9 Avoiding Premature Deindustrialization in India: Achieving SDG9

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9.1 Introduction

Industrialization is the process of structural transformation through which resources (especially labor) move from agriculture to industry and more specifically to manufacturing. Industrialization generates many benefits which include diversification of the economy, employment generation, technology transfer, and welfare improvement of the people. As a result of industrialization, an economy experiences an increase in the share of manufacturing in Gross Domestic Product (GDP) as the production of manufactured goods increases. Simultaneously, an economy also experiences a rise in manufacturing share in employment. In the developing countries, industrialization plays a critical role in accelerating the process of economic development. Industrialization leads to an increase in national income by ensuring the maximum use of scare resources, and raises the export of manufactured goods. Moreover, Industrialization opens up employment opportunities and thus helps in poverty reduction. It also allows the government to make long-term investments in infrastructure, skills formation, and institutional building, which contributes to the development of the economy. The manufacturing sector possesses some characteristics which can establish the necessary linkages for sustaining a virtuous circle of growth and structural transformation.

Industrialization can be described as the process by which the structure of an economy is transformed from an agricultural-base to a manufacturing-base. On the contrary, deindustrialization can be termed as a process leading to the fall in manufacturing activities, in terms of both output and employment, of an economy. In general, natural deindustrialization occurred in most of the developed economies where after achieving a certain level of per capita GDP, there was a gradual decline in the share of manufacturing value-added in GDP. This deindustrialization process coincided with the growing share of services value-added in GDP. Deindustrialization, in this regard, emerges as a natural outcome of the economic development process in those developed economies.

In contrast to the aforementioned natural process, a number of developing countries are experiencing premature deindustrialization when the shares of manufacturing in GDP and employment, already much lower than those of the early industrializers, begin to fall at a level of per capita GDP much lower than those of early industrialized economies. According to Rodrik (2016), premature industrialization in many developing

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countries is leading to a situation when these economies are becoming more and more service-oriented economies without going through a proper process of industrialization. Most of the Latin American countries are prime examples of such premature deindustrialization.

SDG 9 (industry, innovation, and infrastructure) should be at the heart of priorities of economic development in India as SDG9 has strong linkages with other SDGs. A recent study by UNESCAP (UNESCAP 2017) shows that the calculated infrastructural index of South Asia is much lower than the average value of the index of Asia-Pacific developing economies. South Asian countries have a much wider gap in infrastructure index when compared with the average value of the index of Asia-Pacific developed economies. All these refer to the fact that there is need for a significant volume of infrastructural investments in India from now until 2030. For the industrialization target under SDG 9, India is off the track as the country is experiencing premature deindustrialization.

Against this backdrop, this paper looks at the pattern of industrialization in India and explores the phenomenon of premature deindustrialization in India. The paper also seeks to identify the strategies for India to avoid the premature deindustrialization process.

9.2 An Overview of Industrialization of the Indian Economy

The Indian economy underwent important structural transformation over the past five decades. The share of agriculture in GDP declined drastically from as high as 56.7% in 1960 to 14.4% in 2018 (Fig. 9.1). The shares of services and industry were almost the same in 1960, of around 22%. However, by 2018, the share of the services sector increased to 54% and that of industry increased to 31.6%. It is important to mention here that the industry includes manufacturing, mining, and construction.

Despite the large decline in the share of GDP, agriculture's share in total employment declined from as high as 72% in 1960 to 47% in 2018 (Fig. 9.2). The share of industry in total employment was 11.7% in 1960, which increased gradually to 21.5% in 2018. Finally, the share of services increased from 16.4% in 1960 to 31.5% in 2018. All these indicate that agriculture still employs around half of the Indian labor force and the next major employment-generating sector is the services sector.

Since the industry sector includes manufacturing, mining, and construction, in order to explore the trend in industrialization, we analyze the trend in the manufacturing share in GDP (Fig. 9.3) and employment (Fig. 9.4). Figure 9.3 suggests that, the manufacturing share in GDP in India has shown a fluctuating trend since 1960. The share reached its peak level of 17.8% in 1979 and 1995, but in 2018, the share declined to only 15%. Since 2010, the share has a secular declining trend. Figure 9.4 suggests that the manufacturing share in employment in India demonstrated a fluctuating but a rising trend until 2002. In 1960, the share was as low as 9.6%, which by 2002 increased to 12.5%. After 2003, the share fluctuated and since 2012, the share had been showing a gradual decline. By 2018, the share stood at 11.4%.

The composition of merchandise imports in India changed over time since the beginning of the 1960s (Fig. 9.5). The share of agricultural raw materials and food declined. In 1962, the shares of agricultural raw materials and food were 9.2% and 17%, respectively, which came down to only 2% and 6%, respectively, in 2017. The share of fuel increased considerably since the early 1980s. In 2017, the share of fuel in total merchandise imports was 30%. The share of ores and metals remained around 6% throughout the period under consideration. The major component of import, with fluctuations, has been the manufactures. In 1962, the share of manufactures was 58% and by 2017, the share still remained at 54.8%.

