, in order for the 'Make in India' initiative to achieve this goal, it needs to address a serious challenge related to the labor force: shortage of skills. This issue is perfectly illustrated in the words of the governor of the Reserve Bank of India, Raghuram Raja, who described the problem as follows: "Yes we've got really smart computer engineers and we've got scientists who've put a satellite on its way to Mars but what we really are short of is in the middle layer: The good quality factory workers who have high-school degrees, who can do reasonable maths, the capable plumbers, the construction engineers who can build roads and bridges… We have a lot of those because we are a populous country but we don't have enough. We need to create more of them in a hurry."[31]

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[28] "Make in India: How Manufacturing in India Can Become Globally Competitive", AT Kearney, https://www.atkearney.com/documents/10192/6551615/Make+in+India+-+How+Manufacturers+Become+Global+Competitors.pdf, (accessed on 7 April 2017).

[29] "India Labor Force," Index Mundi, http://www.indexmundi.com/india/labor_force.html, (accessed on 10 April 2017).

[30] Sandrine Rastello, "India to Emerge As Winner from Asia's Shrinking Labor Force", Bloomberg, https://www.bloomberg.com/news/articles/2015-11-09/india-to-emerge-as-winner-from-asia-s-shrinking-labor-force, (accessed on 10 April 2017).

[31] "RBI Governor Rajan Warns of Global Policy Breakdown", Bloomberg, https://www.bloomberg.com/news/videos/b/6ac0352d-cc11-4afd-a867-b40b6ca22915, (accessed on 10 April 2017).

Country	Average wage (US$)	Country	Average wage (US$)
Korea	3,389	China	668
Singapore	3,002	Vietnam	212
Japan	2,927	Indonesia	177
Malaysia	744	India	135

Source: Author's calculations using Trading Economics data, "Wages in Manufacturing Countries List", Trading Economics, hattp://www.tradingeconomics.com/country-list/wages-in-manufacturing, (accessed on 8 April 2017).

Figure 4. Average monthly wages in manufacturing.

While quantity is a major competitive advantage for India with respect to human resources, quality remains as a serious shortcoming. Literacy is still an issue in India and the country ranks significantly low in international comparisons in this respect with an overall adult literacy rate of 72.2 percent, which compares poorly with the world average of 85.3 percent, and Asian average of 84.5 percent.[32] India has expanded enrollment in education over the past years, with the gross enrolment ration rising from 54.2 percent to 74.3 percent in secondary education between 2005 and 2015, and from 10.7 percent to 25.5 percent in tertiary education over the same period.[33] However, there are serious concerns about the effectiveness of the education provided in India's institutions. For instance, India has a total of 6,214 engineering and technology institutions which are enrolling 2.9 million students, and around 1.5 million engineers are released into the job market every year. However, due to the dismal state of higher education in the country only seven percent of the graduates have adequate skills to be employed.[34] In the meantime, vocational schools are not adequately equipped to train workers, and companies have to rely on on-the-job training.[35] Pankaj Chandra illustrates the dilemma that Indian manufacturing is facing: "Those who are available for employment in manufacturing do not have the requisite skills and those who possess skills are not viable to manufacturing."[36]

