Public sector units in China and India
Inefficient producers or creators of crucial knowledge assets?

Jayan Jose Thomas

Introduction

India and China, two of world’s fastest growing economies, face similar policy challenges in relation to their respective public sectors. A view that has gained much influence is that the public sectors are a weak link in these countries’ otherwise exciting growth stories, and therefore they must be reduced in size. This chapter, reviewing the relation between public sector and economic growth in India and China over a long period, contests the above opinion. Public sector units in India and China are frequently portrayed as ‘inefficient’ producers, causing a drain on the national economies. On the other hand, this paper highlights that public sector units are also creators of knowledge assets that are so crucial to these countries’ future growth and competitiveness.

This chapter is organized as follows. The major objective of public sector investments in India and China from the 1950s was to speed up the industrialization programme in these countries. Even in 2009–10, the share of industrial sector (manufacturing, electricity and mining) in real investments by central government public sector enterprises was 74.4 per cent in India (GOI 2011a). The next section of this chapter makes a broad review of the state of industrial and especially manufacturing sector in India, making comparisons with China wherever possible. Next is a review of the various stages in the evolution of India’s policies towards the public sector from the 1950s until the 1980s, and the following section analyses the policy changes in India after the beginning of economic reforms in 1991–92. Then I review the various phases in China’s economic transition and the role played by the public sector in each. The next section discusses the role of the public sector as a creator of crucial knowledge assets, followed by concluding remarks.

Development of the industrial sector: India compared with China

The diversification of GDP in India occurred largely from agriculture to services, not from agriculture to industry—in a notable contrast with the experiences of China and other East Asian countries. In India, the contribution of manufacturing
to GDP was only 16 per cent in 2009–10, while the combined share of services and construction was 65 per cent (see Figure 10.1 and Table 10.1). In comparison, manufacturing contributed 31 per cent to China’s GDP (in 2006). Per capita manufacturing value added (at constant 2000 US$) was $91 in India in 2006; the corresponding figures were $530 for China and $4,131 for South Korea (World Bank 2011) (see Table 10.2 and Thomas 2010a).

The slow expansion of the manufacturing sector has stunted the diversification of India’s occupational structure. Even in 2009–10, of the total working population of 459 million in India, 238 million (52 per cent) were engaged in agriculture and allied activities. The slow progress in occupational diversification has also resulted in a relatively low labour participation rate—the proportion of population (15 years and above) who are economically active—in India. According to ILO (International Labour Organization) data for 2008, labour participation rate was only 56 per cent in India compared to 74 per cent in China and 71 per cent in Brazil. Female labour participation rates have been particularly low in India: only 33 per cent compared to China’s 68 per cent (both in 2008). Informal sector workers form more than 90 per cent of India’s total employment (Thomas 2010b).

In the late 2000s, the manufacturing sector provided employment to 52 million, or 11.4 per cent of India’s total workforce (see Table 10.1). Within manufacturing, the factory sector, which broadly represents organized manufacturing, employed 12 million workers (in 2004–05). The rest of the manufacturing workers were engaged in small, informal enterprises in the unregistered sector. In India, registered factories comprise all factories that employ more than ten workers and operate with the aid of electric power as well as factories that employ more than 20 workers without the aid of electric power.

From 1978, China’s labour market began to be liberalized, and the process picked up speed from the mid-1990s. As part of the reforms since the mid-1990s, lifetime tenures for workers began to be replaced by contracted tenures, large state-owned enterprises began to lay off workers, and workers began to migrate in large numbers from rural to urban areas (Ghose 2008). Despite such changes, China is distinctly ahead of India in terms of the actual numbers and quality of jobs generated.

In China, regular employment refers largely to salaried employment in formal enterprises, whereas irregular employment refers to casual wage employment and self-employment in both non-formal and formal enterprises. We do not have enough information to examine how far regular employment in China is comparable to formal or organized employment in India. Yet it is notable that in 2004/05, regular employment in manufacturing in China was 104 million (when Indian manufacturing employed a total of 56 million with only 12 million of them in the organized sector) (see Tables 10.2 and 10.3). Ghose (2008) notes that in China since the mid-1990s, labour incomes from all types of employment increased substantially even though the proportion of employed persons enjoying job security and non-wage benefits declined. On the other hand, growth of workers’ wages and labour productivity decelerated in India during 1999–2005 (Thomas 2010b).
Examining a plot of gross value added by India’s organised manufacturing (using Annual Survey of Industries data) for the period 1959–60 to 2007–08, one can identify seven distinct growth phases. Growth rates for the different growth phases have been estimated using semi-logarithmic regression (see Figure 10.2 and Table 10.4).

The seven growth phases include a period of relatively fast growth of manufacturing from 1959–60 to 1964–65, followed by a period of much slower growth during 1965–66 to 1972–73. Within the second growth phase, manufacturing growth was statistically zero during the four-year period 1965–66 to 1968–69. Manufacturing growth picked up speed again from the mid-1970s but dropped to exceptionally low levels in the two years 1979–80 and 1980–81. India’s manufacturing sector resumed faster growth from 1981–82 onwards. The six-year period from the mid- to late-1980s was one of particularly fast growth, but this phase too came to a close by 1991–92, a year in which India also faced a major balance of payments crisis.

Industrial growth in India has exhibited wide fluctuations after 1991. According to the Annual Survey of Industries (ASI), India’s industrial sector expanded at relatively fast rates for four years after the start of economic reforms in

\[\text{Figure 10.1 The shares of different sectors in India’s GDP (at factor cost at 1999–2000 prices), 1950–53 to 2005–08, shares in percentages (source: National Accounts Statistics, various years).}\\
\text{Note}\\
\text{Construction is included within the service sector. The figures reported in this graph under ‘agriculture’ pertain to agriculture and allied activities such as fishing and forestry.}\\
\text{Long-term trends in India’s manufacturing growth}\\
\text{Examining a plot of gross value added by India’s organised manufacturing (using Annual Survey of Industries data) for the period 1959–60 to 2007–08, one can identify seven distinct growth phases. Growth rates for the different growth phases have been estimated using semi-logarithmic regression (see Figure 10.2 and Table 10.4).}\\
\text{The seven growth phases include a period of relatively fast growth of manufacturing from 1959–60 to 1964–65, followed by a period of much slower growth during 1965–66 to 1972–73. Within the second growth phase, manufacturing growth was statistically zero during the four-year period 1965–66 to 1968–69. Manufacturing growth picked up speed again from the mid-1970s but dropped to exceptionally low levels in the two years 1979–80 and 1980–81. India’s manufacturing sector resumed faster growth from 1981–82 onwards. The six-year period from the mid- to late-1980s was one of particularly fast growth, but this phase too came to a close by 1991–92, a year in which India also faced a major balance of payments crisis.}\\
\text{Industrial growth in India has exhibited wide fluctuations after 1991. According to the Annual Survey of Industries (ASI), India’s industrial sector expanded at relatively fast rates for four years after the start of economic reforms in}
Table 10.1  Sector-wise distribution of India’s GDP and employment\(^1\)

