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M.A. HISTORY

COURSE MATERIALS

ECONOMIC HISTORY OF INDIA SINCE 1857 CE

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ECONOMIC HISTORY OF INDIA SINCE 1857 CE

UNIT 1: Agriculture: Condition of Agricultural sector during 19th century- Zamindari, Ryotwari and Mahalwari Settlements Agricultural Indebtedness: Role of Moneylenders and its Impact- Commercialization of Agriculture Evolution of Irrigation Policy - Irrigation Commissions (1901-02 and 1927) - Famine Policy

UNIT II: Industries: Traditional Industries in Transition - De-industrialization - Small Scale Industries and Large Scale Modern Industries Stages of Industrialization Major Industries (Cotton, Jute, Iron and Steel and Plantation Industries) Impact of First World War and Industrial Development - Rise of Indian Capitalist Class

UNIT III: Trade, Finance and Banking: Internal Trade - External Trade - Trade and Monetary Policy - Banking: Origin, Growth and Development of Commercial Banks - Central Bank

UNIT IV: Transportation: Railways Roadways Waterways. Emergence and Growth of Cities and Ports - Development and Growth of Cities: Kolkata - New Delhi - Chennai

UNIT V: Nationalist Critique: Dadabhai Naoroji - Amartya Sen - Raja Chelliah - C. Rangarajan

UNIT I- AGRICULTURE

AGRICULTURE

Throughout the colonial period, agriculture provided a livelihood to more than two-thirds of the employed population in India. If the artisans lost export markets in the nineteenth century, peasants and merchants gained export markets. And yet, agricultural productivity stayed small and stagnant, and growth rates in agriculture were. Regional inequality increased, as some regions took part in the export-driven growth more successfully than did the others. The pattern of inequality that took shape during the colonial period turned out to be long-lasting. Pockets of rural poverty in later times had already emerged as pockets of rural poverty in the past. Areas that experienced the 'Green Revolution' in the 1970s and 1980s had started on the road to prosperity during British rule.

Why was growth so uneven? Why was growth low overall? Why did regions differ so much? This chapter will describe agrarian change over the period 1858–1947 and return to these questions at the end. The chapter has eight parts: trends, resources and techniques, commodity market expansion, regional experience, factor markets, effects of commercialization, explaining slow growth, and conclusions.

MEASURING AGRICULTURAL CHANGE

Data to measure agricultural change in the nineteenth century is limited. Official statistics started collecting land use data seriously from the late nineteenth century. However, the statistical abstracts for 1870 do report some figures for the extent of cultivated area. The data looks patchy and incomplete, so that the total figure must be an underestimation. Still, making generous allowances for the problem, the data suggests a very large increase in cultivated area between 1870 and 1939 (Table 4.2). Adjusted for multiple cropping, which canals in some areas enabled, the growth would be larger. The main gainers from this expansion were the food crops, wheat, rice, and pulses, and the industrial crops, cotton, jute, sugarcane, oilseeds, and groundnuts. We cannot exactly measure how much land these crops gained in the late nineteenth century, but we know that these crops gained from shifts in crop choice in the regions that received railways and canals. By comparison, millets (jowar, bajra, and ragi) did not gain much land.

For the period after 1890, crop output data improves. These are still difficult to use. Three scholars have tried to make the statistics more usable. They are: George Blyn on area and output in British India (territories of present-day India, Pakistan, and Bangladesh excluding princely states), S. Sivasubramonian on real national income in agriculture in undivided India (territories of presentday India, Pakistan, and Bangladesh, including former princely states), and Takashi Kurosaki on area, production, productivity, and income in India, Pakistan, and Bangladesh between 1900 and 2001. Each work has its strength, but they do not suggest significantly different results for the colonial period. I will, therefore, use mainly Blyn in the tables later. Between 1891 and 1946, the dynamism described earlier was over. The average growth rate of crop output was only 0.4 per cent. Non-food and commercial crops did significantly better than food crops, but the overall growth rate was still very low. These depressing results raise the question: Why was there stagnation in agriculture despite growth in exports and trade? One possible answer is that production conditions in agriculture limited growth.

PRODUCTION CONDITIONS

In a tropical monsoon region, the rainy season can make producing one crop fairly easy, but the long dry and hot rest of the year makes growing anything else very difficult. That would limit the prospect of growth unless irrigation in winter or summer allows the production of winter and summer crops. Besides, much of the Indian subcontinent does not have nutrient-rich loamy soil. In the Indo-Gangetic plains, both soil and water generally offered favourable conditions. But in peninsular India, both soil and water were deficient in quantity or quality, except in the presence of alluvial deposits or the black cotton soil. Economists and agricultural scientists discovered in the early twentieth century that the Indian yields were significantly smaller than yields of similar crops in East Asia, Europe, and North America. The reasons for this difference were not clear. One thing was certain that almost any available organic methods to raise yield, such as the application of manure, would need water, and India was deficient in water.

Most waters for agriculture came from the monsoon rains. The monsoon season did not last for more than three months. During the rest of the year, extreme heat and aridity would dry up a lot of the surface water. Except for a few regions, like the Bengal delta, seasonal dryness was universal in India. Because of high evaporation of surface water, irrigation would need either mobilizing water over long distances or accessing water from underground. Both were expensive options.

The two most common modes of irrigation were canals and wells. Canals could not be constructed with private money because they had to be large in scale, and wells were very costly to build in the Deccan Plateau. Given such costs, the fact that land irrigated as a percentage of cropped area increased from 12 to 22 between 1885 and 1938 (Tables 4.4 and 4.5) is quite significant. But this expansion was not enough to transform agriculture throughout the country. Both canals and wells came up in a few regions that had access to perennial sources of water. Four regions were important: Punjab, deltaic Madras, western UP, and Sind. Except for deltaic Madras, all the other areas were in the Ganges or Indus basins. In the Indo-Gangetic basin, the Himalayan rivers fed by snowmelt as opposed to monsoon rains carried more water throughout the year to support canals. The alluvial soil and easy access to underground water supported wells as well. In the drylands of the Deccan Plateau, canals could not be constructed easily because perennial sources of water were limited. Despite agriculture being so constrained, the opportunity to sell grain and cotton in world markets and distant markets stimulated agricultural growth. Because productivity would not easily change, the growth of markets brought gains to a few regions and to areas where surplus land was available.

PERMANENT SETTLEMENT OR ZAMINDARI TENURE

Under the zamindari tenure or Permanent Settlement (1793), property rights went to the former tax-collecting landlords or zamindari in exchange for a tax amount fixed forever (hence permanent). After the Company took control of Bengal, revenue farming continued out of necessity, with the change that auctions became more open and the terms of the lease shorter. The highest prices at the auction were frequently too high relative to the area's ability to pay. The winner of the bid either defaulted or tried to collect exorbitant rents from their tenants, who fled from their land. Revenue farming, therefore, was both unpopular and inefficient. The Permanent Settlement was the final result of this process. It gave the zamindars ownership and security, provided they paid their tax. The Permanent Settlement extended in the 1800s to coastal Madras and NorthWestern Provinces (eastern UP [United Provinces before 1947 and Uttar Pradesh after 1947]). In these years, the Company had too little information and local influence to upset the rural magnates and contract with the peasant-cultivators directly. It contracted with the formerly tax-collecting landlords instead.

The first 15 years of the Permanent Settlement saw a burst of auctions of zamindari estates in greater Bengal, induced by sharply raised effective revenue collection and the inefficiency of many zamindars. The auction sales tended to break up large estates into smaller lots. In Bengali, the word laat referred to resold bits of large estates, and 'going to laat' meant going bankrupt.

The zamindari settlement turned the peasants into the zamindars' tenants, liable for rent payment. The government left open the freedom of the zamindar to raise the rent. The administrators thought that the zamindars, 'grateful for the benefits secured to them, would in turn foster their tenants'. 19 In practice, the zamindars tried to exploit the tenants and sometimes joined with dominant tenants to exploit weaker ones. After Company rule ended, a series of tenancy acts (1859–1928) strengthened the occupancy rights of tenants and protected their rent.

RYOTWARI AND VARIATIONS

Under all other arrangements, ownership property rights were exchanged for a commitment to pay a revenue that was subject to revision, approximately every 30 years. When the Company acquired territories in the rest of India in the early nineteenth century, property rights reforms were done in a state of greater information and confidence. These were regions where the counterparts of the zamindars were weak and rare. Therefore, it was easier to consider peasant proprietorship in these regions. The arrangement where cultivators received proprietorship was known as ryotwari. In southern and western India, the ryotwari settlement was the common form. By the time ryotwari was established (around 1820), the mind of the major reformers had turned against zamindari from a sense that the zamindars were more intermediaries than cultivators. Ryotwari was, in principle, a direct contract between the ryot, or the cultivator, and the state. It meant a tax contract that remained valid for some time and was renegotiated after that.

In the upper Doab and Rohilkhand (present-day western UP and Haryana), the military power of the talukdars came down. Sometimes, the village republics or dominant kin groups became recognized as the proprietary body. The joint landlords of village lands were collectively responsible for the revenue. Therefore, joint rights cemented clan or kinship ties, and vice versa. The early years of over-assessment, however, made these rights unattractive, and they were practically unmarketable. The 1830s saw the first assessments of the individual shares in village lands. As these shares were defined, they became marketable and began to come into the market in

large quantities. By and large, in southern and western India, mirasdars received proprietary rights. In 1799–1800, the Company suppressed the 'poligars'. These were a body of tributary kings or chieftains peculiar to South India. A few of them became zamindars under British rule.

These three general types of settlement contract with peasants, with landlords, or with shareholders in coparcenary communities reappear with minor variations in other regions of India, including the princely states. Setting the ryotwari tax rate was not an easy process. Whereas in 1793 tax rates had followed convention, the new thinking was that the tax rate should follow the economic rule that the tax should equal the unearned rental component. Robert Pringle, an awardwinning student at the Haileybury College, which trained officers of the Company, was asked to create a tax on the net produce rather than one on the gross produce, which was the principle followed by earlier regimes, and to determine what the net produce on different kinds of land were. Pringle fixed the tax at 55 percent of net produce and carried out an extensive exercise classifying soil and cost of cultivation. Massive information problems rendered the entire exercise a failure and the high rate set was a disaster for the peasants. 20 The first 20 odd years of ryotwari saw an agricultural depression.

Towards the middle of the 1840s, a new assessment was under way. The architects of the new system were George Wingate, an engineer with the Company, and H.E. Goldsmid, a revenue officer. They were as doctrinaire as Pringle on the infallibility of Ricardo but created a more detailed information system on the relative fertility of plots of land and combined it with climate and market access. The information demands on that process were still enormous and beyond the capacity of the officers in charge. Wingate and Goldsmid ingeniously argued that the historically established rent should be the benchmark for the absolute level, provided it had allowed cultivation to expand. For that would be a sign that the tax was less than the true economic rent. In effect, the rate came down. From early in the second half of the nineteenth century, conditions improved. But whether the reversal was due to the effects of rising prices and expanding world market or the success of the Wingate Goldsmid settlement, it is not known.