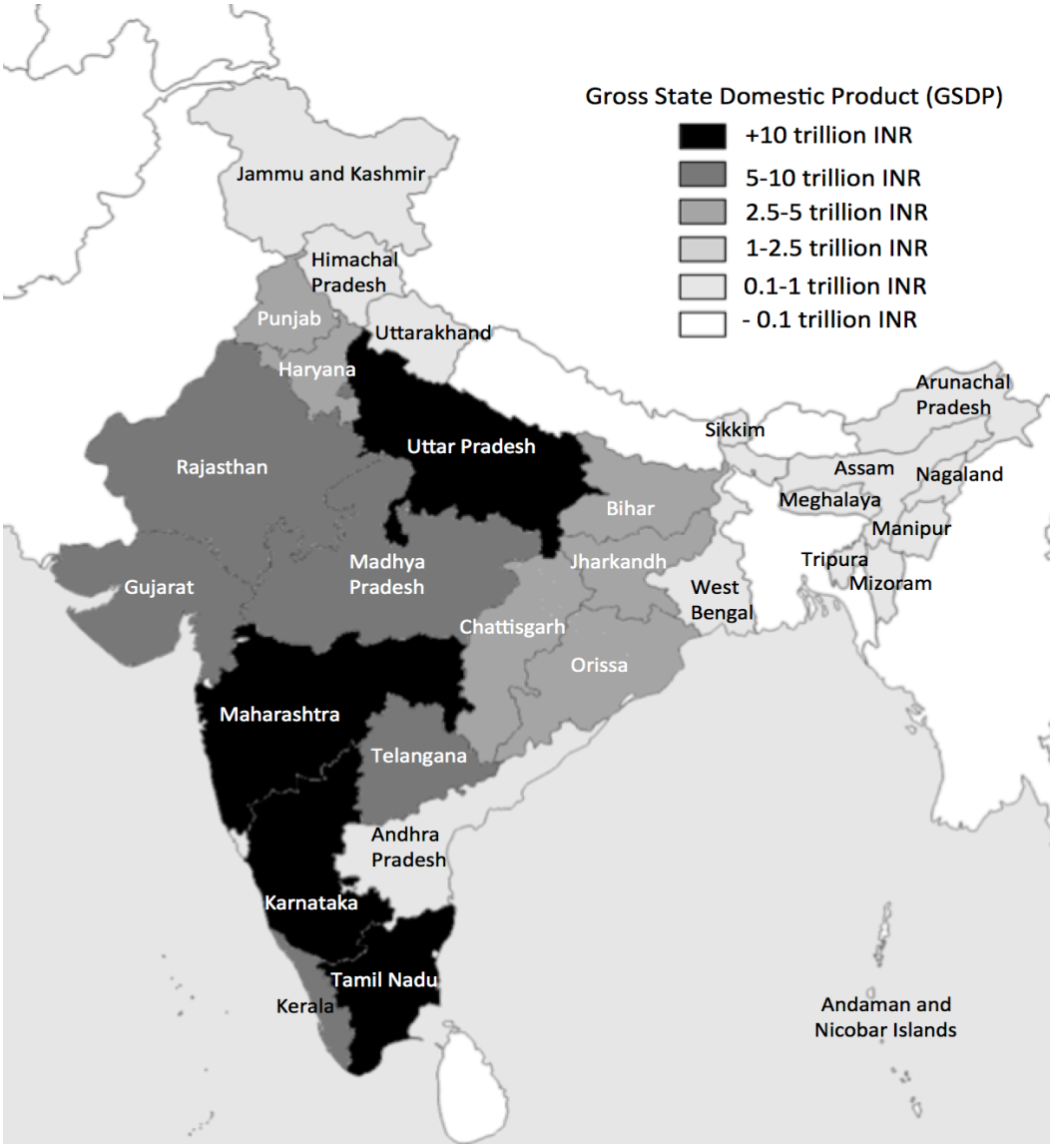
In other words, the amount of skilled labor that the Indian education system is able to produce is employed by the services sector, and while manufacturing has plenty of unskilled labor to rely on for low value added production, those sub-sectors of manufacturing that require greater skills to produce higher value added suffer from lack of human capital. Better education can turn unskilled or low skilled workers into

[32] Adult literacy rate in India is 63.0 percent for women and 80.9 percent for men. These ratios are also significantly lower than the world averages of 81.5 percent for women, and 89.21 percent for men. See: "Education", UNESCO Institute for Statistics, http://data.uis.unesco.org/Index.aspx?DataSetCode= EDULIT_DS, (accessed on 10 April 2017).
[33] Ibid.
[34] Roshni Chakrabarty, "Only 7 percent Engineering Graduates Employable: What's Wrong with India's Engineers?", India Today, http://indiatoday.intoday.in/education/story/engineering-employment-problems/1/713827.html, (accessed on 10 April 2017).
[35] "Make in India: How Manufacturing in India Can Become Globally Competitive", p.4.
[36] Chandra, "Pivoting Indian Manufacturing Policy Differently", pp.119.

industrially efficient actors of production, while skilled individuals can be attracted to manufacturing by focusing on innovation, research and development and higher value added in manufacturing. In this way, the vicious cycle of a low value added manufacturing sector attracting low skilled labor, can be broken and turned into a virtuous cycle wherein investment in innovation and research and development will increase the value added of production, thus attracting higher skilled workers, who will further develop the content of the production. For 'Make in India' to succeed, it needs to be accompanied by increased investment in education, skill development, innovation, research and development, high-tech manufacturing rather than low-tech labor intensive manufacturing, as well as by reforms in the labor market to facilitate better allocation of labor resources, such as more flexible regulations designed to reduce frictions and inefficiencies.[37]

'Make in India' initiative is involved in upgrading India's manufacturing base, however, in order for the project to be successful its relationship with the agricultural sector needs to be carefully maintained and nurtured. Agriculture is a major source of rural employment and there is no other way of alleviating poverty in a country like India without raising agricultural productivity levels. In the meantime, expanding manufacturing leads to rising incomes for larger portions of the population, which in turn can be expected to increase food demand, and this demand needs to be met by greater productivity in agriculture.[38] It also needs to be noted that investment in manufacturing innovation, research and development can benefit the manufacturing sector by producing high–tech agricultural equipment and machinery. More importantly, as Era Dabla-Norris and Kalpana Kochhar discuss in detail, "successful structural transformation occurs when the agricultural sector, through higher productivity, provides food, labor, and even savings to the process of industrialization. Agriculture in India plays a very important role not only for rural livelihoods but also for the manufacturing sector. About 50 percent of the income generated in the manufacturing sector comes from agro-based industries."[39] In other words, success with 'Make in India' requires a resilient agriculture sector with growing productivity and efficiency, because manufacturing and agriculture feed into each other.