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Shares in GDP, %</th>
<th>Shares in employment, %</th>
<th>Employment in millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agriculture and allied activities</td>
<td>35.1</td>
<td>14.6</td>
<td>68.2</td>
</tr>
<tr>
<td>2. Mining and quarrying</td>
<td>2.8</td>
<td>2.4</td>
<td>0.6</td>
</tr>
<tr>
<td>3. Manufacturing</td>
<td>14.3</td>
<td>16.1</td>
<td>10.6</td>
</tr>
<tr>
<td>4. Electricity, gas and water</td>
<td>1.5</td>
<td>2.0</td>
<td>0.3</td>
</tr>
<tr>
<td>5. Services and construction</td>
<td>45.0</td>
<td>64.9</td>
<td>19.9</td>
</tr>
<tr>
<td>5a. Construction</td>
<td>7.7</td>
<td>7.9</td>
<td>2.3</td>
</tr>
<tr>
<td>5b. Trade, hotels, transport and communication</td>
<td>16.7</td>
<td>26.5</td>
<td>8.8</td>
</tr>
<tr>
<td>5c. Financing, insurance, real estate and business service</td>
<td>8.3</td>
<td>17.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Of which, IT(^2) sector</td>
<td>–</td>
<td>4.1</td>
<td>–</td>
</tr>
<tr>
<td>5d. Community, social and personal service</td>
<td>12.4</td>
<td>13.1</td>
<td>8.1</td>
</tr>
<tr>
<td>GDP/Total employment</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: based on Thomas (2012); National Association of Software and Service Companies (2011) for data on the IT sector.

Notes
1. Totals may not tally because of rounding.
2. Information technology sector refers to the IT industry (mainly software production), engineering and research and development services, and IT-enabled services.
3. Figures for 2008–09; GDP at factor cost at 2004–05 constant prices.
1991–92. But, subsequently, output growth decelerated and jobs were lost in most industries in India between 1996–97 and 2001–02. The severity of industrial recession in India during 1996–97 to 2001–02 was probably more than during any other periods of slow growth since 1959–60. The worst phase of industrial stagnation since the mid-1960s lasted for only four years compared to the six years of statistically zero growth since the mid-1990s.

India’s industrial growth revived again from the second quarter of 2002–03. A surge in exports was a key feature of this growth revival. However, the revival of industrial growth in India since 2002–03 appeared to have lasted less than five years. The growth of IIP (index of industrial production) in India was on a down-hill from April 2007 onwards—notably, months before the financial crisis began in the US, not to speak of its global spread since August 2008. The onset of the global financial and economic meltdown in August–September 2008 has

**Table 10.2** Manufacturing sectors of India and China: a comparison

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added as % of GDP, 2006</td>
<td>16.1</td>
<td>30.9</td>
</tr>
<tr>
<td>Manufacturing employment, in millions, 2005&lt;sup&gt;2&lt;/sup&gt;</td>
<td>56</td>
<td>104</td>
</tr>
<tr>
<td>of which organized sector employment, in millions, 2005</td>
<td>12</td>
<td>–</td>
</tr>
<tr>
<td>Per capita manufacturing value added, in constant 2000 US$, 2006</td>
<td>91</td>
<td>530</td>
</tr>
</tbody>
</table>


Notes
1. The employment figures for India correspond to the year 2004–05.
2. Refers to regular employment in manufacturing in China and to total (the sum of organized and unorganized) employment in India.

**Table 10.3** The structure of employment and GDP of China, various years

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shares in GDP, %</td>
<td>Primary&lt;sup&gt;1&lt;/sup&gt;</td>
<td>17.5</td>
<td>12.3</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>52.6</td>
<td>60.6</td>
<td>62.8</td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>29.9</td>
<td>27.1</td>
<td>27.7</td>
</tr>
<tr>
<td>Shares in employment, %</td>
<td>Primary&lt;sup&gt;1&lt;/sup&gt;</td>
<td>59.7</td>
<td>52.2</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>21.4</td>
<td>23</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>18.5</td>
<td>24.8</td>
<td>27.5</td>
</tr>
<tr>
<td>Employment in millions</td>
<td>Primary&lt;sup&gt;1&lt;/sup&gt;</td>
<td>391</td>
<td>355</td>
<td>360</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>140</td>
<td>157</td>
<td>162</td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>124</td>
<td>169</td>
<td>198</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>655</td>
<td>681</td>
<td>721</td>
</tr>
</tbody>
</table>

Source: based on Prasad (2009).

Note
1. Primary sector covers farming, forestry, animal husbandry and fishing. Secondary sector covers industry (mining, manufacturing and energy production) and construction. Tertiary sector covers the rest.
compounded the problems faced by Indian industry. Export-oriented industries such as garments, textiles, leather and engineering have suffered a sharp fall in the demand for their products from Western countries. Year-on-year growth of India’s exports was negative for 11 continuous months from October 2008 to August 2009 (Thomas 2009b).


**Growth of manufacturing, by industries**

Further, manufacturing growth in India has been polarizing—between different industries, between the registered and unregistered sectors, and between different regions. Between 1990–91 and 2008–09, the growth of GDP from unregistered manufacturing fell behind the growth of GDP from the registered sector (or broadly, the factory sector) (National Accounts Statistics data). Within the factory sector, ASI data on value added for the period 1991–2006 show that the

![Graph of Employment and Log GVA](image-url)

**Figure 10.2** Employment in millions and log of gross value (GVA) added in India’s factory sector, 1959–60 to 2007–08 (source: *Annual Survey of Industries*, various years).

**Note**

A part of the sharp fall in employment and value added in the late 1990s observed in this graph is due to certain changes in ASI coverage introduced during the 1998–2000 period.
growth of capital-intensive industries, especially petroleum refining, was faster than the growth of labour-absorbing industries such as textiles and food.

In 2005–08, industries manufacturing chemicals, petrochemicals, rubber and refined petroleum products accounted for 24.2 per cent of the total value added by India’s organized manufacturing sector. However, the combined share of these industries in total manufacturing employment in the country was only 4.9 per cent. On the other hand, textiles, garments and leather, together, accounted for a 33.5 per cent share in India’s manufacturing employment, but the share of these industries in organized sector manufacturing value added was only 12.3 per cent (see Table 10.5).