While reforming the tax system, the Company took away some of the customary privileges of the local magnates, for example, the authority of the local officials to punish the defaulting tax collector or peasant. Suppression of this right made it possible for land to change hands faster and more easily when defaults occurred. The Company made the public sale of ownership mandatory

when tax defaults occurred. At a broader level, recognition of ownership rights meant devaluation of customary tenancy rights; recognition of peasants' rights meant de-recognition of the customary rights of the pastoralists, and poor legal protection of the village commons encouraged enclosures.

GAINERS AND LOSERS FROM INSTITUTIONAL REFORMS

Who gained and who lost through these processes? The answer varied by region.

In zamindari areas, the older elite initially gained. But some of this gain faded away as the nineteenth century wore on. Many zamindars did not live in the village. In one view, big tenant farmers, often called jotedar s, took advantage of the zamindars' distance from the land and unstable economic conditions to acquire wealth and power. The Permanent Settlement, 'long regarded as the propelling force behind a revolution in Bengali rural society, would appear to have effected a less fundamental change than is usually supposed'. In a different interpretation, except in a few districts, the small peasant dominated Bengal agriculture. Such peasants became more dependent on creditors as they became more dependent on buying and selling in volatile markets, and the market power of merchants and bankers increased. Both these accounts suggest that the zamindars did not dominate the countryside, at least, not for long. After 1870, groups of rich farmers consolidated their economic power by producing for a rising market, whereas the zamindars' power to share that gain by raising rents reduced because of tenancy acts that regulated rents. Elsewhere, members of the older elite, that is, groups with access to land but unwilling or unable to cultivate it, were more likely to sell land, leave the village, take a degree, and join urban services. At the same time, groups more likely to buy land were cultivators and labourers. In short, the long-term picture of the landlord areas was that of a slow attrition of the landlord's economic and political power.

In the countryside, the pattern of land transfers should suggest who was rising in power and who lost. Property rights reforms did stimulate land market transactions. But there is little direct evidence on just how big a change this was, that is, how often land rights changed hands. As we have seen, soon after the Permanent Settlement, zamindari titles changed hands a lot. In ryotwari areas, land transfers did increase somewhat. However, the extent of transfer was not very significant, as data collected for a later period shows.

The zamindari and ryotwari areas differed in the pattern of their subsequent development. Their ability to spend money on public goods was one of the potential differences. In zamindari areas, the government left the responsibility for making investments to the zamindars. In the ryotwari areas, the government implicitly assumed responsibility. Taxes being fixed forever in the zamindari areas, the government could not hope to recover returns to investment in the form of taxes. Nor could the zamindar raise rent after 1859, because new laws regulated rent. So the zamindar could not hope to recover returns on investment. In ryotwari areas, both these roads remained open. In all regions, however, agricultural productivity was low because cultivation depended on the monsoons and short seasons when agriculture was possible. The low yield limited local capacity to spend money as well. In agriculture, the main source of change was the State. In the non-agricultural occupations, the change came from markets.

COMMERCIALIZATION OF AGRICULTURE

Commercialization of agriculture, that is, production of crops for market sales rather than for family uses, started in the early years of the nineteenth century and gained in momentum after the opening up of the country by roads and railways in the middle of the century. The reasons for the transition of agriculture from a basis of family self-sufficiency to a basis of commercial gains are not far to seek. In the first place, the need for some cash earnings had arisen in the village owing to the introduction of cash assessments in the system of revenue collection as well as to the greater use of money for credit purposes. Secondly, the growing commercial classes flocked to the villages to secure crops for trade and their insistence led the villagers to plant cash crops, particularly when they were indebted to the traders for their occasional ceremonial and other expenses. In course of time the shrewd farmer himself began to appreciate the importance of cash crops. He found it easier in many cases to meet his subsistence needs by selling cash crops instead of growing food on his own land. The relative prices of cash crops and food crops began to determine more and more the uses to which his land would be put. The growth of cash crops was also encouraged by the Government of India's agricultural policy which remained geared throughout the nineteenth century, and even later. to meet the raw material requirements of British industry rather than to any purely domestic ends. As the farmer's requirements of cash were more or less determined by the amount of land revenue and other contractual demands, it would be natural for the farmer to vary his output of cash crops inversely with the market price of such crops.

Statistical evidence in recent years indicates, however, that farmers' demand for cash incomes has now lost the inelasticity it had in earlier periods.

With the spread of commercialization, agricultural production began to get localized. It now became possible for a particular area to grow simply one variety of commercial crop and trade it for its food and other requirements. It is obvious that such specialization was dependent on the extensive network of communications that was being built up in different parts of the country.

The export of agricultural products was sometimes attributed to the exploitation of the farmer through unduly burdensome land taxes. The late Romesh Chandra Dutt believed that India's comparative advantage lay in the production of cotton textiles and not in agricultural raw materials. The British Government, by artificially restricting the inflow of cotton textiles into England, was forcing Indian trade into channels which were not justified by India's natural advantages. The farmers, he believed, were being forced by extremely severe revenue demands to sell more of their crops than they would themselves consider desirable.

It is perhaps true that the relatively small farmers could derive very little benefit from the commercialization of agriculture. As agriculture became the hand-maiden of trade, the commercial interests began to appropriate the larger share of whatever gains accrued from the country's agricultural exports. The farmer, in fact, was made to bear all the unfavorable consequences of the instability to which the world trading system in agricultural products was usually subject. In a period of falling prices, the farm-door prices would be cut down promptly. But the benefits of rising prices would be slow to reach the farmer even when they reached him at all.

One of the early events that sparked off a boom in agricultural trading was the Civil War (1861-64) in the United States of America. For some years before the Civil War broke out Lancashire cotton manufacturers who derived the bulk of their supplies of raw cotton from the USA had become apprehensive of their excessive dependence on a single source of supply. They had initiated, through the Secretary of State for India, a number of measures that were calculated to increase the production of good, clean cotton in India. But these measures succeeded only to a limited extent. As the USA plunged into a Civil War, British purchase of raw cotton in India suddenly went up. Not only exports of cotton but of several other raw materials like jute and oilseeds aka expanded during the 1860.

It is still a matter of debate whether the expansion of commercial agriculture in India has taken place at the expense of foodcrops. While this may have occurred in some regions of the country, the overall picture is that the area under commercial crops has been obtained mainly by extending the acreage under cultivation. In 1950-51 only about 20 per cent of the gross cropped area was under the recognized commercial crops, viz., cotton, jute, sugar-cane and the various oilseeds. Commercialization of agriculture, however, has spread also to the foodgrains since an increasing proportion of the total production of all foodgrains nowadays passes through the market instead of being consumed on the farm.

COMMERCIALIZATION

As the railways and port cities brought down costs of trading and made distant markets more accessible, domestic and foreign trades in agricultural commodities grew. Trade in agricultural goods existed in organized forms and on a large scale in the pre-colonial period. But the market expansion in the nineteenth century was different.

There were three differences. First, before colonial rule, product markets were mainly local; weights and measures varied from place to place; and transportation systems like bullock caravans or riverboats were not suitable to carry goods in bulk everywhere. The railways weakened these constraints, integrated markets, and helped marking systems converge. Second, agricultural trade integrated India with the world economy. From the time of the Industrial Revolution, a new demand arose for agricultural commodities, both as food and as raw materials. At the same time, technological modernization kept industrial goods cheap. The relative price of agricultural goods worldwide started to rise from the 1860s, or the terms of trade between agriculture and industry started to rise. The rise continued until the Great Depression of 1929. And third, the growth of trade induced changes in factor markets, that is, stimulated movements of capital and labour. Commercialization of agriculture means the combination of these three processes.

Export in value increased by 500 per cent between 1870 and 1914. Non-manufactured goods accounted for 70–80 percent of the exports. The trend in agricultural prices moved consistently upward in a way that was thought to be without precedent by contemporary writers and administrators. With a doubling of prices between 1870 and 1914, the real revenue burden on the farmers fell by 100 percent. Price levels in 1928 were about three times what they were in 1875.

The area cropped increased in most regions in the period 1870–1920, usually led by marketable crops such as wheat, cotton, oilseeds, sugarcane, and tobacco. Rents and prices of land increased. The scale of credit transactions increased too. So did the scale of land transfers. Circulation of agricultural labourers in and out of agriculture increased. And last, indices of transportation and rural trade, such as the number of carts at work, show a significant rise where such data are available.

After 1925, and in some regions from before that date, conditions began to turn adverse. By the early 1920s, world agricultural markets had begun to face persistent oversupply and price depression. In India, major cash crops faced stagnant or falling prices, though cotton was temporarily free of crisis. The agricultural depression was one factor among many that led to the Great Depression in 1929–32. The Depression upset product markets and rural credit markets. Already in the 1920s, good-quality arable land was beginning to become scarce.

Which crops led commercialization? Opium and indigo had led an earlier wave of commercialization (Chapter 2). These were no longer lucrative trades after 1860. Chapter 2 showed that the export trade in raw cotton had begun before 1800 and grew in scale between 1800 and 1850. The users of Indian cotton changed from domestic spinners, towards spinners in Britain and China, before shifting back to cotton mills in India. Bombay's business as a port began to grow rapidly. Initially, Indian cotton was of a quality unsuitable for mills in Lancashire. When the American Civil War broke out in 1861, supplies of cotton from the American South to the Lancashire cotton mills stopped abruptly. India now emerged as a major supplier, and mills abroad found ways of mixing Indian cotton with other varieties to make it usable. Cotton export and prices crashed during the latter half of the decade as American supplies resumed. From the 1860s, mills in Bombay were the major new market for raw cotton. This boom reached a peak during and after World War I. By then, Japan, which had become one of the world's largest textile exporters, also purchased Indian cotton. Cotton for export came from a few regions that specialized in the crop, mainly Khandesh, south Gujarat, southern Bombay-Deccan, Madras-Deccan, and Punjab.

In the 1870s, Indian wheat exports to Europe began to grow. Indian wheat accounted for 14 percent of the total British import of wheat in 1883. Fall in transportation costs and repeal of an export duty on wheat sold from India encouraged the trade. Wheat went from Punjab, UP, and Bombay-Deccan. In the former two regions, wheat was a staple consumption good. In Bombay-

Deccan, where the staple food crops were millets, wheat mainly went to the export market. In the second half of the nineteenth century, Bengal, Burma, and South East Asia emerged as the world's main sources of rice. In South East Asia and Burma, rice accounted for over half of total export. In India, rice occupied from a quarter to a third of total export in a normal year. Bengal rice continued to reach other Indian provinces, as well as settlements of immigrant Indian workers in the empire. They preferred Bengal rice to the locally grown ones. Ceylon, owing to its plantations, was a destination for Bengal rice. Burma rice, on the other hand, went to Europe, was re-exported from Britain, and used for the manufacture of starch and spirits. Thanks to the use of the telegraph, rice and wheat markets were integrated to the extent that these grains were often substitutes. Rice from Siam and Cochin–China went to Japan, China, Java, and the Straits Settlements. Famines in any part of monsoon Asia affected and redirected these flows, if temporarily. For example, in 1863–5, scarcity in China led to the export of Bengal rice to China, and during the Orissa famine (1867–8), Burma rice went to Ganjam. In the early twentieth century, the importance of Europe as a destination for Burma rice declined, and by 1914, it was India that received 60 per cent of the rice exports from Burma. Maps 4.1 to 4.3 show the regions where major traded crops, including tea and jute that would be discussed in later chapters more fully, came from.