The composition of the merchandise exports is shown in Fig. 9.6. Over the years, the shares of agricultural raw materials and food declined quite substantially. While in 1962, the shares of agricultural raw materials and food were 9.3% and 39%, respectively, the shares came down to

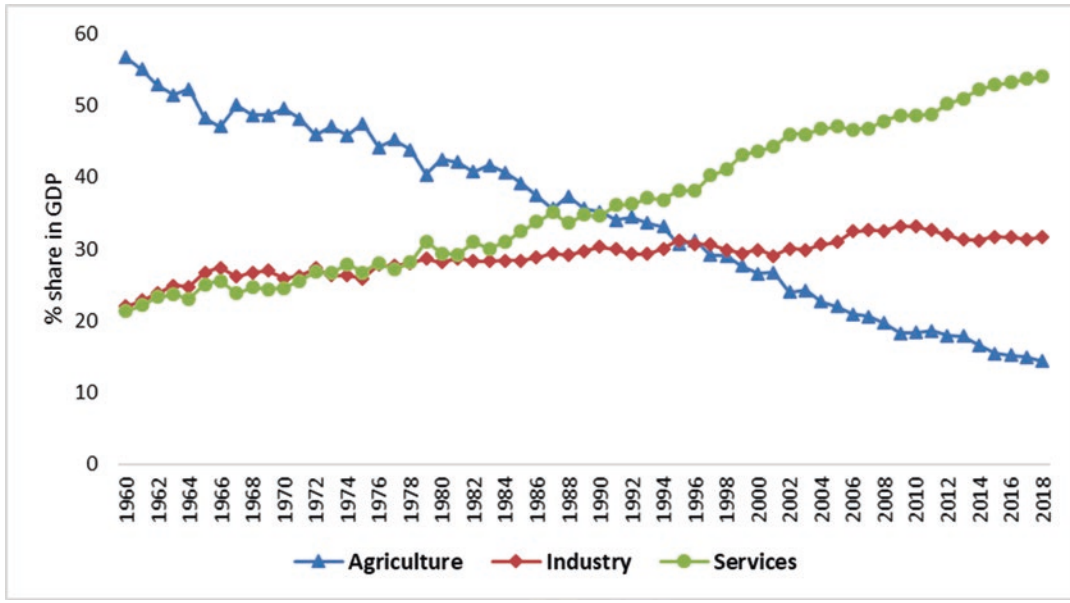

Fig. 9.1 Sectoral share of GDP (%). (Data source: World Development Indicators, World Bank)

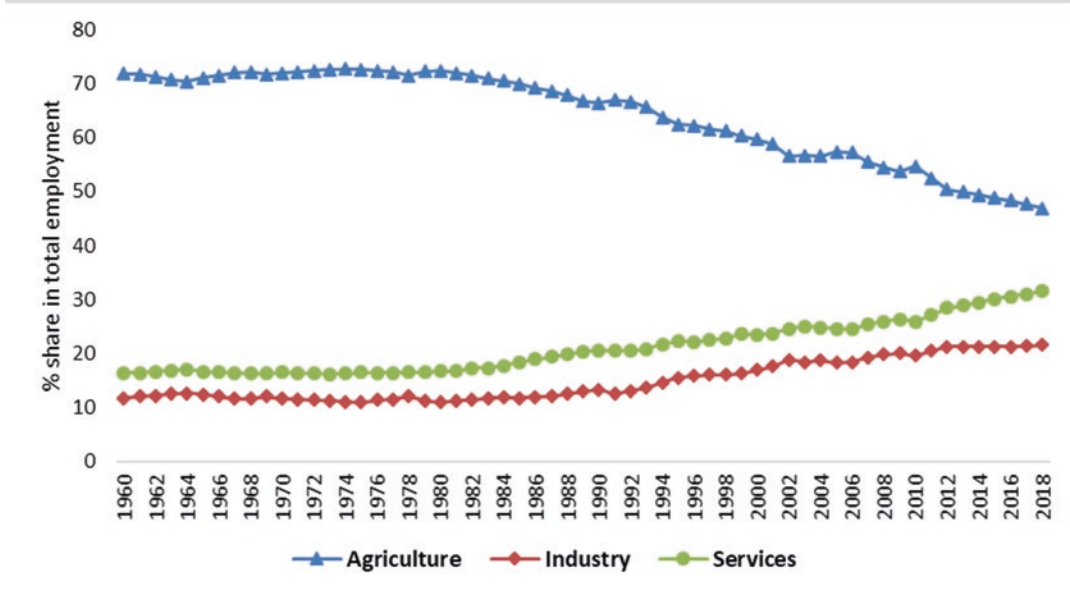

Fig. 9.2 Sectoral share of employment (%). (Data source: GGDC 10-Sector Database and World Development Indicators, World Bank)

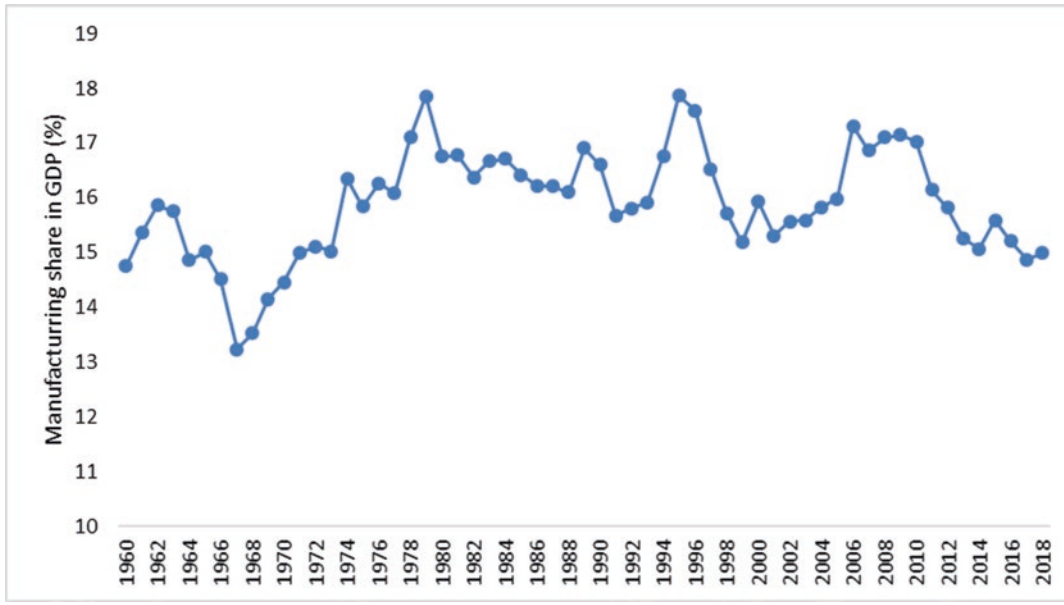

Fig. 9.3 Manufacturing share of GDP (%). (Data source: World Development Indicators, World Bank)