Table 10.5 Manufacturing sector in India: shares of different industries in total employment and gross value added, percentages

<table>
<thead>
<tr>
<th>Industry</th>
<th>Organized manufacturing (ASI), 2005–08</th>
<th>Total manufacturing (NSS), 2009–10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GVA</td>
<td>Employment</td>
</tr>
<tr>
<td>Food, beverages, tobacco</td>
<td>9.5</td>
<td>19.8</td>
</tr>
<tr>
<td>Textiles, garments, leather</td>
<td>12.3</td>
<td>24.0</td>
</tr>
<tr>
<td>Wood, furniture</td>
<td>1.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Paper, printing</td>
<td>2.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Chemicals and petroleum products</td>
<td>24.2</td>
<td>13.5</td>
</tr>
<tr>
<td>Metals, minerals, metal products</td>
<td>23.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>16.4</td>
<td>10.8</td>
</tr>
<tr>
<td>Motor, transport equipment</td>
<td>10.4</td>
<td>6.5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NSSO (2011); Annual Survey of Industries, various years.
Employment generation in manufacturing

The National Sample Survey (NSS) provides data on employment in the whole of manufacturing, organized and unorganized combined. According to NSS data, 13.5 million manufacturing jobs were generated in India between 1993–94 and 2004–05; of these, 9.6 million were added during the period 1999–2000 to 2004–05 (see Table 10.6).

Export-oriented industries such as garment manufacturing (2.3 million new jobs), diamond cutting and polishing (0.7 million new jobs) and the textile industry were significant generators of employment in India during the 1999–2005 period. Another significant source of employment generation in India during these years were industries linked to construction, including the manufacture of bricks, cement and other non-metallic mineral products (1.1 million new jobs); manufacture of wood and wood products (0.64 million); and manufacture of furniture (0.5 million) (Thomas 2010b).

On the other hand, between 2004–05 and 2009–10, employment in Indian manufacturing declined by 3.7 million. There was significant decline in employment in industries manufacturing textiles, garments, leather and wood products. These were the very industries which had recorded good performance in employment generation during 1999–2005. But, by 2009–10, employment in these industries was hit by the global economic problems (see Table 10.6).

More worrying for the overall health of India’s manufacturing sector was the somewhat stunted growth in employment between 1999–2000 and 2004–05 of two industries that are crucial to providing further growth linkages: chemicals and machinery equipment manufacturing. In both these industries, employment increase during the 16-year period after 1993–94 was less than the employment increase during the 10-year period of 1983 to 1993–94 (see Table 10.6).

Finally, at the global level India is still a small player in most industries even as China has dramatically increased its shares in global production in recent years. For instance, in the manufacture of electrical machinery, China’s share increased from 12.2 per cent to 30.8 per cent between 2000 and 2007; India’s share in this industry increased only marginally, from 1.6 per cent to 3.1 per cent (see Table 10.7).

The public sector and the evolution of political economy in India

After winning independence from British colonialism, India began a path of state-led development from the 1950s onwards, with the public sector playing a crucial role. The glorious years of Indian planning were from 1950 to the mid-1960s, roughly corresponding to the First, Second and Third Five-Year Plan periods. Guided by Jawaharlal Nehru’s vision, the young republic assiduously set about the task of building industrial and technological capabilities.
Table 10.6 Net increase in employment in Indian manufacturing, 1983 to 2009–10, persons in 100,000 numbers

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food products, beverages, and tobacco products (15, 16)¹</td>
<td>23.2</td>
<td>11.6</td>
<td>−2.5</td>
<td>−3.4</td>
</tr>
<tr>
<td>Textiles, apparel and leather products (17, 18, 19)</td>
<td>−2.8</td>
<td>−9.6</td>
<td>52.3</td>
<td>−16.4</td>
</tr>
<tr>
<td>Wood and paper products; printing, publishing (20, 21, 22)</td>
<td>9.4</td>
<td>13.3</td>
<td>13.4</td>
<td>−16.1</td>
</tr>
<tr>
<td>Chemical, rubber, plastics; petroleum, coal (23, 24, 25)</td>
<td>12.1</td>
<td>6.0</td>
<td>−0.5</td>
<td>−4.8</td>
</tr>
<tr>
<td>Non-metallic mineral products (26)</td>
<td>3.0</td>
<td>3.6</td>
<td>9.4</td>
<td>−1.5</td>
</tr>
<tr>
<td>Metals and metal products (27, 28)</td>
<td>4.2</td>
<td>8.8</td>
<td>2.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Machinery and equipment other than transport equipment (29, 30, 31, 32)</td>
<td>6.6</td>
<td>0.2</td>
<td>1.0</td>
<td>4.9</td>
</tr>
<tr>
<td>Transport equipment and parts (34, 35)</td>
<td>0.2</td>
<td>−0.8</td>
<td>6.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Other manufacturing industries² (33, 36)</td>
<td>7.9</td>
<td>1.1</td>
<td>13.1</td>
<td>0.8</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>75.9</td>
<td>33.5</td>
<td>95.6</td>
<td>−36.9</td>
</tr>
</tbody>
</table>


Notes
1 Figures given in brackets are the National Industrial Classification 1998 codes of the corresponding industries.
2 'Other manufacturing industries' include mainly the manufacture of furniture (361) and the manufacture of jewellery, diamond and gem cutting and polishing (369).
Public sector as an agent of resource mobilization and structural transformation

It may be noted that, even before 1947, the importance of the public sector and of planned development was recognized by the leaders of India’s anti-imperial struggle as well as by the champions of domestic industry. In 1944, leading members of India’s domestic industry drafted the Bombay Plan, which envisaged a major role for the government in the future economic path planned for India. India’s Second Five-Year Plan, the implementation of which began in 1956, laid the foundations of a heavy industrialization strategy for the country. The Second Five-Year Plan accorded the highest priority to the building of a capital goods sector in India.

The preference to investments in the capital goods sector in India that began with the Second Five-Year Plan was based on a two-sector model by Professor P.C. Mahalanobis. According to Mahalanobis’ formulation, savings rate is a rigid function of structural features of the economy such as the capacity of the capital goods sector and capital–output ratios. A higher allocation of investment to the capital goods sector will result in a higher marginal savings rate, and thereby, faster rate of growth of output or consumption in the economy (Bhagwati and Chakravarty 1969; Chakravarty 1987).

India’s heavy industrialization strategy was drawn up at a time when the basic constraint to development in third world countries was conceived to be the low levels of savings and capital formation in these countries. Arthur Lewis famously described the problem of transforming a country which saves 5 per cent of its income to a country which saves 20 per cent of its income (Chakravarty 1987). In India, the public sector was envisaged to become the active agent of resource mobilization for development (Balakrishnan 2010). Jawaharlal Nehru himself had made this clear through his writings and speeches. For instance, while inaugurating the second Hindustan Machine Tools Factory at Bangalore in 1961, he said: ‘this factory has been made out of the profits or the surplus of the older
HMT factory and, rightly, therefore, it is called a gift to the nation by those who have been working in the old factory’ (Nehru 1961 cited in Balakrishnan 2010).