IRRIGATION

The Famine Commission enquiries from 1876 made it a canon that India, thanks to its tropical monsoon climate that made the region very hot and the rainy season very short, suffered from an acute seasonal scarcity of water, and that any serious effort to raise production and secure the welfare of the population would have to start with projects that delivered a reliable supply of water. In the end, the government could not do a lot in this direction, partly because of funds constraint and partly because it's engineering knowledge was just enough to make use of rivers that had plentiful supply of water throughout the year and to draw canals out of these. The knowledge could not extend to providing water where water was absolutely scarce. Still, the effort was substantial. The acreage irrigated as percentage of cropped area increased from 5 or 6 per cent in the early nineteenth century to 22 per cent in 1938. Government canals irrigated about 60 per cent of the addition to irrigated area.

Continuing from where the story ended in Chapter 2, major new irrigation projects from the late nineteenth century were canals taken from Himalayan rivers (in Punjab, Sind, and UP), and

weirs constructed on major rivers (South India). The Punjab canals spread water over formerly water-scarce territories, in contrast with canals in South India that mainly redistributed monsoon water and with canals in the UP that added surface water in a region well-endowed in groundwater. Among the largest projects undertaken were the Krishna and Godavari delta systems (1868) together serving close to a million hectares, the Western Jumna (Yamuna) Canal system (1892, half a million hectares), Sirhind canal (1882, one million hectares), Cauvery delta system (1889, 425,000 hectares), Upper and Lower Ganges canals (1854–78, 1.3 million hectares), and Sarda canal (1926, about half a million hectares). Smaller works that had considerable localized impact included the Sone canal (1879), the Nira valley system (1938), the Mettur project (1934), and the Upper Bari Doab canal (1879).

The Punjab canals led to the colonization of vast areas of wastes and pastures by migrant cultivators. Among the earliest canals constructed was the Bari Doab (1850–60). This canal irrigated the land between the rivers Beas and Ravi. The canal was meant to give employment to disbanded Sikh soldiers. Sirhind Canal (1869–87) was constructed on the left bank of the Sutlej, the headworks located at Ropar. The canal irrigated lands in Ferozepur and Ludhiana and the princely states of Jind, Patiala, and Nabha. The canal was a major source of prosperity for Ludhiana town. The Western Jumna Canal was a restored older work, which once irrigated lands around Karnal and Delhi. The Chenab Canal (operational in 1887) was constructed to irrigate the arid Barr region located in the Rechna Doab between the Chenab and Ravi Rivers. The Chenab Colony, among the most successful settlements, was formed out of the three adjacent districts of Gujranwala, Jhang, and Montgomery in 1892 and contained in 1901 a population of eight hundred thousand people. The canal irrigated an area of more than 20 million acres. The principal town in the Chenab colony was Lyallpur, named after Charles James Lyall, lieutenant-governor of Punjab in 1887–92 (see Chapter 4 on the canal colonies).

Under the Company, the engineering department of the army looked after canal construction. Canals were later handed over to the Public Works Department. For a few years after the Mutiny, the department was busy with reconstruction. A discussion soon started on its long-term goals. Irrigation was going to remain one of the goals. The first statement of an irrigation policy emerged through a series of official and semi-official writings. These made a distinction between those works built for purely administrative or famine relief purposes (later named

'protective' works) and those built to increase agricultural production (later called 'productive' works). The former class need not yield an income, though they might save the government money that would have to be spent on famine relief if a famine occurred. The latter class could be commercially profitable for the government. That irrigation works could be remunerative in both these senses, as money saved and money made, had already been demonstrated by several major works. For works that were too costly to be financed by the current revenue of the government, and which therefore needed raising loans in London, the projects must yield at least the interest on these loans.

What did this yield consist of? Irrigation can raise the productivity of land and, therefore, the income of the cultivators. The water that raised incomes was charged at a certain rate paid out of that income. This tax accrued to the Public Works Department and was a part of the rate of return on capital invested in irrigation projects. However, for such projects that had come up much before the department itself, no proper calculation of increased income or rate of return was possible. On the other hand, increased income from a plot of land also increased the rental value of that land. Land revenue was supposed to reflect the rental value. In areas not permanently settled, the government could realize this value. In ryotwari areas, irrigated land was charged higher land revenue. Again, no exact calculation was possible of how much the rental value of land would increase due to irrigation. Nevertheless, from time to time, land revenue on account of irrigation was estimated as the indirect return on irrigation projects.

The question of what monetary returns the irrigation schemes generated for the government was, thus, shrouded in speculation. The calculated rates of return varied widely between projects and regions. They also varied depending on whether the revenue generated and interest payments formed parts of the calculations. For the government to spend money on large projects with doubtful return was never a favourite option of those who decided Indian policy in London. In 1878, the 'Select Committee on East India Public Works' stated that large-scale irrigation projects were, by and large, a failure both commercially and in preventing famines. Almost at the same time, the 1880 Famine Commission gave a more informed and balanced picture of irrigation projects. The commission concluded that irrigation projects were on balance profitable for the government, yielding about 6 per cent on capital, but only after the land revenue collected was considered.

Major works in Madras, on the Godavari and Cauvery deltas, yielded good returns. Works in Sind were also profitable. The overall return on works in North India was positive but not large. Illconceived projects in Bengal, Orissa, and Deccan yielded negative returns. Private companies first built some of these projects with the rates of return guaranteed by the government, similar to the agreement for railway construction. The government later purchased them at unjustifiably high prices. Generally, in irrigation policy, there was a powerful opinion against private enterprise. Involving the private sector in the water supply might complicate the question of property rights in water.

Partly at least, variability in the rate of return reflected the type of projects and, in turn, the topography of different regions. If the Company's works in southern India were generally well-paying, one of the biggest new projects taken up in northern India, the Ganges Canal, was running at a loss in the 1860s. The main reason behind this difference was the topography of Madras, which allowed the construction of simple, low-cost, low-height barrages on shallow riverbeds to irrigate large areas. The canals in such a system were suitable for navigation during lean seasons. In northern India, on the other hand, irrigation over a large area required extensive masonry work and many more bridges. And canal navigation was not a source of revenue as road traffic was already quite developed in the region.

The non-monetary returns of irrigation projects, such as famine relief or increased prosperity for cultivators, were also mixed. The canal-irrigated area as a percentage of cropped area was not too different between Madras and Punjab in 1900. Yet, Madras suffered far more from famines. Canals, as such, did not prevent water scarcity in the dry months if the region suffered from a general shortage of rain. In other words, the natural supply of water shaped the capacity of canals to prevent famines. In several parts of the canal-served agrarian countryside, there were dramatic improvements in the wealth and income of the people. But the human and economic costs of these extensive projects were also large. These costs occurred due to a persistent engineering defect, namely poor drainage of excess water. The consequences in North India were saline deposits in certain parts and an increase in malaria in others. The authorities knew that these costs were present but felt that the overall return justified them.

The net effect of canal irrigation, therefore, is controversial. Canals turned near-desert wastelands in Sind and Punjab into cultivable land, with huge benefits for the peasants and

landlords in these regions. But these were initially water-scarce regions. The Ganges Jamuna Doab in UP was different. It was a flat plain hemmed in by major rivers and had a high water table already exploited through wells. In one view, the environmental effects of canals in this region were generally bad. Canals blocked natural drainage routes and caused waterlogging. The excess saturation led to saline deposits, called reh , which made large tracts less fertile and increased the incidence of malaria. The canals encouraged over-cropping and attracted the formerly pastoral groups to cultivate. As a result, the quality of livestock declined. Cash requirements to pay for the use of canals, enhanced rentals, and changes in composition of crops contributed to increasing rural inequality. While environmental distortions did exist, the effects of canals on private profitability are another matter. In another reading of the evidence, canals had significant benefits. Canals enabled rise in yield per acre, reduced the impact of harvest fluctuations, raised average living standards, and encouraged limited industrialization, especially sugar refining.

UNIT- II INDUSTRIES

INDUSTRY

The early nineteenth century saw a fall in the scale of production and export of Indian cotton textiles because of the decline both in European demand and in demand from the impoverished Indian aristocracy. Import of machine-made cloth and yarn shrunk India's position as a supplier of cloth to the world. The resultant process of unemployment of artisanal workers is called 'deindustrialization'.

Much of the research available on the subject tested how big the decline was rather than what effect it had on the rest of the economy. Early historical works on regional economies that commented on industrial decline used impressionistic data and discussed particular places and industries. A.K. Bagchi and Michael Twomey estimated the overall scale of the decline using indirect measures such as actual or potential job loss. Another work supplies a more directly measured and, therefore, more reliable figure for job loss in Bengal textiles in the early nineteenth century. What do these numbers mean?

The significance of the job loss depends on two things: the size of the labour force and the productivity of the labour force. The size of the labour force cannot be known for certain. The extent of the loss in Bengal, estimated at 4 per cent of the initial workforce spread over several decades, was large but cannot be called catastrophic. As for productivity, hand-spinners were mainly domestic workers who performed spinning in their spare time. The low opportunity cost of their labour meant that they were willing to perform spinning for a small payment. Their income loss, therefore, should be smaller than the employment loss. On the other hand, the massive fall in yarn and cloth prices that brought it about also enabled the poor to buy more cloth and the handloom weavers to buy yarn more cheaply than before, enhancing their productivity. Overall, the effect of the Industrial Revolution on Indian artisans was uncertain.

The iron and steel industry is sometimes cited as another example of deindustrialization. The evidence again is uncertain. The import of iron goods did increase from the late eighteenth century. Much of this demand was for cannons, guns, cutlery, or construction material, which the Indian iron smelter and blacksmith did not make on a large scale.

Overall, there may not have been a shock at all. Many new types of innovative enterprises were developing in the port towns in the early 1800s. Several of them involved European capital, technology, and artisanal skills. The general growth of Indo-European business after the end of the Company's monopoly over Indian trade in 1813 encouraged private investment in India. In the nineteenth century, artisan-entrepreneurs having some connection with the East India Company tried to erect iron shops after the English model. The migration of European artisans to India had begun in the eighteenth century. Many more travelled to India to make a career after the end of the Company's charter in 1813.

A Scottish ironmaster, Andrew Duncan, for example, set up a charcoal-using smelting factory in the Birbhum District of Bengal in about 1810. The factory failed a few years after. In Bengal, South India, and Kumaon, several other ventures in iron smelting began. The most famous one was established in the river port Porto Novo by the ironmaster Josiah Marshall Heath in 1825. This enterprise produced good quality of iron, and the Company thought it was worth supporting. It never made much money. The Company officers puzzled over why it was going bankrupt. Recent research suggests a common problem that the charcoal-burning iron industry was beginning to face in the early nineteenth century the high cost of wood fuel as forests receded. Besides, the factories usually located near the supply of ores, which were often remote places. Transportation from longer distances proved prohibitively expensive in the absence of good roads and railways.