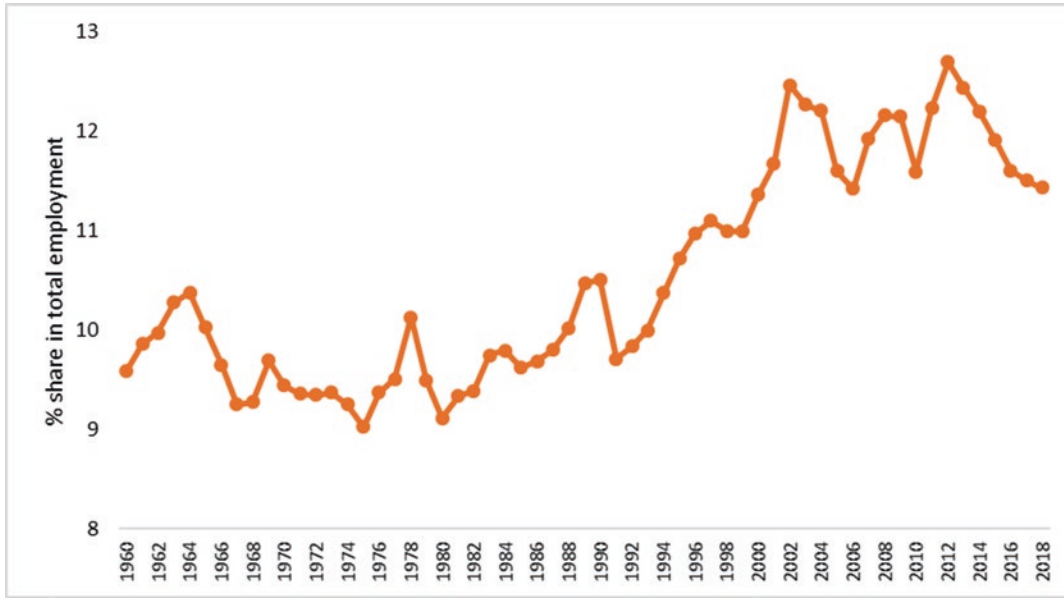

Fig. 9.4 Manufacturing share of employment (%). (Data source: GGDC 10-Sector Database and author's projection)

only 1.3% and 11.8%, respectively, in 2017. Since the early 2000s, the share of fuel increased and in 2017, the share stood at 12%. The share of ores and metals also decline from around 7% in 1962 to 3.8% in 2017. The share of manufactures increased quite substantially during the period under consideration. In 1962, the share of manufactures was 43.4%, which increased to 70.7% in 2017. Figure 9.7 suggests that, with the rise in manufactures share in merchandise exports in

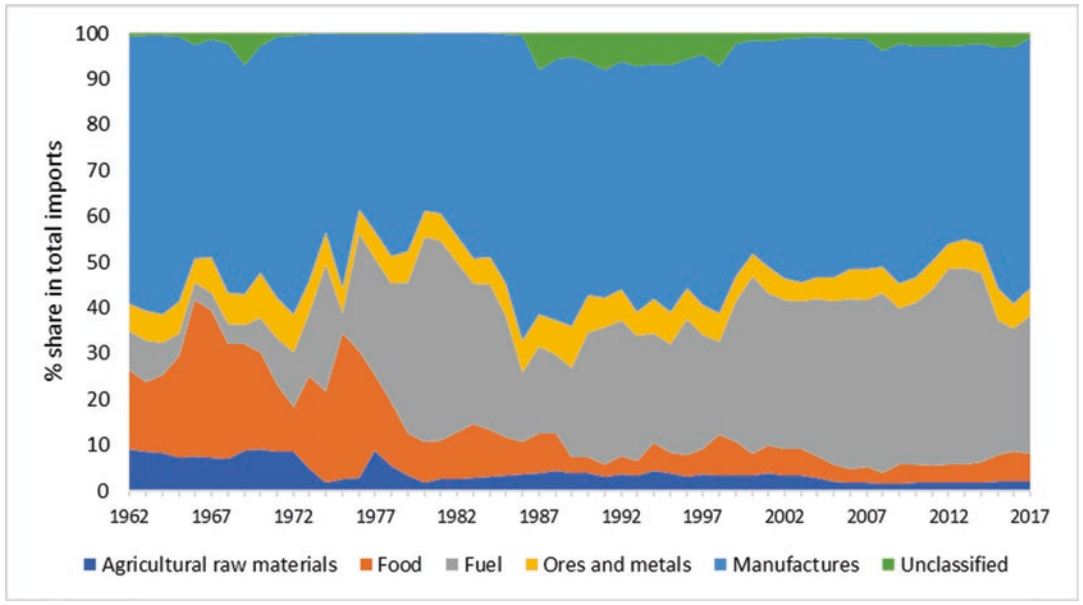

Fig. 9.5 Composition of merchandise imports (%). (Data source: GGDC 10-Sector Database)