India’s planned development was able to achieve its stated objectives to a remarkable degree during the first 15 years, that is, from 1950 to the mid-1960s (Balakrishnan 2010). The Indian economy, especially the industrial sector, registered impressive rates of growth during these years, thus achieving a clear break from the stagnation of the colonial period. More importantly, there has been an impressive improvement in public sector savings and investment during these years (see Figure 10.3).

**Inadequacies of India’s state-led industrialization**

After recording relatively fast rates of growth during the first 15 years, there was a sharp slowdown in India’s industrial growth from the mid-1960s. This industrial growth slowdown provided the context for an important debate on Indian planning (Nayyar 1994). Some economists argued that the government should have intervened less in the economy given the inefficiencies that came to be associated with planned development. There were several criticisms on the country’s industrial policy framework, particularly on the regime of licensing (Bhagwati and Desai 1970).

![Figure 10.3](Image)

*Figure 10.3* Shares of public sector and private corporate sector in total savings and capital formation in India, 1951–52 to 2008–09, percentages (source: *National Accounts Statistics*, various years).
However, another influential opinion in the academic debate was that the government ought to have intervened more in the economy, particularly to eradicate inequalities in the distribution of land and other assets (Bagchi 1970). The Indian state’s planned intervention in economic growth was only modestly successful because of some of the inherent limitations of the societal and political conditions in the country on which the plan strategy was imposed. The state in post-1950 India attempted capitalist transformation through the instrument of planning without, however, transforming pre-capitalist agrarian relations—in other words, without effectively implementing land reforms or other measures to empower the vast sections of the under-privileged in the country.

As a consequence of the unequal income distribution and the slow growth of agricultural incomes, the expansion of domestic demand was slow. In turn, this was a major hindrance to India’s industrial progress.

Indian industrialization was particularly unsuccessful with respect to generating employment opportunities to counter the massive levels of disguised and open unemployment in the country. According to Bhagwati and Chakravarty (1969), India’s Five-Year plan models focused attention on scarce resources—that is, capital and foreign exchange—but assumed that labour was free. In the pattern of planned industrial development based on this assumption, it was not possible to make use of unemployed labour in the creation of extra social overhead capital (which could have helped in the redistribution of aggregate consumption).

It appears that a clear strategy on the small-scale sector was absent during the early years of Indian planning; this became another hindrance to employment expansion in the industrial sector. Plan models envisaged that the small-scale sector would produce consumer goods and generate savings required to sustain the growth of the capital goods sector. However, there were ambiguities regarding the question of modernization of the small-scale sector. More often, advanced production techniques were discouraged—as in the case of the textile industry—for fear of creating unemployment. Overall investment levels in the small-scale sector remained low, and previous studies have identified the absence of credit facilities as the most important problem facing small firms in India.

**Public sector as a source of employment and welfare**

There was considerable political turmoil in India between the mid-1960s and the late 1970s. Prime Minister Indira Gandhi faced stiff opposition from within her ruling party as well as from outside; internal emergency was declared during 1975–77; and the non-Congress government that took office in 1977 lasted less than three years.

Given the continuance of large societal inequalities and the slow expansion of industrial employment (as discussed above), the public sector in India had to take on an important mantle, especially during the politically turbulent 1970s. The public sector became the single largest source of quality jobs and a major dispenser of welfare measures for the government. Total employment in central
government public sector enterprises rose sharply from 0.7 million in 1971–72 to 2 million in 1982–83 (see Figures 10.4 and 10.5).

At the same time, however, public investment declined sharply in India after the mid-1960s (see Figure 10.3). Per capita availability of food grains and essential commodities declined to very low levels, especially in the drought year of 1965. The United States Congress refused to renew the Public Law 480 under which food grains were imported to India on concessional terms. With the suspension of American aid, the government’s ability to import raw material and machinery for industrial development was greatly impaired (Frankel 2005: 293–295). In 1965, India and Pakistan were also engaged in a border war and this further added to the economic difficulties.

Public investment was (and continues to be) an important source of demand for capital goods and basic goods. Therefore, the decline in public investment growth after the mid-1960s resulted in a slowdown in the growth of demand for these goods (Patnaik and Rao 1977). The public sector is also the major source of investments in the creation of basic inputs (such as steel, petroleum, minerals) and infrastructures (such as railways, electricity, mining) for industrial expansion. The stagnation in public investments slowed down infrastructure expansion in the country, especially of railways and power (Ahlawalia 1985; Chandrakar 1988). Growth in infrastructure investment was at the rate of 17 per cent per annum in the first half of the 1960s, but this growth fell to 2 per cent per annum in the period between the mid-1960s and mid-1970s (Ahlawalia 1985: 76). It can be seen that the decline in public investment also resulted in a stagnation in investments by the private corporate sector (see Figure 10.3).

Bardhan (1984) attributed the high capital-output ratio and the low capacity utilization in the public sector to the ‘politics of patronage’ in the country. He notes:

Senior appointments in the public sector are sometimes made more on the basis of political patronage than of merit… Expensive projects are hastily initiated on grounds of political expediency or regional favouritism…. Irresponsible decisions at the managerial, technical and worker levels thus feed on each other, creating a general atmosphere of demoralization and parasitism on the state

(Bardhan 1984: 69–70)

There were several positive aspects, too, about the economic policies initiated in India between the mid-1960s and late 1970s. Indeed many of these policies were marked by a yearning for self-sufficiency and a rhetorical commitment to socialism. India inaugurated the ‘Green Revolution’ in agriculture in 1965 and 14 large commercial banks in the country were nationalized in 1969. These measures helped to revive savings and created a new class of capitalists and entrepreneurs in the Indian countryside. Policy measures such as the Indian Patent Act of 1970 and Foreign Exchange Regulation Act of 1973 contributed in some measure to the building of India’s indigenous manufacturing capabilities.
Revival of public sector investments and industrial growth during the 1980s

The 1980s were a decade of gradual economic reforms in India—a period of transition between state-directed socialism and fast-paced market reforms. The industrial regulatory framework in the country began to be liberalized, and government policies displayed a favourable attitude towards private business enterprises. After a long phase of stagnation, India’s industrial growth revived from the early 1980s (Raj 1984; Chandrasekhar 1988; Ahluwalia 1991).

Several economists argued that the rise in public investment in India during the 1980s was a factor behind the revival of industrial growth. Nagaraj (1990) found that the rate of gross fixed capital formation and the share of public sector investment in domestic capital formation rose during the 1980s. There was also an increase in the share of ‘machinery and equipment’ in gross fixed capital, and an acceleration in investment in railways, electricity and petroleum. Further, there was a distinct improvement in performance and output growth of public sector enterprises during the 1980s. Plant Load Factor of thermal power plants, which was on a course of decline in the late 1970s, increased steadily from 1980–81. Deficits in the power sector came down from 16 per cent in 1979–80 to 6.7 per cent in 1984–85. In railways, the revival of investment was followed by a streamlining of its operations and improvement in efficiency in the use of railway wagons. Studies have further shown that the growth of total factor productivity in Indian manufacturing accelerated to 3.4 per cent per annum during the first half of the 1980s, compared to the negative growth rate (~0.3 percent per annum) during the preceding 15 years of industrial stagnation (Ahluwalia 1991).