Because the transportation problem was not serious there, a more secure foundation for industrialization was emerging in the port cities, Bombay, Madras, and Calcutta. The European population in these cities had encouraged the manufacture of many types of consumer goods patterned after goods in use in Europe. Contemporary reports mentioned horse carriages and furniture, watches, clocks, shoes, and glassware. Some of the artisan-proprietors of the firms set up large workshops producing intermediate goods. On the western bank of the river Hooghly near Calcutta, shipbuilding yards started. Here, one William Jones set up a canvas manufacturing unit, and the Company's large salt warehouse created a small European settlement. Much of the factory enterprise remained concentrated around the cities. In this way, though still on a very small scale, British capital, institutions like partnership, and certain artisanal skills moved into the port cities. These links paid off in the late nineteenth-century industrialization of these cities.

SMALL-SCALE INDUSTRY

In 1900, the majority of India's industrial workers were in industries that did not use either machinery or large factories. This chapter describes their experience. Traditional handicrafts formed a large part of this set, but the share of modern small-scale industry, which used some machines and hired some labour, was rising.

According to a popular interpretation, the handicrafts declined owing to competition from machine-made goods imported from Britain. Recent scholarship revises that interpretation. Imports did not damage all crafts. The producers of simple goods used as raw materials in other industries goods like metals, cotton yarn, dyes, wool, jute goods, and silk were more likely to become unemployed. Mechanized and mass production systems produced these goods much more cheaply. Industries using manual skills and decorative techniques, and serving urban consumers, survived on a large scale. For example, even as indigenous iron smelting disappeared, traditional blacksmiths continued to produce household utensils. Similarly, as cotton spinning disappeared, cotton handloom weaving continued to sell apparel that carried distinctive designs or were made in certain styles.

Such skill-intensive crafts benefited from foreign trade by accessing cheaper raw materials and tools. The decline in one kind of craft and survival in another did not mean that unemployed workers could shift to new jobs. There were many barriers. For example, amongst those who lost jobs in spinning were rural women with limited options about learning a new skill or working away from home. Overall, small industries showed increasing differentiation and inequality. Before I get to that topic, it is necessary to discuss more fully what kind of industry the chapter will describe.

TYPES OF INDUSTRY

Standard histories of Indian industrialization deal mainly with 'modern industry' or 'large-scale industry', defined by three features: use of machinery and steam-powered technology; large factories and large-scale employment of wage labour; and legal identity, such as being subject to the factory act or the company act. The next chapter will discuss such industrial units. This chapter deals with units where these features were either absent or present in a partial way. In short, the chapter deals with units that employed labour-intensive technologies, were situated in households or small wage-based workshops, and had no legal form.

Some of these firms used technologies that pre-dated the colonial period. Major examples of such 'traditional' small-scale industry or handicrafts were handloom weaving, leather manufacture, furniture, metal utensils, carpets, and pottery. There were, however, a few small-scale firms that were modern in origin; these used some machinery and machine tools and had a larger scale than the family or the workshop. Examples include foundries, cotton gins, jute presses, edible oil extractors, rice mills, bricks and tiles manufacture, and flour mills.

The dividing line between traditional and modern, and between large and small, was not a sharp one. Most types of modern smallscale industry, in fact, supplied old products. Thus, grain milled by machinery and that milled by hand both supplied the same consumers, but by different technologies. Sometimes, however, new technology led to a new product altogether. For example, buyers of rice often saw the machine-milled rice as a distinct product from handpounded varieties. Sometimes, the modern represented a form of technological adaptation of the traditional form. For example, handloom weavers set up small factories equipped with power-driven looms. Large-scale industry supplied raw materials to small-scale industry. Workers often moved between the two. Workers and entrepreneurs in small-scale industry sometimes learnt their skills and acquired new ideas by working in large-scale industry. For example, former workers in cotton mills bought discarded power looms, reconditioned these, and started small weaving factories.

LONG-TERM PATTERN OF INDUSTRIALIZATION

The statistics on industrial employment are available from two main sources: the census, which gives total employment in industry, and publication on officially registered factories, which gives employment for legally registered factories. Occupational statistics began to be collected and reported from 1881, but the level of detail and the definition of work and workers changed so much between the early censuses that it is not easy to create reliable series by using the censuses before 1911. The following tables given next rely on the census data processed and readied for use by S. Sivasubramonian.

Tables 5.1 and 5.2 suggest together that small-scale industry experienced a fall in employment and a rise in output, that is, a rise in productivity. Data on production in the largest of the handicrafts, the handloom textiles, confirms the productivity increase (Table 5.3). Handloom textiles accounted for a quarter to a third of employment in small-scale industry. Evidence of

productivity increase is present also in tanning and metalwork. The productivity increase owed, as we shall see, to both technological change and a shift of work from households to wage workshops, increasing the average hours contributed per worker. If we assume that the trend began in the first half of the twentieth century and that the rise in real income per worker in small-scale industry derived only from rising hours per worker, the estimated hours per worker increased in small-scale industry by 34 per cent between 1900 and 1947.

These facts suggest that there was a change in industrial organization. An indirect sign of organizational change is women's participation in industrial work. Women were more numerous in household industry, where work was part-time, and they were rare in wagebased industrial work, where work was full-time. Women were leaving industrial work from the early twentieth century, suggesting a fall in household units and rise in the wage-based units. That change implied a rise in average hours per worker.

Small-scale industry concentrated in the interior mainly UP, Punjab, and Madras whereas large-scale industry concentrated in the port cities. This pattern appeared because large-scale industry depended on overseas trade, ports, and banks. The small-scale industry depended more on local markets, materials, and skills available locally. Textile production dominated both (Table 5.4). Next in importance were food processing, metals, wood products, and hides and skins. In short, industries intensive either in natural resources (cotton, metals, minerals, animal substances) or labour dominated the composition of both.

This discussion suggests that the crafts saw a change in industrial organization and a rise in work intensity and productivity. How well do analytical models that fit in the craft experience in modern economic history explain these facts? There are two options available and neither performs this task well.

TWO MODELS OF TRANSITION IN HANDICRAFTS

The first analytical model is deindustrialization. Until recently, historians of Indian industrialization believed that the artisan tradition in the region suffered a catastrophic shock in the nineteenth century after imported European manufactured goods began to flood Indian markets.

The process is known as deindustrialization. Scholars such as Amiya Bagchi, Michael Twomey, and Amalendu Guha have measured the extent of the decline, found it of significant order, and read that fact as confirmation of a similar hypothesis advanced by the Indian nationalists at the turn of the nineteenth century. 2 Census data shows that between 1881 and 1931, employment in industry fell from about 20 million to 13–15 million, while at the same time, employment in agriculture increased from 71 to 100 million.

Arguing against the claim of a deindustrialization, Morris D. Morris said that since a large number of artisans survived the shock and continued to work in the twentieth century, historians should explain not only why decline happened but al why survival happened. Later scholarship pointed out two other anomalies. The fall in census employment seemed to affect women more than men. Why should a general decline affect women more? Finally, productivity increased in small industry (Table 5.2), which should not happen in an industry that is rapidly becoming obsolete.

The second analytical model is proto-industrialization. Economic historians of Europe and Japan offer a model of the expansion of the handicrafts in modern times. Variously called 'proto-industrialization', 'labour-intensive industrialization', and 'industrious revolution', these models suggest that cheap surplus labour inside family units, combined with growing desire for consumer goods, could lead to a continued expansion of the crafts in the eighteenth and nineteenth century. Proto-industrialization is not very useful to explain the Indian case. The model does explain why work intensity and productivity might increase inside the household but does not explain why, in India, women left industry. Besides, many Indian artisans who continued to the present times did not do so because their labour was cheap, but they possessed specific skills that machines could not compete with.

From the 1990s, a new scholarship emerged to offer a third view of the handicrafts. Whereas the deindustrialization model in India sees all the crafts as weak and vulnerable to competition of mechanized industry, the revision suggests that the crafts were diverse, that some quality and skills machines could not reproduce, and consumers were willing to pay for that quality. While not disputing that mechanized production had an adverse effect on the handicrafts, as indeed it did all over the world, the new writings suggest that the adverse effect was more severe in the production of low-skill goods rather than high-skill consumer goods; that surviving artisans gained from the same processes free trade and industrialization which threw their colleagues into

unemployment. They could gain from foreign trade by obtaining access to imported raw materials, distant markets, and from the transfer of useful knowledge. Some artisans made money in the process and invested that money in larger workshops. Sometimes, their decision to adapt the technology worked better in a larger unit than the family. The shift towards wage-based workshops entailed a decline in the share of women workers because these workshops employed migrants and men dominated the migrant labour pools in India. Handloom weaving is the most important traditional industry and an important test case for these generalizations.

HANDLOOM WEAVING

Between 1860 and 1900 (significantly, a period of railway expansion), hand spinning collapsed and hand weaving suffered a decline. But conditions of hand weaving improved after that (Table 5.5). Their markets were changing. Agricultural growth improved the purchasing power of peasants in some regions. Spinning mills began to appear in cotton-growing regions in western and southern India, and handloom weavers were among their clientele. This growth greatly cheapened their raw material. Weavers relocated their businesses to these clusters.

At the end of World War I, two and a half million handloom weavers were in business. The total employment in industries connected with hand weaving was possibly about three million or more. This figure represented 20 percent of industrial employment. Handloom weaving was, by far, the largest industry. The total production of cotton cloth expanded about 30 per cent between 1900 and 1939. The estimated number of looms at work did not change at all, but the estimated number of workers fell somewhat. Rising production and constant loom count suggest that the productivity and the capacity of the looms increased (Table 5.3). Information on technology confirms the point.

The power-driven loom was, on average, six to eight times faster than the hand-driven loom. Why, in the presence of such a wide productivity gap, did the handloom survive at all? We should approach the question by dealing with, in that order, markets, organization, and technology.

Competition between machinery and crafts was limited to certain products. In the mid-nineteenth century, two types of cloth faced keen competition from foreign or Indian mill-made cloth: ‘coarsemedium’ cotton cloth and printed and bleached cotton cloth. By contrast, cloths that used very coarse or fine cotton yarn or complex designs woven on the loom or non-cotton yarn came from the handloom. An example of a designed garment was the sari. The sari allowed for

particular types of border design that only the handloom could effect. The handloom survived partly because that type of sari continued to be in demand. These designs or products were either so labour-intensive that the mills did not enter them by choice or used non-cotton fibres (silk and synthetics) that the cotton mills did not want to handle because they did not make yarn from those fibres. Thus, in cloths made of silk and other fibres, handlooms dominated.

The growing purchasing power of a section of the peasants and workers sustained the demand for handloom cloth. Although agriculture was generally stagnant in the early twentieth century, some forms of rural income were growing. Real wages in large-scale industry increased 85 per cent between 1900–4 and 1935–9. Within agriculture, foodgrain production was stagnant, but non-foodgrains, which included major industrial raw materials, expanded. In some regions, agrarian expansion continued. In South India generally, agriculture was doing well and so was weaving. In Bengal, agriculture was stagnant and weaving was in decline.