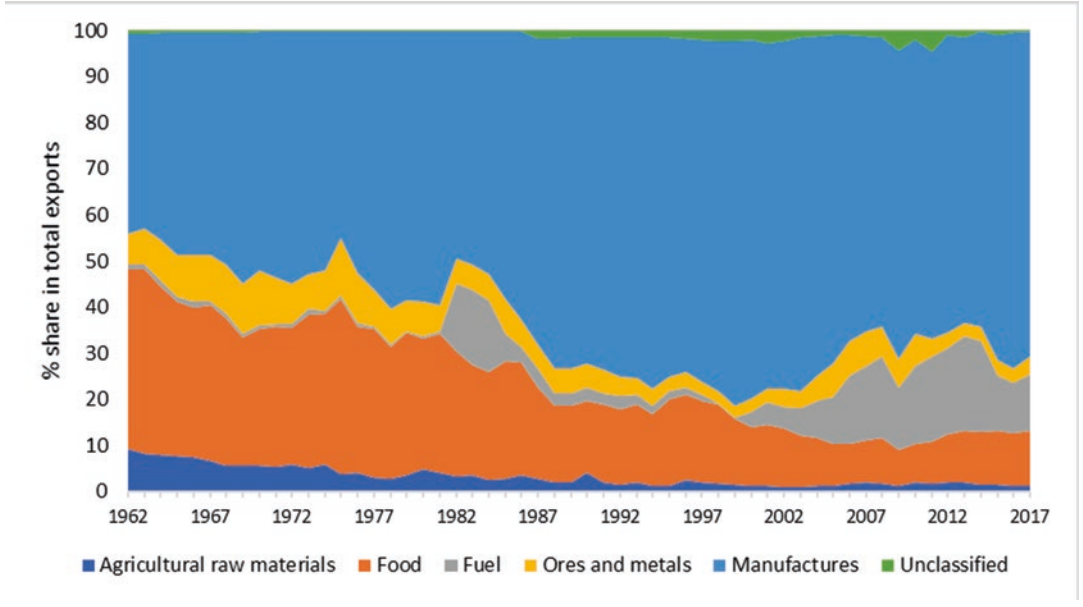

Fig. 9.6 Composition of merchandise exports (%). (Data source: GGDC 10-Sector Database)

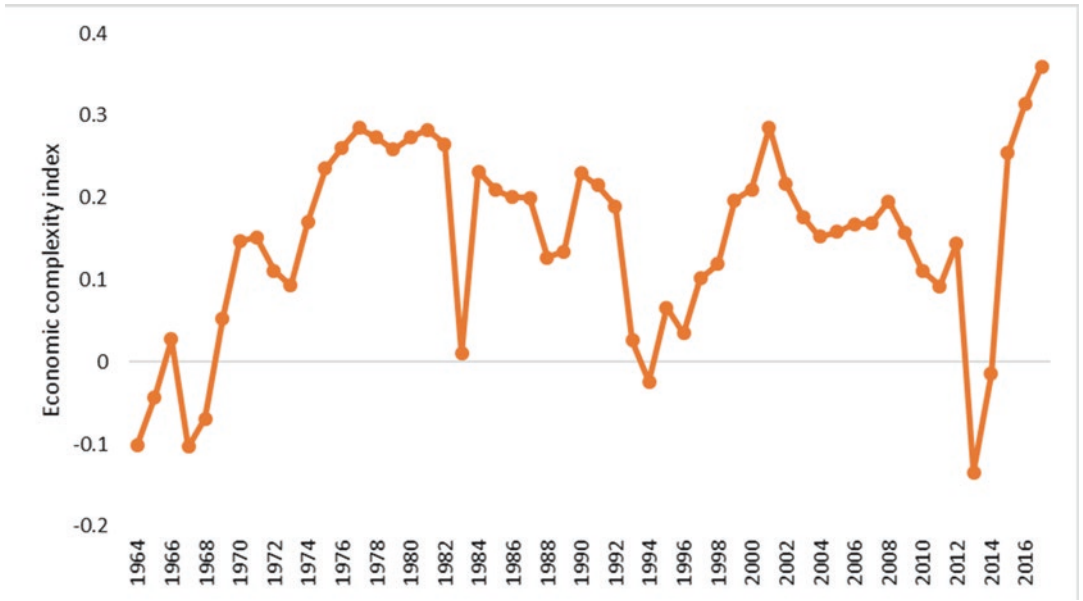

Fig. 9.7 Economic complexity index of India. (Data source: https://oec.world/en/rankings/country/eci/)

recent years, the economic complexity index also increased in India, indicating that India has been able to export more complex and higher value-added manufactures.

9.3 Is India Deindustrializing Prematurely?

There is no denying the fact that manufacturing has played a key role in the economic growth and overall development processes for many developed and advanced developing countries. As Rodrik (2016) suggests, manufacturing contributes to growth both because of the positive reallocation effect and because manufacturing tends to experience relatively stronger productivity growth over the medium to longer term, which has large positive economic and social benefits. Successful countries have changed their economic structures to benefit from manufacturing as the driver of economic growth. Therefore, premature deindustrialization as well as a low level of the manufacturing base is not good news for the South Asian countries. It thwarts the opportunities of rapid economic growth in these countries. It is very pertinent to mention here that one of the targets of the ninth Sustainable Development Goals (SDGs) is thus to "promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries."

Figure 9.8 presents manufacturing share in GDP in some Asian countries. It is quite interesting to observe that during 1960 and 2018, while South Korea, Malaysia, and Thailand were able to increase their shares of manufacturing value-added in GDP over the years and reached a peaked level of around 30% and then started experiencing a declining trend, for India, the share remained 15% and in recent years the share started to decline. Even Bangladesh, with a much lower share of manufacturing value-added in GDP in 1960 was able to surpass India in 2010, and by 2018, Bangladesh's share was much higher than that of India.