It was during the 1980s that the early stirrings of the information technology (IT) and telecom revolutions occurred in India. With more income in the hands of the Indian middle class, there was an explosion in the demand for consumer goods, from passenger cars to toothpaste. More significant were the rapid expansion of rural non-agricultural employment opportunities and the substantial reduction of poverty during this decade.

The public sector in India during the period of economic reforms

In 1991–92, in the wake of a balance of payments crisis, India initiated wide-ranging measures for economic liberalization. The country’s policies relating to the macroeconomy, trade, industry, foreign investment, public sector enterprises (PSEs), agriculture and the social sector have been recast, thus marking a clear transition to a market-led model of economic growth.

The disinvestment of government equity in public sector enterprises has been an important objective of economic reforms in India from 1991–92. In the interim budget of 1991–92, the government announced its intention to divest a maximum of 20 per cent of its equity in selected central government PSEs. Since the 1990s, there has been a clear stagnation or even decline in the numbers of
PSEs and public sector employees. The shares of the public sector in total investment and savings in the country were on a downward trend too (see Figures 10.3, 10.4 and 10.5).

The programme of disinvestment received further impetus towards the end of the 1990s. The budget speech of 1998–99 announced that, in general, the government shareholding in non-strategic PSEs could be brought down to a low of 26 per cent, even as the government would continue to retain majority holding in strategically important units. Defence, atomic energy and railway transport were identified as areas of strategic importance. In other, non-strategic sectors, the government would go ahead with privatization only after installing proper mechanisms for regulation and for avoiding concentration of private power. The budget speech of 2000–01 announced that the ownership share of government in PSEs operating in non-strategic sectors could be reduced even lower than 26 per cent. The strategic sale route to disinvestment would be given greater importance (GOI 2011a).

The government policy on disinvestment during the early 2000s is well summarized in the President of India’s address to the joint sitting of Parliament in February 2002:

Disinvestment in public enterprises is no longer a matter of choice, but an imperative. The prolonged fiscal haemorrhage from the majority of these enterprises cannot be sustained any longer... [T]he shift in emphasis from disinvestment of minority shares to strategic sale has yielded excellent results. (cited in Muralidharan 2003)

Figure 10.4 Central public sector enterprises in India: actual numbers and log of investment, 1951 to 2010 (source: ‘Public Enterprises Survey’, various issues).
The government announced that the proceeds from disinvestment would be utilized for investments in the social sector, for restructuring of PSUs, and for clearing of public debts.

The reality, however, was that the major PSUs that were disinvested or sold to strategic partners during the early 2000s were profit-making ones. In fact, many of the disinvestment deals during these years amounted to handing over profitable PSUs operating in strategic areas to private monopolies. Thus, Videsh Sanchar Nigam Limited (VSNL), which was the sole international long-distance telecom provider and also the largest Internet service provider in India in the late 1990s, was sold to the Tata Group. The government abandoned a move for the acquisition of Indian Petrochemicals Ltd (IPCL) by the publicly owned Indian Oil Corporation Ltd, which would have created a major oil and petrochemical giant in the public sector. Instead, the government allowed IPCL to be taken over by the Reliance Group, one of the largest private sector companies in the country (Sridhar 2006).

Serious allegations of irregularity have been raised about several disinvestment deals that occurred during the early 2000s. The report of the Comptroller and Auditor General of India pointed out that the value of ‘surplus land’ amounting to 773 acres was not reckoned while determining the value of VSNL during its strategic sale. The Comptroller and Auditor General report also raised questions regarding the valuation of assets of Bharat Aluminium Company (BALCO)
and Modern Food Industries Ltd (MFIL). Some of the enterprises turned ‘sick’ and substantially reduced their workforce after privatization. The post-adjustment claims made by the strategic partners were, in some instances, more than the amount that the government received through the privatization process (Sridhar 2006).

The government’s plans for disinvestment met with considerable political opposition. In the general elections held in May 2004, the ruling alliance led by Bharatiya Janata Party was defeated, and a new United Progressive Alliance government led by the Congress Party and supported by left political parties came to power in India. The new government proceeded much more cautiously on disinvestment, to a large extent because of the pressure exerted on it by the left. In January 2005, the government indicated its intention to list large, profitable PSEs on the domestic stock exchanges and to selectively sell a minority stake in listed, profitable PSEs. At the same time, it was also decided that the government would retain at least 51 per cent shares as well as full management control of these enterprises (GOI 2011a). The Indian government has announced its intention to speed up the disinvestment programme again in the 2011–12 Union Budget.

A major casualty of the sharp slowdown in public sector investments in India since the 1990s is the state of the country’s infrastructure, especially the power sector. As shown in Table 10.8, average yearly rates of growth of energy generation in India have slowed considerably during the post-1991 years. The comparison with China with respect to the growth of energy generation capacity is particularly instructive (Table 10.9). As power generation has lagged far behind economic growth, power deficits have become quite frequent in several regions of India.

It is important to note that the impact of power shortages has been severest on small-scale industrial enterprises. Reports indicate that power shortages have crippled the growth of small-scale industrial units, especially in textiles and engineering, in major industrial towns in the country including Ludhiana in Punjab and Coimbatore in Tamil Nadu. Thomas (2009b) reported that several textile and engineering firms in Tamil Nadu were operating at 50 per cent or even less of their production capacities between November 2008 and May 2009, when the state government imposed severe restrictions on the use of power. Notably, micro and small firms in Coimbatore were paying Rs.4.30 or more per

<table>
<thead>
<tr>
<th>Period</th>
<th>Rate of growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977–78 to 1990–91</td>
<td>8.6</td>
</tr>
<tr>
<td>1991–92 to 1999–2000</td>
<td>6.8</td>
</tr>
<tr>
<td>2000–01 to 2009–10</td>
<td>5.7</td>
</tr>
</tbody>
</table>

Source: data from Ministry of Power reported in GOI (2011b).