[37] Ila Patnaik and Madhavi Pundit, "Where is India's Growth Headed?", *India Review,* Vol.15, No.3, (2016), p.341.
[38] Bosworth and Collins, "India's Growth Slowdown: End of an Era?", p.13.
[39] Era Dabla-Norris and Kalpana Kochhar, "India: In Search of the Drivers of the Next Wave of Growth", *India Review,* Vol.14, No.1, (2015), p.164.



Source: Prepared using data from India's Central Statistics Office.

Figure 5. Economic output of India's provinces.

Finally, 'Make in India' project cannot produce the desired results if its effects are not spread widely and equally across the states of India. India is a federation composed of 29 states and seven union territories. There are significant discrepancies between these administrative units in terms of economic size, growth, literacy, and manufacturing capacity. Moreover, all the states, and two of the union territories have their own legislatures and governments. It is natural that the prospective investments that are to be drawn through the 'Make in India' initiative will choose to go to economically more prosperous states, which have also better business environments. In fact, early evidence shows that this is precisely the case. For instance, the Taiwan-based manufacturing giant

Foxconn is expected to spend $5 billion on factories and research and development in the western Indian state of Maharashtra,[40] which happens to be the state with the largest gross state domestic product (GSDP) in India, with 17.9 trillion rupees as of 2015.[41] Maharashtra not only has "high literacy rates, GDP, industrial and manufacturing growth, and additionally, a strategic coastal location" but also "with a majority in the parliament's lower house, the Lok Sabbha, the BJP's latest victory in Maharashtra must have also given a boost to business investment."[42] General Motor's (GM) automobile factory, which the company intends to turn into a global export hub through further investments encouraged by 'Make in India' is in Taleagon, which also happens to be in Maharashtra.[43] Toshiba opened a steam turbine generator factory in India and made its first delivery from this facility in August 2016. The factory is located in Chennai, Tamil Nadu, the second largest Indian province in terms of economic size, with a GDP of 12.1 trillion rupees as of 2016.[44]

The 'Make in India' initiative needs to take into account the specific characteristics of the different states of India and ensure that new investment will be attracted not only to the most prosperous provinces, but there will be enough incentives so that other provinces will get their share as well. Only through such a positive discrimination can sustainable economic growth be achieved and disparities can be narrowed down. Otherwise, more investment through 'Make in India' going only to the already-better-off provinces would only serve to deepen the disparities, jeopardize sustainability, lead to increased migration, and disturb the patterns of labor in both industry and agriculture.

CONCLUSION

After the reform wave of the early 1990s, India has witnessed a large improvement in economic growth albeit coupled with similarly large volatilities. A development model based on well-functioning and productive service industries and a large agricultural sector helped the Indian economy to achieve impressive growth figures, but sustainability was and continues to be an issue. This chapter argued that in order to achieve sustainability, and o create enough jobs for the rapidly increasing population of the country, the missing link of the picture needs to be completed in the form of a robust

[40] Priyanka Kakodkari, "Maharashtra Production Expected to Begin this Year: Foxconn", The Times of India, http://timesofindia.indiatimes.com/business/india-business/maharashtra-production-expected-to-begin-this-year-foxconn/articleshow/56303932.cms, (accessed on 10 April 2017).

[41] GSDP data from India's Central Statistics Office, obtained through CEIC database, https://insights.ceicdata.com/insight/be868853-6af3-490e-bfa0-cd7333d83c47/data, (accessed on 10 April 2017).

[42] Anna Juhos, "What to Make of 'Make in India'?", KKI Studies, (2016), p.21.

[43] "GM India's Exports More than Double this Year", The Hindu, http://www.thehindubusinessline.com/companies/gm-rolls-out-beat-for-argentinian-market/article8576002.ece, (accessed on 10 April 2017).

[44] "Toshiba Ships First 'Make-in-India' Super-critical Steam Turbine Generator from Chennai Facility", Toshiba Press Release, https://www.toshiba.co.jp/about/press/2016_08/pr2201.htm, (accessed on 10 April 2017).

manufacturing base. The ‘Make in India’ initiative launched by the current government can be helpful in this sense by attracting more local and foreign investment to the economy, however its effect will be extremely limited if it is not accompanied by investments in human capital, technology, if it does not maintain and further improve the link between manufacturing an agriculture, and if it does not make sure—or at least make genuine efforts to that end—that the wealth created through manufacturing is dispersed equally among the different regions of the country. India is already a major global economic power, and if managed and implemented well the ‘Make it India’ project can take the country to a new level of economic development, where India would be “the factory of the world”, “the call center of the world”, and a “self-sufficient agriculture depot” at the same time.