Is India experiencing premature deindustrialization? To answer this question, in Fig. 9.9, we present a graph using data of GDP per capita and the share of manufacturing value-added in GDP

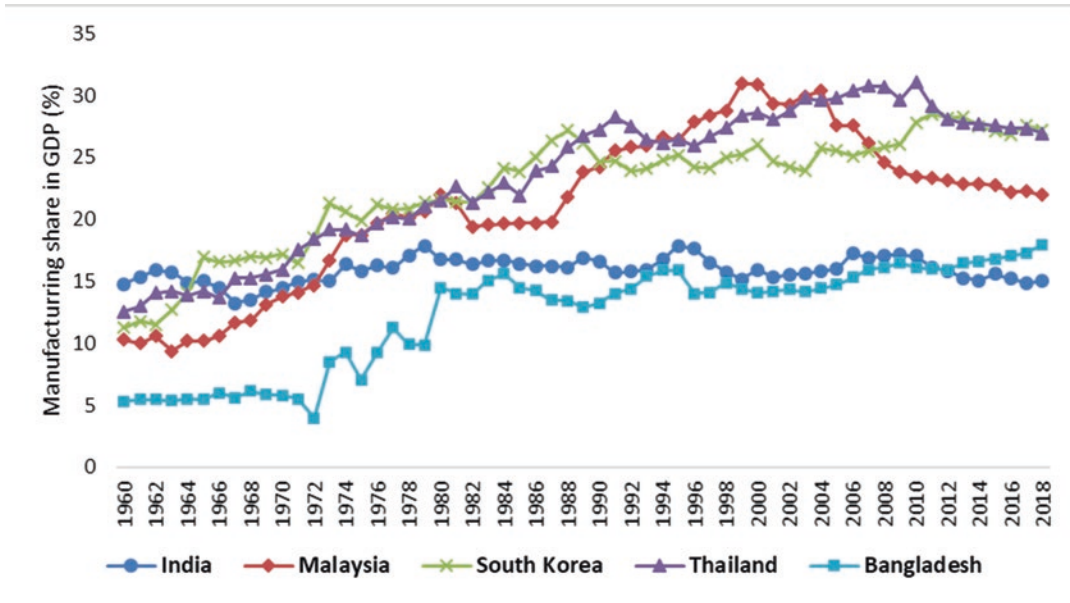

Fig. 9.8 Manufacturing share in GDP in a comparative perspective (%). (Data source: World Development Indicators, World Bank)

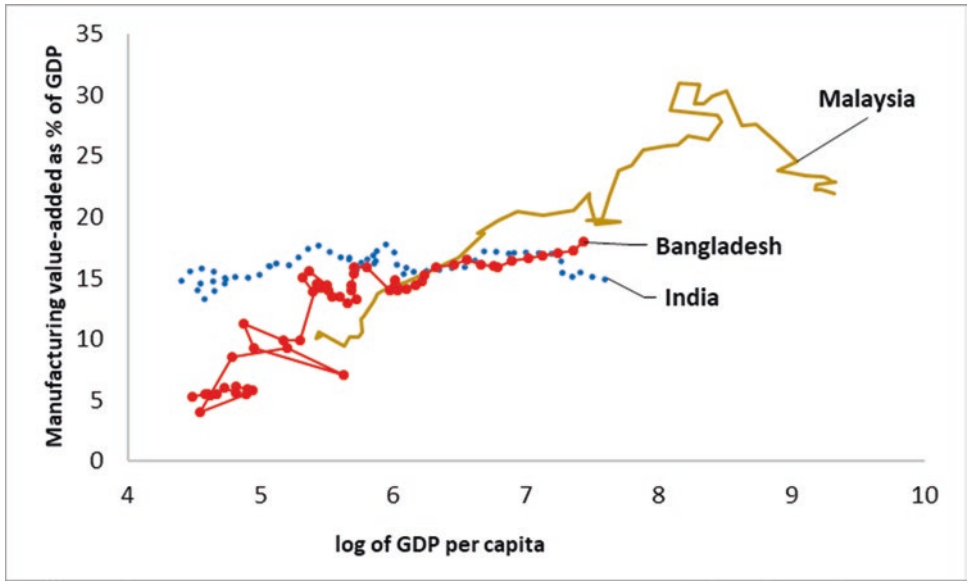

Fig. 9.9 India's declining share of manufacturing in GDP at a low level of GDP per capita. (Data source: World Development Indicators, World Bank)

for the years from 1960 to 2018 for three countries: Malaysia, India, and Bangladesh. The graph shows that Malaysia, over the years, with the rise in GDP per capita, was able to firmly increase its manufacturing value-added share in GDP from 10 to 30% (during 1960 and 2004). However, after reaching a high level of per capita GDP of around US$ 8000, the share started to decline; and this pattern follows the typical pattern of the deindustrialization process of the advanced countries. In contrast, with many fluctuations, India very slowly increased its share of manufacturing value-added in GDP from 13.7 to 18% (during 1960 and 2008). However, for India, the challenge is the declining share of manufacturing value-added in GDP since 2008 and by 2018, the share declined to 15%, which has a resemblance to premature deindustrialization. In contrast, as is shown in Fig. 9.9, Bangladesh has been experiencing a rising share of manufacturing value-added in GDP at a much faster rate than India at a similar level of per capita GDPs.

9.4 How to Avoid Premature Deindustrialization in India

9.4.1 Factors Affecting Industrialization: A Cross-Country Experience

In order to explore factors that affect the manufacturing share of GDP, a cross-country panel econometric analysis is conducted using a panel data of 107 developing countries for the years 1970–2016. The UN classification for developing countries has been used. In case of developed economies, over the years the contribution of manufacturing value-added to GDP tends to decline. Therefore, we have considered only developing countries in our analysis. All data have been obtained from World Bank's World Development indicators. The fixed effect panel regression results suggest that the size of the population, share of households with access to electricity, lower rate of applied tariff rate, domestic private sector credit as share in GDP, investment as share in GDP, labor force participation rate of younger people (age 15–24), and share of public expenditure on education in GDP have a positive and statistically significant association with higher manufacturing share in GDP.