Note
1 Energy generated by utilities and non-utilities from hydroelectric, thermal, renewable-energy and nuclear sources. Rates of growth calculated using semi-logarithmic regression.
Table 10.9 Energy generation in India and China in billion KWh, various years

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy generation in billion KWh</th>
<th>China/India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>China</td>
<td>India</td>
</tr>
<tr>
<td>1990</td>
<td>621</td>
<td>289</td>
</tr>
<tr>
<td>1995</td>
<td>1,008</td>
<td>418</td>
</tr>
<tr>
<td>2000</td>
<td>1,356</td>
<td>555</td>
</tr>
<tr>
<td>2005</td>
<td>2,500</td>
<td>697</td>
</tr>
<tr>
<td>2008</td>
<td>3,467</td>
<td>840</td>
</tr>
</tbody>
</table>


The transition from state to market in China

After the establishment of the People’s Republic of China in 1949, the Chinese leadership under Mao Zedong set out on a socialist path of development for the country. The prominent features of this development transition included huge investments in heavy industries and tight government control over market forces. Investment as a share of China’s GDP jumped to 26 per cent as early as 1954. Between 1952 and 1978, China’s industrial output grew at an exceptionally fast rate of 11.5 per cent annually, and industry’s share in GDP climbed from 18 per cent to 44 per cent (Naughton 2007: 56).

State-owned enterprises played a key role in China’s industrial transition during the Maoist era (Nolan and Wang 1999). After the collectivization of agriculture in 1956, the Chinese government initiated compulsory procurement of agricultural products from farmers at low fixed prices. While relatively low food prices ensured low and stable industrial wages, the prices of industrial goods were fixed at relatively high levels by the government. It is argued that such artificially set prices benefited China’s state-owned industrial enterprises, which recorded very high profits even when they were not very efficient (Naughton 2007: 55–77).

China’s economic reforms had been a highly gradual process for most of the 1980s. The reform measures were first initiated in the agricultural sector. Food grain procurement prices were raised, and procurement targets were stabilized. These measures greatly eased the pressure exerted on farmers during the Maoist years. Rural collectives were eventually allowed to contract individual pieces of land to farm households, and this led to a surge in agricultural production.
Another important reform measure was the setting up of township and village enterprises (TVEs). The number of TVEs in China expanded at extremely fast rates between 1978 and the mid-1990s. During the period 1978 to 1996, employment in TVEs increased from 28 million to 135 million, and output from TVEs as a share of China’s GDP increased from 6 per cent to 26 per cent. TVEs produced a significant impact on employment generation in China, especially in its rural areas. TVEs were also a source of competition to China’s state-owned enterprises (SOEs) (Naughton 2007: 274–275). As part of the reform process, there was considerable decentralization of power from the central government to the local levels, and local governments became major supporters of the growth of TVEs.

During the early years of reforms, i.e. between 1978 and 1984, SOEs were given managerial autonomy. Managers of these enterprises were allowed to make profits out of their surplus (after meeting their planned quotas) production. In the mid-1980s, the ‘contract responsibility system’ was introduced in SOEs, in an attempt to separate ownership and management and thereby transform SOEs into truly independent economic entities. However, while managers of these enterprises could take credit for the profits made, they could not be held responsible for any losses. Therefore, it is argued that this phase of restructuring of SOEs was only partially successful (Xiao et al. 2010; Shiyi et al. 2011). At the same time, Nolan and Wang (1999: 187), point out that ‘many fast-growing and fast-modernising large SOEs emerged under the contract system’.

Since the mid-1990s, the Chinese policy on SOEs has been that the government retains direct control over the large SOEs in strategically important industries, while smaller SOEs in non-strategic sectors are privatized. This policy is best characterized as one of ‘grasping the big and letting go of the small’. Several SOEs were converted into joint stock corporations. SOEs also directed their investments into areas with large economies of scale and with strategic importance such as energy, petroleum refining and telecommunications.

The number of SOEs declined sharply after 1998. At the same time, however, SOEs continued to retain a domineering presence in the case of large enterprises. In 2005, 3,999 SOEs accounted for a 25 per cent share in the total numbers of large and medium-sized industrial enterprises in China, but their share in the total assets of these large and medium-sized enterprises was 58 per cent. In 2007, of the top-500 Chinese enterprises, 69.8 percent were SOEs and they accounted for 94 per cent of the total assets of these top-500 enterprises (Xiao et al. 2010) (see Table 10.10).

The Chinese record in employment and inequality: a key difference with the Indian experience

Compared to India, China had made remarkable achievements in social spheres during the Maoist period, before the country set out on a path of market-led economic reforms in 1978. Drèze and Sen (2002) highlight that China’s much better record compared to India in human development indicators at the end of the 1970s was not on account of faster economic growth, but a result of extensive
state action, including public redistributive policies and policies for nutritional support and health care (Drèze and Sen 2002: 121). Carl Riskin (1987) writes that during the Cultural Revolution decade of 1966–76, Mao advanced principles that were aimed at self-reliance and egalitarianism. These principles tried to reduce ‘the three great differences’—between ‘city and countryside, worker and peasant and mental and manual labour’ (Riskin 1987: 201–202). According to Riskin (1987: 250), ‘China’s poor emerged from the Maoist era significantly better off than the poor in most other developing countries’ although poverty continued to remain in China. The overall Gini coefficient estimated for China declined to 0.33 in 1979, indicating less inequality compared to India (0.38 in 1975–76) and Indonesia (0.44 in 1976) (Riskin 1987: 250).

It may be noted that at the end of the Maoist phase of development, although China was egalitarian, it was also dualistic. There existed major gaps in income levels between the urban and rural sectors, while, at the same time, there was a great degree of equality within each of these sectors. The early years of economic reforms in China helped to bring down the country’s rural–urban disparities considerably. Decollectivization of agriculture, higher agricultural output and higher prices for agricultural products gave a boost to rural incomes in China. China became less dualistic, in addition to retaining its earlier achievement of low levels of inequality within the rural and urban sectors. As a result, by the early 1980s, overall inequality levels in China were reduced to the lowest ever levels. In 1983, China’s overall Gini coefficient, measured on income, was 0.28 (Naughton 2007). It is claimed that China was one of the most egalitarian societies in the world in the early 1980s (Naughton 2007: 217–222).

State employment had been a major source of employment in China’s urban areas. Publicly owned enterprises, which comprise SOEs, urban collectives and TVEs, accounted for 24 per cent of the total employment in the country even in 1996, almost two decades after the reform process (Naughton 2007: 183). However, from the mid-1990s, workers in publicly owned enterprises were laid off in large numbers. Solinger (2002) showed that the number of workers laid off from SOEs in China (xiagang workers) ranged between 40 and 46 million.

Table 10.10 Performance of top-500 Chinese enterprises by type of ownership, 2007

<table>
<thead>
<tr>
<th>Distribution by ownership, %</th>
<th>Return on assets, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of enterprises</td>
<td>Assets</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>State-owned</td>
<td>69.8</td>
</tr>
<tr>
<td>Collective</td>
<td>5.8</td>
</tr>
<tr>
<td>Private</td>
<td>17.8</td>
</tr>
<tr>
<td>Foreign</td>
<td>6.6</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Public sector units in China and India

The fast growth of the non-state sector after the mid-1990s could compensate, to a great extent, the job losses in SOEs (Shiyi et al. 2011).