The usual organization in the nineteenth century was the household. Women and girls of weaving families were engaged in warping the yarn and winding the thread onto bobbins for use as weft yarn. They shared with men the task of sizing, that is, applying starch paste on the warp thread to make it strong enough to withstand the tension of the loom. Weavers, as a rule, were men, sometimes assisted by young adults. About one in ten women in weaver families knew how to weave. Usually, they learnt to weave half-heartedly and from observation rather than via systematic apprenticeship such as the boys went through. In fields allied to textiles, such as sericulture, women performed vital tasks in the manufacturing process. Wherever men's and women's work were connected in this way, women's work participation tended to be higher, and so did the extent of household industry. Thus, women formed 40 percent of the textile workforce in 1931 and a similar percentage in household industries.

The situation changed in the twentieth century. The household was in decline in handloom weaving. In the interwar period, a significant number of handloom factories appeared in the textile towns of the cotton regions of western India. These factories employed migrant male labourers and were started by rich weavers and merchants who had made money in the relatively new trades in cloth, yarn, dyes, gold thread, and silk. They generally used improved tools. On the other hand, wherever the household survived, women took on more work in these units, often as weavers. In

the 1950s, women weaving on looms was a common picture in the South Indian towns. It is now almost the standard practice.

Because depression and dynamism coexisted, capital and labour had become increasingly mobile. There was migration from rural regions towards new points of trade and towards the railways and spinning mills. One example of such a flow is migration into textile towns in western India, such as Sholapur, Malegaon, Bhiwandi, Burhanpur, and Surat. The workers, as well as the capitalists, were handloom weavers who came from depressed and overpopulated regions like eastern UP and the Hyderabad state. Today, in many towns of western India, the older quarters house settlements of handloom weaver communities. Some of them continue to work in the textile business, though rarely in handlooms.

The early twentieth century saw an increasing adoption of several new types of tools and processes. Three things helped: a campaign by provincial governments, capital accumulation, and examples set by leading weavers or master weavers. The increasing wealth of capitalist weavers and the increased stability of their markets made them more willing to try new tools. It is in this activity that foreign contact contributed in the most positive ways.

Nearly all of the tools and processes adopted by the weavers in late colonial India, such as the fly-shuttle slay, the frame-mounted loom, the jacquard, dobby, drop box, and synthetic dyes, had been invented in Europe and came to India embodied in imported equipment. The older vintage of loom was the throw-shuttle type, set up in a pit dug in the living room of a weaver's home. From this system, there was a change towards the fly-shuttle loom or a loom mounted on a wooden frame. The frame loom took up less space, could weave longer lengths of yarn, and thus, became popular with the handloom factories. Warp preparation changed from systems whereby the warp was stretched out towards the use of a warp beam such that longer lengths of thread could be woven. Warp preparation was previously a side activity of women in weaving localities. The warping mill replaced this form of collective labour. Another type of technical change was the synthetic dyestuff in place of vegetable and animal substances, with the result that dyeing became less specialized and integrated into textile production. Through these changes and the handloom factory, weaving and processing separated as tasks, and thus specialization and division of labour increased by comparison with household-based weaving.

Based on the data that we now have, inequality increased within handloom weaving in the early twentieth century. Inequality increased because the transition in the industry increased returns to capital and skill, and it benefited capital and skilled labour more than it did generic labour. Capitalists gained because there were new avenues for making money, but these avenues required more capital. For example, cotton yarn, earlier made locally by hand, was now either imported or manufactured in mill towns and distributed in handloom towns and villages by merchants specializing in longdistance trades. Weavers bought dyes, gold thread, and silk yarn from local and foreign markets. Merchant profit as a category and merchants themselves became more noticeable in sources on weaving from the interwar period.

Among producers, at the top were groups of producers that manufactured silk or cotton cloths involving complicated designs, who often used elaborate looms, were urban, took part in long-distance trade, and were in some way involved in a business network. At the other end were the rural artisans who supplied simple routine articles to their peasant neighbours. Rarely were these articles traded beyond the immediate neighborhood. In the nineteenth century, famines and economic distress induced migrations of artisans like these. Generally speaking, the weaver handling silk or fine cotton cloth had an income between three and five times that of a weaver making ‘coarse’ or ‘ordinary’ cloth.

The traditional handloom set up in a pit in the handloom weaver’s living room was a very different machine from the power-driven loom. But the automatic handloom mounted on a frame inside the factory and the power-driven loom looked similar and worked on the same principle, but for the source of energy. In the interwar period, many power-driven looms were discarded at scrap rates by the mills. Buying such a loom and reconditioning it to fit the weaver’s factory shed was not an expensive proposition. Relatively welloff weavers started to replace handlooms by power-driven looms in products where such a switch was possible. The first such looms appeared in handloom towns in about 1900 and ran with fuel oil. From the 1930s, the power looms spread much faster when many interior towns with handloom industries received electricity. The ground was ready for what was to become India’s largest industry at the end of the century.

The handloom power loom clusters occurred in small towns in western and southern India, which developed a business ecosystem that differed in fundamental respects from those associated with the factory industry and traditional business communities in the big cities. A recently

published book tries to understand this form of capitalism, based on small-scale textile production and trade in smaller towns. The book questions the common belief that the handicrafts were destined to collapse when competing against machine-made goods and stresses the importance of local and regional resources in sustaining craft-based urban enterprises.

THE IRON INDUSTRY

In precolonial India, iron ore and charcoal were available along the fringes of the Deccan Plateau and in some Himalayan regions. However, most such sources of supply were located far away from the cities and the ports, and far away from the potential consumers of complex metal products. Artisan communities producing semifinished iron tended to be located near the ores and worked on a scale and level of capability adapted to meeting local rural demand for iron. The singular feature of the industry was that the knowledge of iron making remained confined to communities living near the ores. The indigenous smelting industry was almost universally a local craft pursued by semi-nomadic tribes. The knowledge of smelting did not travel far from the hills and forests where the ore deposits were. These groups were quite often miners, smelters, and smiths at the same time.

The method of production was simple. A band of a dozen or so men mined on the surface of a small area, set up a furnace, and when the wood fuel was exhausted in that area, moved away to a different location. The whole process occurred on a small scale by European standards. The typical output of one round of smelting in a forest furnace was about five kgs crude iron. The best estimate of annual output per furnace would not perhaps exceed 1–2 tonnes. Due to the small scale, production costs were high, compared with the much larger smelting workshops in Western Europe. But the industry was protected by high transport cost. At the same time, transport costs limited trade, average scale of production, and interregional knowledge exchange. The range of iron goods was limited to agricultural implements. A much smaller but wealthier urban tradition manufactured a diverse range of consumer goods but usually utilized recycled material rather than ores.

When European iron began to come into India on a large scale from the early nineteenth century, the local industry quickly became obsolete. Throughout the 1800s, iron and hardware were the main imports after cotton textiles and railway materials. The railways reduced transportation

costs and brought markets within easy access to the cheaper imported pig iron and steel. Wood fuel began to become scarce, as forests were reserved. Alternative demands for wood in construction, shipbuilding, and railways grew. In some regions, wood even ran out. Given its dependence on rural markets, artisanal smelting could not expand its scale, economize, and thus absorb costs.

European artisans in India tried the larger-scale and horizontally integrated factory. The physical distance between their targeted market, which was the government, and the origin of ores again posed a transport problem. The one hypothetical advantage they had was cheap labour. But Indian labour was located near the ores, usually found working within traditional institutions such as the household and used to operating small-scale units. On the other hand, skilled labourers imported from Britain were few, expensive, and often unreliable and inefficient. Moreover, in common with indigenous smelting, European smelting had to contend with the rising scarcity of wood fuel.

But even as there was loss of an extensive smelting industry, the net effect of imported iron was not negative. It stimulated consumption and indirectly helped the blacksmith. In the nineteenth century, Indians consumed iron in greater quantity and variety than before. According to one estimate, the average consumption of iron increased from 0.9 kgs/capita in 1788 to 3.2 kgs/capita in 1914. While the proportion of imports in total consumption increased (from 30 to 78 percent), imports did not only replace domestic production but also stimulated it. 7 For example, cutlery, which had been a semi-specialized urban branch of the smithy, quickly switched over to Swedish and Sheffield steels, substituted imported cutlery, and strengthened its craft skills, while cutting off ties with indigenous smelting.

The main beneficiary of imported iron was the blacksmith serving urban markets. The skilled blacksmith experienced a steady increase in real wages, and more village blacksmiths joined the urban foundries and forges. In contrast with the smelters, many of the specialist blacksmiths had belonged to urban communities, were located closer to consumer markets rather than ore supplies, and were, therefore, less susceptible to the adverse effects of narrow markets. In this sphere, globalization had a more adaptive effect. The only complementary factor necessary to make good use of imported tools and ideas was craft skills, already available in abundance. Retraining needs were not always great and retraining prospects were better in the towns. Much knowledge was embodied in small tools, partly imported and partly substituted with refashioned local tools. There

were small economies of scale in the smithy; consequently, capital cost was of little consequence. The city, the ports, the barracks, and the public works allowed a convergence of knowledge to develop between European and Indian artisans. Blacksmiths benefited from the unconventional communication opportunities provided by these new sites while adapting new knowledge in their way.

LEATHERWORKERS, POTTERS, CARPENTERS

Tanning of hides and skins became a major export item. From the 1870s until the Great Depression, it remained a major export. After that, the export of tanned hides and skins fell, but increasingly local leather manufactures used tanned hides and the export of such manufactures began to increase. Today, leather is one of South Asia's principal manufactured exports. Much of the industry built upon a foundation of skills, expertise, and capital accumulated during the colonial period.

Tanning was originally a rural craft. It occupied groups of people who were also part-time agricultural labourers. They were placed lowly in the caste hierarchy and had little bargaining power in dealing with their main customers, the peasants. In most places, hides were bartered for grain. But the terms of the barter were adverse for the suppliers. The usual organization in rural tanning was either a single household or a collective. The tanning locality was a little apart from the main village where the village was a large one. In this locality, men, women, and children worked together in jointly owned pits.

The export market concentrated hide trade in Kanpur (Cawnpore), Madras, Bombay, and Calcutta. And the superior quality demanded by foreign consumers of Indian hides encouraged the hide merchants to establish factories in these cities. These developments, first of all, weakened the rural barter system. Anyone who had access to hides now wanted to sell it to an exporter. It also encouraged leather artisans to migrate to the cities in large numbers. They were re-employed as factory labourers in the merchant-owned urban tanyard. In the course of this change, flaying, tanning, and leather manufacture, which had formerly been performed by the same person, separated. Division of labour and specialization increased thereby. The old customs did not completely vanish, but the factory was a freer system of work.

The North Indian potters also performed rural labour on the side. The growing demand for metal utensils, the rather poor quality of their pottery, and the difficulty of long-distance trade in the average earthenware articles adversely affected them. The vessels of mass consumption were flimsily made, given the force of a custom that frowned upon re-usage of earthenware. The only segment where superior skills existed was the objects of art made by specialist groups. Their industry (such as the one in Khurja town in North India) needed more expensive kilns. Towards the end of the period of study, this sector diversified into ceramic tools and components, which is now one of its major outputs.

The major occupation of carpenters in the colonial period was the supply and repair of agricultural implements. As a result, carpenters and smiths often belonged to the same caste but different sub-castes. Usually, they were found nearby. Like the blacksmiths, a bifurcation of demand occurred in the case of the carpenters as well.