The size of the population can be used as a proxy for the size of the internal demand. There is a significant positive relationship between manufacturing expansion and internal demand so that, other things being equal, countries with larger internal demand tend to have a higher manufacturing share. The access to electricity variable can be considered as a proxy of infrastructure, especially electricity infrastructure, of a country. Electrification is an important factor for industrialization. Furthermore, an outward-looking industrial strategy allows access to large markets and a growing demand which encourage large-scale industrialization programs. Moreover, trade liberalization helps boost the industrialization process by ensuring supply of imported inputs at free trade prices, providing access to technology and capital and by helping to establish a more competitive exchange rate. The strategies followed by economies who were successful in industrialization include the adoption of trade liberalization in conjunction with setting up of special economic zones, export processing zones, and industrial bonded zones as strategies for promoting Foreign Direct Investment (FDI) and supply export-oriented firms with duty-free, tax-free imported inputs. Trade played a crucial role in expediting structural change and industrial development in these nations. The existence of better financial institutions helped influence the industrialization process by facilitating efficient allocation of resources and ensuring larger private sector credit in proportion to GDP. The presence of an efficient banking system ensured the availability of finance to firms, especially small and medium-sized firms, and reinforced domestic entrepreneurship helped speed up the pace of industrialization. The countries with higher levels of private investments, backed by high levels of domestic savings and FDI, were also successful in the industrialization process. The increased participation of youth IN the labor market helps reap the benefits of demographic dividend.

Human capital development in the form of sufficient technically and scientifically qualified personnel can help meet the increase in demand and contribute to industrial development. The foundation of a competitive industrial sector can be developed and the appeal of investments can be raised by generating immobile national assets, through education spending in particular. Therefore, any form of industrialization demands an increase in government spending on education.

Finally, experiences from successful countries suggest that better functioning institutions, capable of guaranteeing better rule enforcement, transparency, management of corruption, and government stability could improve the business climate and stimulate the entrepreneurial spirit. On the contrary, the existence of significant governance deficiencies could render difficult the building up of a solid industrial sector and complicate the leading of a dynamic industrial policy. Therefore, reforms for improved administrative procedures and reduction of regulatory delays are critically important.

It can be summed up that in order to initiate a sustained process of strong industrialization, a boost in investments and an improvement in education are crucial; the management of trade and capital openness are also vital factors; financial sector development and the promotion of both macroeconomic stabilities in the form of lower levels of debt and high levels of political and social stability and institutional stability are essential for achieving sustained industrialization. In addition, Infrastructure development, uninterrupted access to energy and innovation can act as catalyzers in the process of nurturing industrialization.

9.4.2 Addressing Policy-Induced Challenges

There are a number of policy-induced challenges. The reform of trade and industrial policies in the 1980s and 1990s helped India achieve the current level of progress in manufacturing. However, returns from those reforms have been exhausted, and also there are now some policies in place toward the wrong directions. There is a need for strategic and dynamic industrial policies aiming at rapid expansion and diversification of manufacturing through large-scale domestic and foreign investments. Given the changes in the global and regional trade scenarios, the need for such strategic trade and industrial policies is more important now than ever.

9.4.3 Enhancing Trade Orientation

One of the worrying signs of India's pattern of trade is the falling trade orientation. From a very low base in 1960, India's trade orientation saw a gradual rise over the next four decades until 2010 (Fig. 9.10). In 1960, the import-GDP ratio was as low as 6.8%, which increased to 31.3% in 2012. However, the import-GDP ratio saw a secular decline during 2012 and 2016, and a rising trend since 2016. In 2018, the import-GDP ratio stood at 23.4%. The export GDP ratio increased from a very low share of only 4.5% in 1960 to 24.4% in 2013. The export-GDP ratio also saw a secular decline during 2013 and 2017 and a rising trend in 2018. By 2018, the export-GDP ratio stood at 19.7%. India's trade orientation needs to be increased and expansion of more export-oriented manufacturing sector needs to be encouraged.

9.4.4 Attracting Large-Scale Foreign Direct Investment (FDI)

Foreign direct investment (FDI) plays an important role in the long-run economic growth of an economy. FDI develops productive capacity through transfer in technology, enhances domestic labor skills through global managerial practices, and contributes to human capital development. FDI assists in integrating the domestic markets with the global market. Furthermore, FDI bridges the gap between domestic savings and investment and spurs economic growth, which is a powerful tool for alleviating poverty. Although developing countries understand the need for FDI to boost economic

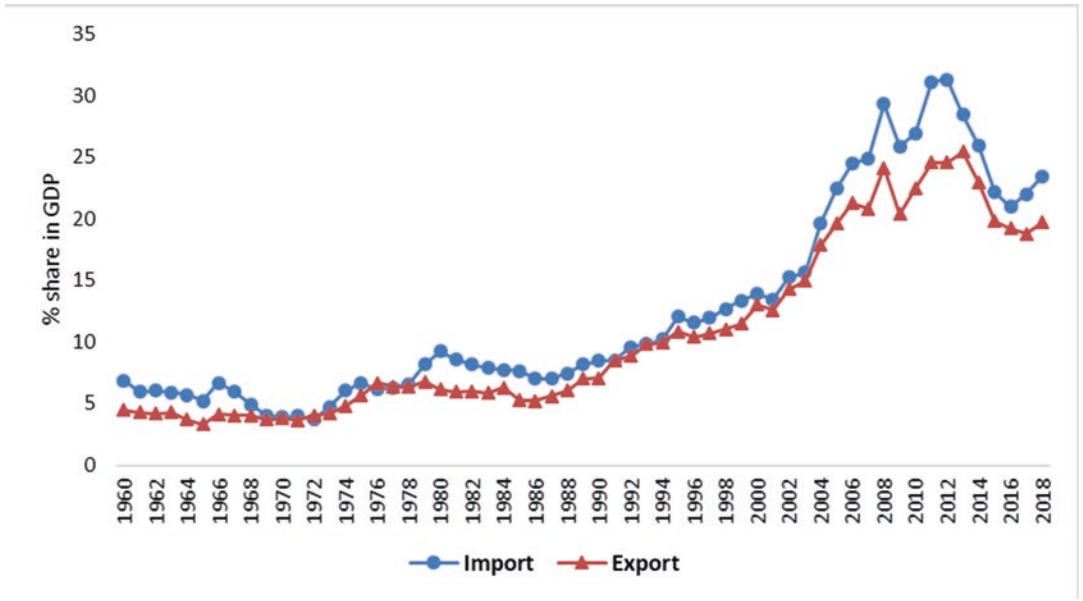

Fig. 9.10 India's falling trade orientation. (Data source: World Development Indicators, World Bank)

growth in their countries, not all countries have been successful in attracting FDI equally.