It is to be noted that, after the mid-1990s, along with China’s greater integration into the world economy, there had been a worsening of inequalities in the country. Not only peasants in rural areas but large sections of urban residents as well saw their incomes falling in China after the mid-1990s. Solinger’s (2002) study on workers laid off from China’s SOEs (xiagang workers) point to their deteriorating living conditions. Many of these laid-off workers were middle-aged, under-educated and unskilled, and they were unable to find new employment opportunities in the private sector, especially in sectors such as information technology and financial services. At the same time, for new job opportunities requiring only less skills and education, displaced urban workers had to compete with large numbers of poor migrants from China’s interior regions (Solinger 2002).

From low wage competition to innovation: how easy is the transition for India and China?

The current phase of growth in India and China is, to a large extent, based on the availability and low costs of labour, be it factory workers or call-centre operators. However, advantages arising from low wages are likely to be short-lived. Therefore, the challenge for firms in India and China is to move up the value chain and become leaders in innovation.

MNCs in the United States and Western Europe continue to reign supreme in high-technology industries. For instance, R&D spending by Pfizer of the United States in 2002 was US$4.8 billion, which was more than the national R&D expenditure of India (of $3.7 billion in 2001) (UNCTAD 2005: 120). At the same time, firms in India and China also suffer from several limitations. Lardy (2002) and Steinfeld (2004) argue that China’s integration with the global economy remains a shallow one. Steinfeld’s study, which is based on a survey of 1,500 enterprises across five major Chinese cities, showed that Chinese firms play a major role in a process of modularization of global manufacturing, in which component manufacturing processes are spread out across locations and firms all over the globe. However, Chinese firms engaged in modularized manufacturing are competing on the basis of low costs and high volumes, and they continuously face the risk of being eliminated by the next low-cost producer. Even in the case of its high-technology exports, China is largely an assembler of high value added components. It is estimated that 80 per cent of the value added by high-technology firms in China is created elsewhere (Steinfeld 2004).

Based on an analysis of firms in the aerospace, oil and pharmaceuticals industries, Nolan and Zhang (2002) found that China’s leading firms face stiff challenges. In many sectors of global business, especially after the 1980s, there has been a growing concentration at the top, with a few leading, often oligopolistic firms, emerging as core ‘systems integrators’, and they control the entire sector. It was found that in terms of competitive ability, Chinese firms were weak
vis-à-vis these global giants, despite over two decades of economic reforms in China. The relative weakness of Chinese firms was more marked in high-technology firms (Nolan and Zhang 2002).

D’Costa (2004) argues that India’s software industry is overly dependent on the US export market and that this has locked the industry into a low innovation trajectory. It is also argued that India’s IT industry comprises a large number of small, undifferentiated firms engaged in intense price-based competition in low-end activities (D’Costa 2009).

Recognizing the importance of publicly created knowledge assets

India and China still possess some advantages in innovation-based or knowledge-based industries. First is the advantage of human capital. In 2000–01, the total numbers of students enrolled for tertiary education were approximately 12 million in China and ten million in India (UNCTAD 2005: 162). Approximately 350,000 engineering graduates enter India’s labour market every year. In 2004, China awarded 23,500 PhDs, 70 per cent of which were in science-related subjects (Altenburg et al. 2008). Second, both India and China have made huge public investments in science and technology over the past decades, and this is a strong base for future growth.

Since the 1990s, India has been a increasingly important player in high-technology services, especially software services. It is not adequately appreciated that this success is built largely on a foundation of public sector investments in the country in a range of high-technology areas. According to a senior employee of one of the first multinational giants to have set up an R&D centre in Bangalore (India) in the mid-1980s, ‘one reason [for the investment] was the science and engineering institutions [in Bangalore]’. Further, ‘We also wanted to collaborate with public sector units…. The depth of public sector companies in Bangalore was great…. We worked very closely with them, and many of them have over time launched very sophisticated and innovative systems.’

Government’s efforts in the innovation economy: China ahead of India

Given the growing challenges in the global innovation economy, it is impotent that PSUs in India and China continue to play an important role as generators of crucial knowledge assets in these countries. It appears that in recent times, China has clearly recognized the above-referred strategic importance of the public sector, whereas India has not.

In China, the government recently announced plans to raise the shares of seven ‘new strategic industries’ in the economy from the current 2 per cent to 15 per cent by 2020. These new industries, which include alternative fuel cars, biotechnology, environment and energy saving technologies, alternate energy, advanced materials, new generation IT and high-end manufacturing, are
expected to transform China into a more advanced economy (Rabinovitch 2011). China has made rapid advances in the fields of health and agricultural biotechnology. Reports suggest that the government under Premier Zhu Rongji was highly concerned about the growing dominance of US biotechnology firms in Chinese agriculture and, therefore, the government stepped up funding for research on GM crops that are highly suited to local growing conditions (Chen 1999). In 1999, government expenditure on agricultural biotechnology research in China was nearly ten times the agricultural biotechnology research budgets of India and Brazil in the same year (Karplus 2003 cited in Thomas 2009a).

SOEs have received a substantial part of the stimulus packages unveiled by the Chinese government during 2008–09. Government majority firms such as China Mobile, Baoshan Steel and China National Petroleum Corporation are growing in size and stature.

With respect to making advances in research and development, India is falling significantly behind even China, not to speak of advanced Western countries (see Table 10.11). During 1999–2003, there were only 119 researchers in R&D per million people in India compared to 663 in China and 4,484 in the US (see Table 10.11). Despite the fact that India has a few world-class educational and research institutions, only 10 per cent of those belonging to the relevant age group get enrolled in institutes of higher education in India compared to 40–50 per cent in developed countries. At the same time, China is aggressively promoting a programme of ‘reverse brain drain’; the Chinese Academy of Sciences has many attractive schemes to woo returnee researchers (Zweig 2006).

Despite the advances made in the software industry, India has made only limited gains in high-technology manufacturing, such as the production of electrical systems. Bharat Heavy Electricals Limited (BHEL), the public sector unit which is India’s premier producer of heavy electrical equipment, reported during the early 1990s that it could match its multinational rivals in product quality, price and delivery schedules. Yet it often lost out in securing contracts even in the domestic market because it was not able to offer long-term credit to its customers (Chakravarty 1990). Today, even as BHEL continues to be a profitable

Table 10.11 Indicators of performance in R&D: India, China and selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>R&amp;D expenditures as % of gross domestic product</th>
<th>Researchers in R&amp;D</th>
<th>Patents granted to residents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000–03</td>
<td>1990–2003 per million people</td>
<td>2004 per million people</td>
</tr>
<tr>
<td>India</td>
<td>0.8</td>
<td>119</td>
<td>1.0</td>
</tr>
<tr>
<td>China</td>
<td>1.3</td>
<td>663</td>
<td>–</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.0</td>
<td>344</td>
<td>–</td>
</tr>
<tr>
<td>South Korea</td>
<td>2.6</td>
<td>3,187</td>
<td>738</td>
</tr>
<tr>
<td>United States</td>
<td>2.6</td>
<td>4,484</td>
<td>281</td>
</tr>
</tbody>
</table>

unit in the public sector, India’s record in the manufacture of electrical and non-
electrical machinery remains poor, especially in comparison with China. As 
Table 10.12 shows, there has been a sharp rise in recent years in the ratio of 
imports to output in the case of industries manufacturing machinery and equip-
ment in India.