The furniture industry as we know it today developed from the colonial period. The very nature of interior decoration and furnishing, which urban Indians consider standard today, was a product of the cultural contact with the British. The industry developed initially by drawing in artisans who were engaged in supplying traditional rural demand. It concentrated in towns and cities that had a large number of people willing to buy new types of furniture and was mainly factory-based. Thus, in the course of adapting to new demand, there occurred increasing specialization, urban migration, and changes in organization in favour of larger city-based workshops (see Map 5.1 for clusters of major forms of small-scale industry).

LABOUR AND CAPITAL

The family firm and the master–apprenticeship system were the two general pre-factory systems of production that survived the colonial period. These institutions performed the important function of industrial training before technical schools started. These two systems were not completely distinct. There were hybrids too. For example, neighbourhood women often worked together inside someone's home or common spaces. North Indian embroidery, especially Lucknow chikan, is an example of this. Warping of thread before it went into the handloom was performed by women and girls in a common area shaded by trees inside the weavers' village. Another hybrid was inter-family hiring. In big hubs of craft industries, families sometimes exchanged young

apprentices within a neighbourhood. There is a description of such a system in South Indian silk weaving. The respondents explained the apprenticeship system as a form of school, meant to engage boys who, without the discipline, would grow up to be 'disorderly youth and men, predisposed to drunkenness and brawls'.

Households and apprenticeships became weaker than before. As we have seen, new opportunities often demanded more capital. Limited access to capital made it difficult for the family to survive. Growth of trade encouraged clustering and agglomeration of the business, which encouraged migration, and since migrants tended to be males, migration encouraged a break-up of the family as a unit of work. Some technologies (such as a warping mill) were incompatible with the household form of production. Surplus labour available for industrial employment increasingly originated among groups, like small peasants, that did not have prior experience in the industry and thus had no prior ties with traditional employment institutions.

From the last quarter of the nineteenth century, there was steady and large-scale migration of artisan groups to industrial towns. Some of them gave up their craft to become general labour. Some entered the mills. Still others only relocated their craft near sources of manufactured or imported raw material and market points. Employment was typically in factories in these towns. In almost all cases, the relocation of work from the countryside and households towards the urban factory attracted more men than women (see Chapter 10). The conditions of employment of children must have changed too, but we know too little about that process. The masters of the old master–apprentice systems would not see themselves as teachers of a craft, but increasingly, just as employers.

Small-scale industry, in general, had little or no contact with the formal banking sector. It had little contact even with the informal money and capital markets. The main form of working capital finance was trade credit and personal saving. It was probably easier to raise fixed capital loans in certain towns than in others. Surat, a major textile centre, was an example where employers and traders in the jari (gold thread) industry routinely gave loans to the artisans engaged on contract for purchase of machinery. This was not a common system, however.

In industries such as handloom weaving, the capitalists came from artisan communities. On the other hand, in tanning, capitalists came from merchant communities. In the former, weaving

skill was the main form of capital. Those who possessed such capital could often control the trade because they could guarantee quality. Weavers often knew their markets very well or were in touch with the consumers, which knowledge helped them keep control of the industry. In an exportable craft like leather, the larger scale of trade and the non-traditional market made working capital and information both scarce resources. In this case, the merchant firms had greater control over production.

Community resources mattered too. Silk weavers had been urban elites and had well-developed, collective associations and guilds, which could be used in a market context to diffuse the ill effects of growing inequality, keep control over scarce capital and knowledge, and channel community resources to the benefit of the members. Caste and community associations among the skilled artisans developed or were revived, to take care of some of these roles.

MODERN SMALL-SCALE INDUSTRY

Modern small-scale industry is an under-researched field. What we do know on the subject can be organized into four points. First, factories with little machinery and less than a hundred workers were almost unknown before 1900 but quite common in the 1930s. Second, modern small-scale industry concentrated in textiles, fooddrink-tobacco, wood, and ceramics. Many factories were seasonal. Third, a segment among them, such as the power loom factories, operated in old products. They represented advanced forms of the handicrafts. Others were of new origin and had no such prehistory. Fourth, the growth of modern small-scale industry dispersed factories beyond the main mill towns such as Calcutta or Bombay. Modern small-scale industry clusters were located all over India. Generally, they were located near raw material sources. But there were exceptions. Some of these clusters formed near big cities. An example was tanning in Dharavi, which later became a part of Bombay. Another example was engineering and metal-working firms such as foundries in Howrah, near Calcutta. One reason that industries like these clustered was the availability of cheap electric power. Power was not yet widely diffused in the 1930s.

Further, these new firms usually sold products via urban marketing networks. Leather was exported and, therefore, benefited from being close to a port. Sometimes their markets were concentrated. For example, the engineering firms supplied cast iron tools, parts, and consumer goods to urban users, including the government and the mills. Cotton gins did business with the

Bombay mills. Finally, nearly every small firm used the railways and many used the telegraph. In short, while modern small-scale industry was more dispersed than large-scale industry, it retained an urban, sometimes a big-city, bias.

Rich farmers invested in agricultural processing factories in the canal colonies in the Punjab, Coastal Andhra, Upper Doab, Tamil Nadu, and the sugarcane belt on the Nira canal system in Bombay. In Tamil Nadu, rich peasants started factories. In Punjab, coastal Andhra, Tamil Nadu, Nira Valley, and Khandesh, prosperity based on rice, wheat, sugarcane, and cotton induced many farmers to set up cotton gins, sugar mills, and rice and oil mills. The other factor was a fall in the relative return on land from the interwar period, as agriculture became less profitable than before.

The Great Depression led to a reallocation of rural savings. Like elsewhere in the world, the depression of the 1930s brought in a crisis of inadequate liquidity, as real debt volumes increased and incomes fell. With the crash of agricultural prices, land lost its worth as collateral. Peasants were forced to liquidate gold and silver assets. Via banking, some of this rural capital moved into industry. These hypotheses are conjectural. But they are supported by the fact that the major expansion in small factories, at least in Tamil Nadu, occurred in the 1930s and the 1940s.

A further source of the growth of rural factories was the increased demand for their products. For example, the rice mills initially made ‘parboiled’ rice for export to South East Asia. Increasingly, local consumers began to replace the export market. Cheapness and better quality of the parboiled rice and consumption of rice by people who formerly ate coarser foodgrains were the major reasons. A similar set of circumstances encouraged growth in factories engaged in groundnut oil extraction and beedi making.

LARGE-SCALE INDUSTRY

Large-scale industry combined three things: employment of wage labour, use of machinery, and regulation by factory and company law. Between 1860 and 1940, employment in factories increased from less than 100,000 to two million. The share of factories in industrial employment of British India increased from almost zero in 1850 to 11 per cent in 1938, and in industrial income from 15 per cent in 1900 to 45 in 1947. The princely states saw a late start but rapid growth in the interwar years.

The growth is impressive by any standard. But it had certain peculiar features. These industries mainly produced different kinds of textiles (cotton and jute being the most important), and processed agricultural commodities (rice mills, oil mills, sugar refining, and tobacco products, see Table 6.2). In short, they were intensive users of labour and natural resources, but not capital. Metals, machines, and chemicals the capital-intensive industry had a small share throughout. These industries were also geographically concentrated. Five cities Bombay, Ahmedabad, Madras, Calcutta, and Kanpur contained the bulk of factory employment. Most factory workers in these cities were migrants, and since migrants in India tend to be males, the labour force was predominantly male. Factory industrialization did not serve women workers well.

The growth of factories raises a few puzzling problems. If textile factories used less capital per worker than did metals or machines, they still used a lot more capital than trading, which was the original business of most of the factory owners. Factories locked up capital for a longer time than did trade. Interest rates were high in India compared to Europe. Skilled managerial and technical labour was scarce in India. Why, then, did any large-scale industry emerge at all in India? How were these scarce resources obtained? A further question concerns the use of the company form in running factories.

A few people often connected by family and community ties established factories. Where capital and skills were scarce and accessible to a few people, we should expect such ties to persist. But management of companies with a network of family members created a problem of corporate governance, especially when public shareholding was involved. How was good governance achieved?

This chapter will show that the openness of the economy helped with access to knowhow and even capital. For example, profits from foreign trade created the purchasing power to buy machines. The use of trading profits and profits from financing trade confined entrepreneurship to the communities that engaged in trading and banking. India's links with Britain through trade and empire made it easy to hire foreigners to work these machines. India was also a major destination for British investment and industrial enterprise. Easy trading conditions made it unnecessary for Indians to produce machines, metals, and chemicals at home. So, the industry remained users of labour and natural resources. The five cities mentioned developed factories because these cities were transportation hubs, attracted migrants, had capital markets, and were sites of European

settlement. They were well-connected through the railways with the regions where natural resources were available.

The governance issue is a little more complex. It may be that Indian companies never found a good solution to the governance issue. In any case, business organization mattered to shareholder interest depending on whether the company was controlled by professionals or family members, whether the corporate form would be used or not, and whether the use of management contracts (managing agency) made a difference to the operation of the company. Further, these choices varied by ethnicity and type of enterprise. It is, therefore, difficult to generalize on the subject, but certain causal links can be shown.

This chapter describes this industrialization and answers questions like who set up these factories, who worked in them, and how corporate governance was achieved. The chapter starts with a chronological account.

INDUSTRIALIZATION

1858–1918

Large-scale industry started before 1858 (Chapter 2) in isolated enterprises and steadily expanded from the 1860s. The railways and the telegraph system started in India in the 1850s. In 1869, the Suez Canal greatly reduced the shipping distance between Britain and India. These developments encouraged new forms of industrial enterprise. The principal industries in this period were cotton spinning and weaving and jute spinning and weaving, the former mainly based in Bombay and Ahmedabad and the latter in Calcutta.

The capital came from trading profits and foreign investment. Bombay and Calcutta benefited from the growth of India's trade with China after the Company's monopoly in China trade ended (1834–5). The American civil war (1861–5) cut off supplies of American cotton to Britain's textile industry. Indian cotton was suddenly in great demand. Profits of cotton trade found its way to a cotton mill industry in western India. The companies that formed did not all survive, but they popularized the notion of joint-stock companies.

World War I diverted the resources of the Western nations into producing war supplies. Britain's engagement in the war had contradictory effects on India. The demand for cotton and jute textiles increased, but machines, metals, and chemicals imported by Indian industry from Britain and Germany stopped. By the third or fourth year of the war, conditions were easier and exporting factories were making big profits.

1918–45

So far, industrialization had occurred without protective tariffs. Lancashire textile interests put pressure upon the Indian government to keep import duty low. The government did impose a nominal duty but neutralized it with excise duty on Indian cloth in the 1890s. Modern businesses included not just big factories but also trading firms, banks, and insurance companies. Because the group was diverse and all of them had connections with the world economy, protection was not the preferred option for all.