Figure 9.11 shows a comparison between India and Malaysia with respect to the share of FDI in GDP. It is clearly observed that India's FDI orientation had been much lower than Malaysia for the entire period under consideration (1975–2017), except the year 2008. India started with a very low and negative FDI-GDP ratio of 0.01% in 1975. Until 2001, India's FDI-GDP ratio remained below 1% of GDP. Between 1975 and 2001, Malaysia's average FDI-GDP ratio was 4.3% and in some years, the ratio reached 8–9%. India's FDI-GDP ratio reached its peak level of 3.6% in 2008. However, since 2009, the ratio started falling and in 2017, the ratio stood at 1.5%. Figure 9.12 suggests that in comparison to Malaysia, India is actually experiencing a declining share of FDI in GDP at a much lower level of GDP per capita.

Raihan (2017a) argued that certain factors are key to attracting FDI, and policies should be designed to take into account these factors. To attract FDI, relevant trade policy reforms leading to higher degree of openness are essential. With the increased importance of globalization, trade openness has become a key component to growth. Liberalization of trade leads to greater specialization and division of labor, leading to higher productivity and export capabilities. Furthermore, infrastructural development is needed to attract larger FDI in an economy. FDI is positively associated with the magnitude of domestic investment. Low or stagnant domestic investment may show lack of business confidence by the domestic investors, which may convey negative messages to foreign investors. Therefore, the government needs to improve the business environment, reduce the cost of doing business, and facilitate domestic investment through eliminating policy-induced and supply-side constraints.

9.4.5 Making Special Economic Zones (SEZ) Effective

SEZs in India have to deliver what they promise. Raihan (2016) argued that the standards of infrastructure and business environment within SEZs have to be up to the global marks. Delays in implementation and unsatisfactory delivery of services would make the SEZs unsuccessful. The

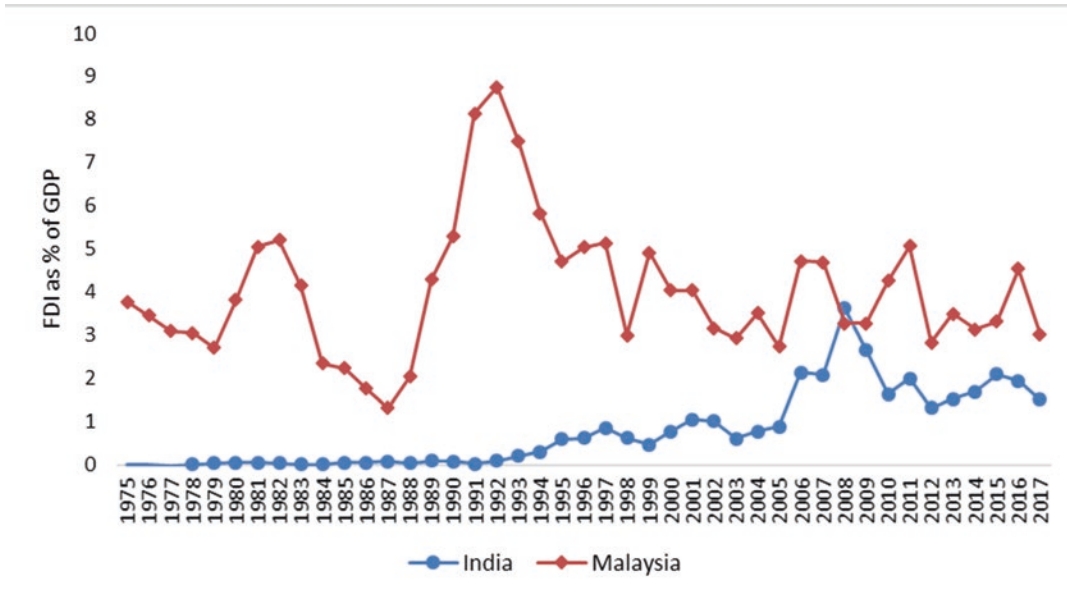

Fig. 9.11 FDI as % share of GDP in India and Malaysia. (Data source: World Development Indicators, World Bank)

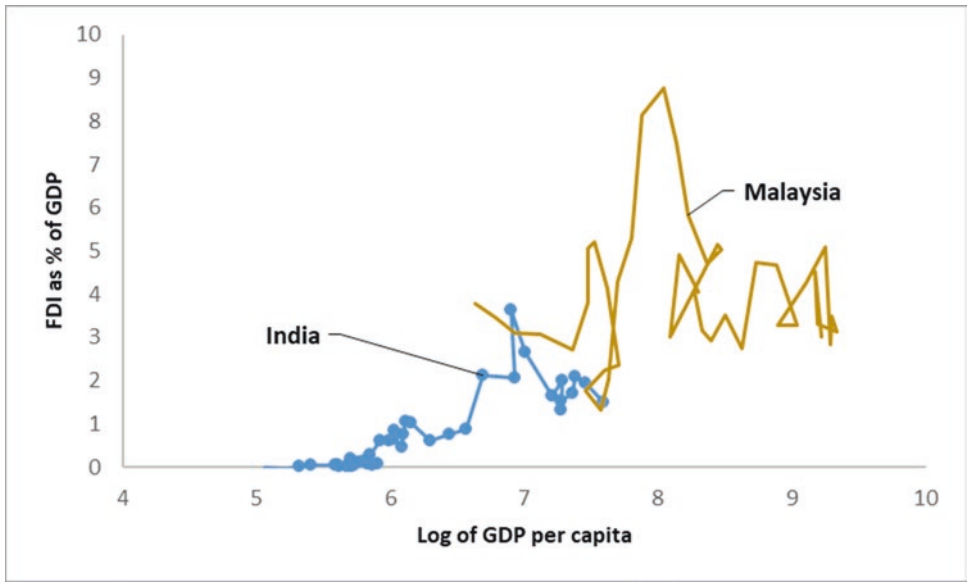

Fig. 9.12 India's declining share of FDI in GDP at a low level of GDP per capita. (Data source: World Development Indicators, World Bank)