The case of India’s pharmaceutical industry further illustrates a lack of com-
mitment in the country to making advances in innovative industries. India’s 
domestic pharmaceutical industry has benefited greatly from state intervention, 
notably in the form of the Indian Patent Act of 1970, which allowed only process 
patents on drugs and food products. The share of Indian firms in India’s pharma-
ceuticals market (by sales) increased from 32 per cent in 1970 to 77 per cent in 
2004 (Thomas 2009a). More importantly, domestic pharmaceutical firms manu-
ufacture and sell generic drugs at relatively low prices in India. Indian firms have 
been major exporters of active pharmaceutical ingredients (APIs) and pharma-
ceutical formulations of several medicines, including vaccines and anti-
retrovirals (ARVs) (Thomas 2009a).

However, for all these the introduction of product patenting in India since 1 
January 2005, as part of the country’s commitments to the World Trade 
Organization’s Trade Related Aspects of Intellectual Property Rights (TRIPS), 
has posed major challenges to the generic drug industry in India. Indian drug 
firms are no longer able to manufacture generic versions of patented drugs. 
For some years, India’s leading drug producers have been trying to enter the 
highly competitive market for generic drugs in Western countries, but they 
face many challenges from global pharmaceutical giants, especially in the 
form of patent-related litigations. For instance, in 2007, Ranbaxy’s legal and 
professional expenses were more than one-third of its R&D expenditures. This 
Indian drug company was later (in June 2008) taken over by Daiichi Sankyo.

Table 10.12 Imports as a percentage share of domestic manufacturing output of 
machinery and equipment industries in India, 1996–97 to 2007–08

<table>
<thead>
<tr>
<th>Years</th>
<th>Import as % of domestic manufacturing output of machine tools, machinery, electronic and computer goods, and transport-equipment industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996–97</td>
<td>26.1</td>
</tr>
<tr>
<td>1998–99</td>
<td>27.6</td>
</tr>
<tr>
<td>2000–01</td>
<td>23.6</td>
</tr>
<tr>
<td>2001–02</td>
<td>26.0</td>
</tr>
<tr>
<td>2002–03</td>
<td>30.1</td>
</tr>
<tr>
<td>2003–04</td>
<td>34.2</td>
</tr>
<tr>
<td>2004–05</td>
<td>31.1</td>
</tr>
<tr>
<td>2005–06</td>
<td>41.8</td>
</tr>
<tr>
<td>2006–07</td>
<td>43.6</td>
</tr>
<tr>
<td>2007–08</td>
<td>50.4</td>
</tr>
</tbody>
</table>

Sources: output figures from Annual Survey of Industries, various issues; import figures from Export Import Data Bank (2011).
of Japan. In recent years, MNCs have increased their presence in India, conducting contract research and clinical trials on global diseases, eyeing the market of rich patients in India and abroad (Thomas 2009a; Chaudhuri 2005). The biggest losers of these developments are the poor patients in India and other less developed countries, who are denied the supply of affordable, generic drugs.

Conclusions

Public sector units in India and China are frequently portrayed as ‘inefficient’ producers, causing a drain on the national economies. This chapter, reviewing the relation between public sector and economic growth in India and China over a long period, contests that opinion.

In India, during the early 1950s, the public sector was envisaged to become the active agent of resource mobilization for development. Between 1950 and the mid-1960s, India did record impressive expansion in public sector savings and investment. There was also a revival in overall industrial and economic growth of the country during this period, thus achieving a break from the economic stagnation during the colonial period.

However, the state-led industrialization in India was not successful in transforming either the pre-capitalist agrarian relations or the unequal income distribution in the country. More importantly, it failed to generate employment opportunities in manufacturing and non-agricultural sectors in sufficiently large numbers. Given these circumstances, the public sector became the single largest source of quality jobs and a major dispenser of welfare measures in India. During the politically turbulent 1970s, employment in public sector enterprises increased rapidly even as public investment declined sharply in India. Subsequently, however, there was a remarkable revival in public sector investment and an improvement in the performance and output of public sector enterprises in the country during the 1980s.

The disinvestment of government equity in PSEs has been an important objective of economic reforms in India from 1991–92, but the process was particularly fast for a few years during the early 2000s. While the stated objective of reforms was to privatize loss-making units, some of the major PSUs that were disinvested or sold to strategic partners in India were indeed profit-making ones. In fact, many of the disinvestment deals in India during the early 2000s amounted to handing over profitable PSEs operating in strategic areas to private monopolies. The sharp slowdown in public sector investments in India since the 1990s has worsened the state of the country’s infrastructure, especially the power sector. Today power shortages are a major constraint to the growth of India’s industrial sector, especially micro and small industries.

Compared to India, China has made remarkable achievements in reducing societal inequalities and in generating massive numbers of non-agricultural jobs during the Maoist period and during the early years of economic reforms. It
appears that this has given greater freedom to the Chinese government while restructuring the country’s SOEs. Since the mid-1990s, the Chinese policy on SOEs is best characterized as one of ‘grasping the big and letting go of the small’: i.e. the government retains direct control over the large SOEs in strategically important industries, while smaller SOEs in non-strategic sectors are privatized.

The crucial challenge of the future for India and China is to move up the value chain, from being low-cost producers to becoming leaders in innovation. But given the dominance of Western MNCs in the global innovation economy, it is important that PSUs in India and China emerge as generators of crucial knowledge assets in these countries. The public sector can help generate new innovations in agriculture and labour-absorbing industries that can transform the lives of millions of poor in these and other developing nations (for instance, biotechnological innovations that drastically enhance value addition in the jute industry).

The Chinese state’s carefully planned investments in new areas such as biotechnology and alternative fuel cars indicate a clear recognition of the above-referred strategic importance of the public sector in that country. India had very well recognized the importance of the public sector as knowledge creators during the early decades of its planned development, but recent trends point to an absence of such commitment from the Indian state.

Notes

1 Reports indicate that average wages in China’s coastal cities have already risen above the corresponding wages in major south-east Asian cities. In 2005, average monthly wages for a factory worker, including social security costs, was almost $350 in Shanghai and almost $250 in Shenzhen. By comparison, monthly wages of a factory worker were approximately $200 in Manila, $150 in Bangkok and $100 in Batam in Indonesia. See The Economist (2007).


3 See the report ‘30 New Universities to Expand Access to Quality Education’ (2007).

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