The war changed the government's attitude. Until then, the purchase of industrial goods for defence, railways, or administrative use was dependent on Britain. This dependence had created sudden shortages of these goods in India during the war. Many administrators now started supporting policies to develop India industrially, seeing how Indian resources had helped the war effort. That stance led to three commissions of enquiry. The Indian Industrial Commission (1916–18) was a fact-finding survey. But the other two Fiscal Commission (1922) and Stores Purchase Committee (1920) changed policy. One of these committees recommended protection to selected industries of domestic origin and another recommended that the government buy manufactured articles for its use from Indian sources as far as possible. Tariffs helped the budget when older sources of revenue were failing.

The political climate was also changing. Those industries that had made profits during the War were more demanding. Demand for tariffs joined with a demand for self-government. The decline in the influence of British manufacturing interests upon colonial policy enabled resisting their demands.

Between 1923 and 1939, 51 enquiries were made on the suitability of demand for tariffs. In 11 of these cases, tariffs were raised. These included salt, heavy chemicals, magnesium chloride, sericulture, plywood chests, gold thread, iron and steel, cotton textiles, sugar, paper and paper pulp,

and matches. After that, more factories in sugar, iron and steel, cement, matches, paper, and woollen textiles came up, and the existing ones expanded.

The practical rule adopted for granting protection was called ‘discriminating’ protection, which meant that an application for protection needed to show that the applicant would be competitive shortly and not need protection after a few years. Nationalist historians have been critical of the discriminatory element in protectionism.

To be fair to the Tariff Board, which considered the applications, this body was worried about low labour productivity in Indian manufacturing, often due to poor effort at training and skill-building within India. In India, skilled labour was still scarce and frequently came from Britain, Germany, or the United States at a high cost. An Indianization of the supervisory staff did happen, but mainly in the cotton mills. Between the first origins of cotton mills in Bombay and 1925, the percentage of Europeans among the supervisory staff decreased from 100 per cent to less than 30. Other new industries (like steel) struggled to reduce its foreigner workforce.

By 1940, politicians, industrialists affiliated with the main political party, the Congress, and intellectuals campaigned for the removal of the discrimination clause. After that, protectionism became an entitlement for Indian capital and an instrument to serve the ‘national interest’. Discriminatory protection ended up becoming indiscriminate protection.

Much of the industrial growth encouraged by protection occurred in cities other than the original five. The dispersal owed to the fact that the resources utilized in this phase, sugarcane or wool, for example, were available in distant regions. Besides, the reach of the railways and electricity had extended into the interior. Labour in the so-called ‘up-country’ was not unionized. New factories came up in or near cities such as Coimbatore and Jamshedpur.

Within older industries, such as the cotton and jute mills, and the older cities of Calcutta and Bombay, the situation was becoming more difficult. Japanese mills were selling a lot of cotton textiles in India. In steel, worldwide capacity building progressed faster than new demand, which placed a new firm, Tata Iron and Steel Company, in trouble. In jute, Indian capacity grew faster than world demand. Tariffs alone could not solve this problem. Some of the industries had to make innovations in technology and management.

Between 1925 and 1935, the world was in mild or deep depression. In steel, paper, sugar, and cement, Indian industry faced cheap imports and falling world prices. The Indian nationalists argued that the rupee was overvalued deliberately to ease foreign remittance and that the step hurt exports. The Great Depression (1929–30) began in the middle of these difficulties. The Depression hurt the businesses that were mainly selling abroad, such as jute. Other key Indian industries affected by excess capacity in the world were saved by tariff protection in the 1920s. Another factor that helped industry was wage cuts. But wage cuts came with a cost. It soured capitallabour relations in the old cities. Renegotiating wage and working conditions was becoming difficult and strongly resisted by workers in Bombay and Calcutta.

During World War II again, excess demand developed and prices soared. Again, supply bottlenecks developed. But Indian industry in 1939 was more diversified and better equipped to diversify than in 1914. If not so bad for the industrialists, this war was a more stressful time for workers than was the previous war. In the winter of 1942, with the Japanese occupation of Burma, India became the eastern front of the war. Unlike in 1914, British India, especially Bengal, was now a theatre of war. Anticipating a long engagement, large-scale requisition of rice began. Combined with harvest failures, the situation led to a large rise in the price of food in eastern India. Meeting the needs of its workforce became a serious challenge for the plantations and industry.

STAGES OF INDUSTRIALIZATION

The crisis of 1991 was more sudden and severe than that which had struck India a decade earlier. The IMF was again ready to provide a substantial amount of credit to India, the more so as India had paid back the previous one within a few years. Usually the IMF insists on a programme of "structural adjustment" as part of its conditionalities. This is often resented by the recipients as it constrains their economic policies and affects their national sovereignty. In India, the new Finance Minister, Dr. Manmohan Singh, who had earlier served in international organizations, did not need to be told what had to be done. He devalued the currency, restricted government expenditure etc. on his own. In all this he had the full support of Prime Minister P.V. Narasimha Rao who trusted his judgement in economic and financial matters. As expected, the policy of structural adjustment initially slowed down industrial growth, but then Indian industry surged ahead once more; this time the private sector was in the vanguard. This was a very encouraging sign.

What happened to Indian industry in this crucial period can be shown by means of the general index of industrial production (1980/81= 100). The weights attached to different industries had been revised in 1980. Textiles had a greater weight earlier, they had been scaled down because other industries had forged ahead. Without this revision, the general index would have looked somewhat different as a comparison of the respective figures will show. In 1990 the general index stood at 212 and that for textiles at 126. The general index figures for 1991 and 1992 were 214 and 219 respectively. This indicated a stagnation under the immediate impact of the crisis. From 1993 (232) to 1996 (305) there was once again a steady increase. In the same period cotton textiles also improved their position from 160 to 191, but their growth remained very much behind that of industry in general.

If we turn from index figures to those for actual production, we notice a very encouraging growth in the field of fertilizers. where production increased from 9 to 11 mill. t thus reducing the need for imports, which remained at an average of 3 mill. t in those years. The output of crude oil was less encouraging, it stagnated at about 33 mill t throughout the 1990 s. This meant that imports had to be stepped up from 16 to 33 mill. to meet the demand of Indian industry for more energy. Coal production increased from 225 to 308 mill. t in the same period, but this was not enough to fill the gap.

THE RESTRUCTURING OF THE COTTON TEXTILE INDUSTRY IN THE 1990

The total production of cotton cloth increased from 15 bill. sq.metres to 20 bill. from 1990 to 1996. This increase was entirely due to the decentralized sector as the production of the mill sector stagnated at around 1.9 bill. sq.metres throughout. This meant that by 1996 the share of the mill sector in cotton cloth production had dwindled to less than 10 per cent. Whereas in 1951 there had been 280 composite textile mills in India producing 70 per cent of all cloth, by the 1990 s 100 of these mills had been closed and 80 were sick. (Garde 1995: 218) However, there was a significant restructuring of the mill sector particularly when the new industry engaged in manufacturing ready-made garments created a growing demand for high quality cotton cloth. Ready made garments contributed a great deal to increasing exports. Indian fashion designers and textile institutes were a great help in this development. But the production of the respective cloth was a problem. Only a limited number of mills rose to the occasion and invested in new textile machinery in order to meet this demand. Old shuttle looms were replaced by air jet shuttle-less looms etc.

Eleven big mills out of a total of 91 which were still in a healthy condition emerged as the leaders of the mill sector. They accounted for only 5 per cent of the weaving capacity, but had a share of 20 per cent in total production and more than 50 per cent of sales. In keeping with this they accounted for about one third of the profits. There was thus a new kind of stratification of the mill sector: 11 very profitable mills as against 80 which were just about viable. The profitable mills were also able to work with a better labour force which had emerged from the chaos of the big strike in a chastened mood and was more interested in productivity as this would secure higher wages. Most of the 11 leading mills were famous old ones located in Mumbai such as Bombay Dyeing or Standard, there was one each in Ahmedabad, Solapur and Banswara (Rajasthan) and two in Bengaluru. (Roy 1996: M 31-M 41)

The new demand for high quality cotton drove up the prices of raw cotton. From 1990 to 1996 India´s consumption of cotton had increased by 44 per cent. (Bremer Baumwollbörse 1998: 66) Moreover, bad harvests had doubled the world market prices of cotton from late 1993 to May 1995 when they reached about 115 US-cents/lb. Subsequently they declined to about 66 US-cents/lb in April 1998. (Bremer Baumwollbörse 1998: 60) The price rise had prompted Indian peasants in areas which were actually not quite suited for cotton cultivation to switch to this cashcrop. They had to buy seeds and dig wells, got heavily indebted and became highly vulnerable. In Andhra Pradesh several hundreds of peasants committed suicide in the late 1990 s when their crops failed and they could neither service their debts nor feed their families. This was the seamy side of the resurgence of the demand for cotton cloth. The story of the Andhra peasants was part of a massive thrust of an increase in cotton production in the mid-1990 s. From 1980 to 1996 raw cotton production just about doubled and reached 2.4 mill. t, but yield per acre had only increased by 60 per cent. Accordingly the area under cotton had to be expanded to 9 mill. ha. Most of this expansion happened in the mid-1990 s. From 1960 to 1993 the area under cotton had remained more or less at the same level of ca. 7.5 mill. ha. Due to the sudden price rise of cotton in 1994 the area then grew very suddenly. Many peasants who took up this type of cultivation were new to it. The foodgrain. which seems to have lost most ground to cotton was the humble jowar (millet). Peasants who relied on jowar for their food and had shifted to cotton were thus in a terrible bind.

The restructuring of the mill sector reflected the pattern of income distribution in the Indian economy. Inspite of a general increase of per capita income, per capita cloth consumption had

stagnated. Obviously the demand of the poor remained limited due to their purchasing power. They could only afford cheap cloth – mostly produced by the powerlooms – whereas the demand of the wealthier sections was circumscribed by their smaller number. Unless exports could be increased and/or the purchasing power of the poor substantially enhanced, the production of 11 mod ernised mills was obviously taking care of the needs of India´s better-off citizens.

MACHINE TOOLS AND STEEL IN THE 1990

The production of machine tools showed in general a positive trend. The total value of this production amounted in 1990 to 7.7 bill. Rs and 15.7 bill. in 1996. But from 1991 to 1994 this value had stagnated at an average of about 9.5 bill. Rs. This stagnation was obviously a reflection of "structural adjustment", which for some time dampened the demand for investment goods. A similar pattern was shown by the production of automobiles, which stood at 366,000 in 1990, receded to 335,000 in 1992 and then increased steadily to 783,000 in 1996. The further development of these important industries in the 21st century will be discussed later on.

The steel industry crept along its slow growth path as in earlier years although more capacities had been added. The Vizag plant had extended its capacity to 3 mill. t in the 1990 s but had then turned "sick" as mentioned earlier. Bhilai had been expanded to a total of 4 mill.t and in its new section it had introduced BOP-furnaces and continuous casting. Total production of steel ingots progressed from about 13 mill. t in 1990 to 16 mill. t in 1994 for all Indian steel mills. Their total rated capacity was higher, but capacity utilization was always somewhat deficient, whereas in other countries steel mills often resorted to "capacity stretching", i.e. producing more than their rated capacity. The Indian steel mills were beset with peculiar problems. Most of them had an ill assorted equipment of various ages supplied by many different firms. They also invested very little in R&D. In the 1990 s they spent less than 0.5 per cent of total sales in this way, whereas, for instance, in Korea the public sector firm POSCO stepped up its R&D expenditure from 1 to 2 per cent. (D´Costa 1999: M 2-M 16) The only positive development was the emergence of some private sector steel companies like Essar and Ispat, which produced high quality steel and even managed to export some of it.