contrasting experiences of China and India are very relevant. While China was very successful in establishing well-functioning SEZs by effectively addressing infrastructural and land issues, India, so far, in most cases failed to do the same. It is also important to understand that while SEZs are aimed at creating 'efficient' enclaves, improvements in the business environment and infrastructure of the overall economy cannot be overlooked. If there are vast differences in the

quality of infrastructure and business environment between SEZs and rest of the economy, then excessive and continued external support would be needed for the survival of SEZs, which can have large financial implications. SEZs would need to be connected to 'efficient' sea and land ports. Otherwise, many of the benefits of the SEZs would be lost. Therefore, port infrastructure and its efficiency would need to be improved substantially. Furthermore, the quality of roads, connecting SEZs and ports, would need to be upgraded. In contrast to India, China's success was in establishing SEZs nearby efficient ports and developing much-improved road networks connecting SEZs with those ports. SEZs should aim for facilitating economic and export diversification, leading to progressive structural transformation of the economy. Emphasis should be on production of high value-added and diversified products. Therefore, sectors with high potentials of economic and export diversification should get the priority in the SEZs. The whole issue of the management of SEZs is very important. The gravity of institutional aspects for the good functioning of SEZs cannot be underestimated. Therefore, it has to be ensured that the institutions governing the operations of SEZs are competent enough.

9.4.6 Human Capital for Rapid Industrialization

Education is crucial for enhancing human capital in an economy, which in turn increases workers' productivity and thus contributes to economic growth. The importance of investing in human capital has been discussed in the economic literature for long. Probably, the strongest argument for investment in human capital came from the endogenous growth theory, which highlights that investment in human capital together with innovation and knowledge are important contributors to economic growth. As the global market moves toward accelerated automation, increasing the investment in human capital is now more important than ever. What often causes the difference between the ability of workers in the developed and developing countries is the poor performance of the education system in the developing countries.

Despite the fact that India made considerable progress in gross-enrolment in primary and secondary education, the country is seriously lagging behind in ensuring quality education for all. If we consider the 'average years of schooling' (Fig. 9.13) as an indication of the status of education of any country, in 2017, the 'average years of schooling' in India was only 6.4 which was

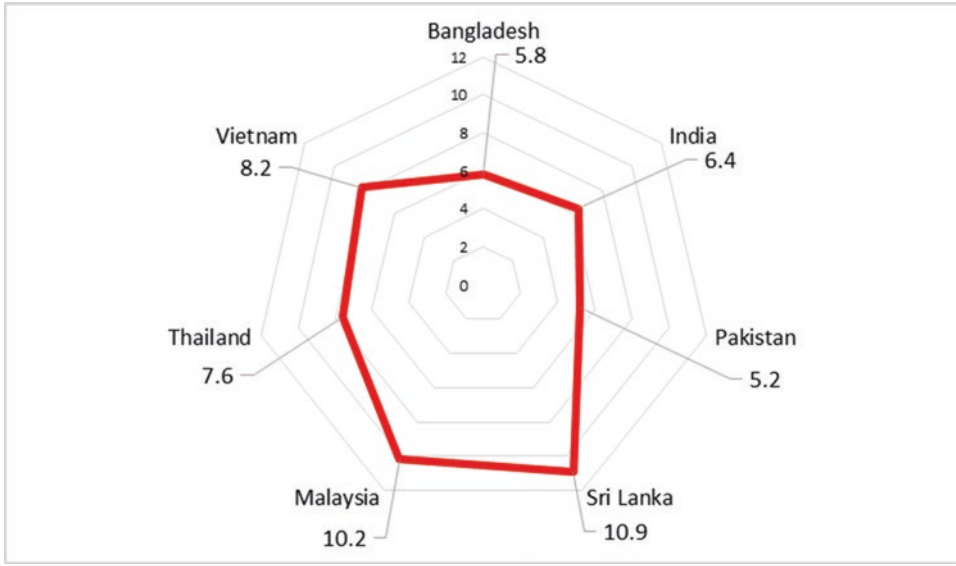

Fig. 9.13 Average years of schooling in India in a comparative perspective in 2017. (Source: UNDP)

higher than Pakistan (5.2) and Bangladesh (5.8). However, India was far behind Sri Lanka (10.9) and some of the leading Southeast Asian countries like Malaysia (10.2), Thailand (7.6), and Vietnam (8.2).

Therefore, as India is lagging behind in educational infrastructure and outcome, the government must consider using the public expenditure on education as a critical tool to achieve the targets. India should re-evaluate its prioritization of public spending, and reorient such spending more toward social sectors like education and health. It should also be kept in mind that the increase in the ratio of public expenditure on education to GDP should coincide with the improvement in the quality of institutional arrangements in the education systems.

9.5 Conclusion

How to substantially increase the manufacturing value-added share in GDP and thus promote manufacturing-led economic growth in India? As Raihan (2017b) argued, India has to adopt the right kind of policies and programs which can trigger much faster rate of growth of the manufacturing sector compared to those of agricultural and services sectors. The experiences of the successful countries show that human capital has made a major difference. In India, compared to the East and Southeast Asian countries, both the quantity and quality of human capital are at much lower levels. Therefore, policies and programs should be targeted at the rapid enhancement of human capital in India. There is also a need for pro-active trade and industrial policies in terms of providing effective incentives to domestic investors, setting up special economic zones and attracting foreign direct investment (FDI) for diversified manufacturing industries. Such policies should also be aimed at integration of the domestic manufacturing industries with the global value chains.

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