The reform measures after 1991 had suddenly subjected the steel industry to some degree of international competition. It tried hard to cope with this, but as the new possibilities of using more

imported steel in India coincided with a period of recession in domestic demand, inventories were building up. The steel industry was faced with excess capacities and the inadequate use of installed capacities now appeared to be a blessing in disguise. But, of course, this was not a healthy situation. The attempts at exporting Indian steel were also not very successful due to oversupply in the world market. Moreover, countries, which are otherwise pledged to uphold free trade, resort to "anti-dumping" measures even if they cannot prove that the respective goods are offered below production costs. Under such conditions foreign companies were not exactly attracted to starting ventures for the production of steel in India. Nevertheless, a British company and a Korean one (POSCO) did show an interest in such ventures.

THE PHARMACEUTICAL AND PETROCHEMICAL INDUSTRIES

An industry, which experienced an almost explosive growth in the 1980 s and 1990 s, was the Indian pharmaceutical industry. Around 1975 there had been less than 1000 firms in this field. In the 1980 s there had been a considerable expansion so that by 1990 there were 15600 firms. But then within the short span of five years 7400 more were added to that number. Only about 7000 of the 23000 firms existing in 1995 had a turnover of more than 120 mill.Rs. As in so many other fields, small was also considered to be beautiful here. The government had exempted smaller units from excise and from the price control regime. This was an invitation to establish any number of small plants of sub-optimal size. They had a propensity to exit soon as they could not face the competition of the bigger players. But even big firms like Ranbaxy or Glaxo had only a 6 per cent share of a national market which was estimated at 80 bill. Rs. Foreign firms had a share of about 37 per cent of that market. Since Indian drug prices were in general higher than international prices, this industry did not have any export potential in the early years. (Madanmohan 1997: M 107-M 110) The enormous proliferation of manufacturers in this field had nevertheless the positive effect that there was a widespread acquisition of technological capability. A shake-out was bound to come, but keen competition would lead to a general improvement of the quality of that industry. In the meantime, however, even big companies indulged in practices such as producing several different brands of drugs for curing the same disease. Probably they counted on novelty as an argument in sales promotion. Swarms of medical representatives visited every nook and corner of India in order to convince doctors of the virtues of new brands of medicine. In this game novelty

was of some advantage. We shall return to this industry later on, which has in recent years attained a formidable size.

The Indian petrochemical industry advanced in a big way in the 1990 s. Ethylene cracker projects were the most important ones in this field, as ethylene is an intermediate product required for various types of fibres and plastics. The public sector IPCL had a capacity of 430,000 t in the mid-1990 s and was adding 400,000 t more to it at two different sites. NOCIL at Thane, Maharashtra, had a capacity of 75,000 t and was adding 320,000 t to it at the same site. Reliance was planning for 750,000 t at Hazira, Gujarat, and 300,000 t at the Assam Gas Cracker Complex. There were several other projects also. By now the argument that India was producing petrochemicals in plants of sub-optimal size behind high tariff walls did also no longer hold true. In the 1995 budget customs duties on major petrochemicals were substantially reduced. This trend continued.

Reliance Industries had staked its claim to leadership in this field in 1982 and had followed this up with massive investments in subsequent years. The crowning event was the commissioning of two giant plants at Jamnagar on the Westcoast of Kathiawar, Gujarat, in January 2000. Reliance had invested a total amount of 55 bill. Rs in these plants. One of them had the capacity to produce 1.4 mill. t paraxylene and the other 0.6 mill. t of polypropylene. Paraxylene is an intermediate product from which polyester (synthetic fibre) is derived. It belongs to the aromatics branch of products, whereas polypropylene belongs to the olefines branch and also enters the production of polyester. Having started with a polyester plant in 1982, Reliance had thus moved upstream. Investing in the production of paraxylene was a very important strategic move as a shortage in the supply of this essential intermediate product had affected the Indian petrochemical industry. Bombay Dyeing, another major textile firm, which had entered the field of petrochemical production, had concentrated on DMT, the intermediate stage between paraxylene and polyester, and had suffered from the shortage of paraxylene.

The idea of building up a major petrochemical industry in India had been given much encouragement by the exploration of the off-shore oil resources at "Bombay High" in the oil-rich continental shelf at the Westcoast of India in the early 1980 s. As we shall see when discussing the Indian oil industry, this had levelled off within a few years and India became once more dependent on massive oil imports. However, this is more important in the context of India´s energy household

than in that of the petrochemical industry, which consumes rather marginal amounts of petroleum. The energy household would be much improved with further advances in the use of solar energy. So far the cost of cells for the conversion of sunshine into energy has been a major barrier in this field. A breakthrough is expected here. Indian physicists should be in the vanguard of research in this field, and Indian industrialists should then take up the manufacture of the relevant equipment which would easily find a global market. The Central Electronic Ltd. (CEL), a public sector enterprise, is even now the fifth largest manufacturer of solar cells in the world and exports such cells to many countries. The Rajasthan Solar Energy and Electronics Ltd. (RASEL), a public sector enterprise established in 1993, manufactures solar cells for use in telecommunication and in electric pumps. About a quarter of the world´s solar electric pumps were operating in India´s villages in the 1990 s. (Pakrashi 1995: 260-262) A team of scientists in Kolkatta associated whith Bharat Heavy Electricals (BHEL) and the Indian Association for the Cultivation of Science had successfully developed a new silicon solar cell technology. This is based on the "amorphous silicon thin film" (a-Si) method, which was first discovered in the USA in 1976. The Indian team then began to work on this in 1978. In 1986 this project was made a special technology mission and in 1990 a pilot plant manufacturing a-Si cells was commissioned at the Solar Energy Centre, Gwalpahri, Haryana. (Barua 1995: 238-243) The sun lavishes its favours on India, and if solar energy could be produced at an economical rate, India would certainly experience a magnificent "take off".

THE DEFENCE INDUSTRY

A very important element of Indian industrial production, which is often omitted in general accounts of Indian industry, is the defence industry. It includes the ordnance factories and such public sector companies, which mainly produce equipment for army, navy and air force. There are altogether 39 ordnance factories employing a total of 170,000 workers. They produce ammunitions, guns of various sizes, tanks, trucks, army vehicles etc. The total value of their production amounted to 19 bill. Rs in 1993. Then there are several public sector shipbuilders producing various types of ships for the navy and for commercial freight carriers. Besides they do extensive repair work. India´s rocket systems are manufactured by Bharat Dynamics Ltd. (BDL). HAL which manufactures planes for the air force has been mentioned earlier. Last but not least, there is Mishra Dhatu Nigam (MIDHANI), which produces special steels and alloys for the defence forces. The

value of the production of some of these firms is also very substantial, e.g. HAL ca.10 bill. Rs in 1993, BDL 2 bill. Rs and for the three shipbuilders a total of 9 bill. Rs. (Banerjee 1995: 446-448)

A special feature of India's defence industry is the Integrated Missile System under the direction of Dr. Abdul Kalam (1931-2015) who later on became India's President His mentor was Dr. Vikram Sarabhai (1919-1971) who was the chairman of the Department of Atomic Energy but also the founder of ISRO (Indian Space Research Organization). Sarabhai was not in favour of building an atom bomb. He wanted to launch satellites for civilian use such a communication, remote sensing etc. He knew that in this he would have to depend on foreign cooperation and tried his best to distance space research from atomic energy and defence. A separate Department of Space was established in 1972, a year after his death. Dr. Kalam was his intellectual heir, but his career also showed the close links between the spheres, which Sarabhai wanted to keep at a distance from each other. He began his work as a young aeronautics engineer with DRDO in 1958, After working there for a few years, he joined ISRO and was sent to NASA (USA) in 1963 for advanced training. Back with ISRO he concentrated on satellite launching rockets. Sarabhai's successor, Prof. Satish Dhawan, also relied on Kalam for this work. He was very successful in this line, but then he returned to DRDO in 1982, where he was entrusted with the Integrated Guided Missliles Programme in 1983. It was called "integrated". because it encompassed a whole range of specialized missilies, which were produced simultaneously: Prithvi, a short range groundto-ground misssile (1000 kg, 350 km), Trishul, a short range maritime missile, Nag, an anti-tank missile, arwind, a medium range ground-to-air missile, and finally Agni I, an intercontinental ballistic missile (2500 km), which was first launched in 1989. Agni II, with double this range, followed ten years later. All these were indigenous products. The greatest challenge was finding the proper fuel. Liquid fuel was difficult to fill, but easy to ignite, solid fuel was easy to handle, but difficult to ignite. Kalam preferred solid fuel, but for Prithvi he had to accept liquid fuel, also for the other early missiles, only Agni II was completely powered by solid fuel. It was very similar to the rockets launching satellites, but those were heavy and stationary and had to give much thrust to the satellites to put them into orbit, The defence missiles had to be mobile and usually had no stationary launching pads, But the basic technology was similar. A director of ISRO told me after the successful launch of a satellite, that the thrust of its rocket could propell a ballistic missile over a range of 8000 km. Dr. Kalam was present at the tests of India's atom bombs in 1997, he attendend it incognito under the pseudonym "General Prithviraj". When he became President it was wrongly

stated in the press that he was the "Father of the Indian Atom Bomb". He had always been an aeronautics engineer, not a nuclear physicist. "Father of India's Rockets and Missiles" would have been a more acurate description. Being a modest man, he would never have made such a claim for himself.

THE INDIAN OIL INDUSTRY

A less favourable picture emerges when we look at the public sector oil industry. As stated earlier, the output of oil stagnated while the demand for energy was increasing very rapidly. The major reason for this was that this industry needed a major upgrading of its technology, such as horizontal drilling etc. The Indian public sector enterprises could not afford this technology, because they were hamstrung by the government´s pricing policy, which set the price for crude oil produced in India at about half the price prevailing abroad. Similarly at the intermediate level, the government dictated the price to refineries by means of a "cost plus" formula. Finally, further downstream the government indulged in subsidising kerosene consumed by the masses. This it could afford to do only because it depressed prices upstream. (Kelkar 1996: 30) Within such a system it was practically impossible to attract foreign investment, which was urgently needed in view of the technological deficiencies, which threatened to reduce the share of Indian oil in the rapidly expanding energy market even further.

Unfortunately India has not only failed in investing more in the expansion of its oil industry, there have also been instances of misusing the existing capacities. The flogging or beating of wells is a method of extracting a maximum of oil regardless of the resulting damages. "Bombay High" has been a scene of such malpractices and many wells had to be closed, because they had been damaged beyond repair. Only in the end of the 1990 s a rectification programme had been introduced so as to prevent a further shortfall of oil production. (Parikh 1999: 130)

Another problem, which plagues the Indian oil industry, is the inadequate infrastructure. Oil is mostly shipped by rail in India, which is ten times as expensive as the transport via pipelines. Around 2000 India had only crude oil pipelines of about 3000 km, and pipelines for oil products of ca. 4200 km. (Parikh 1999: 131) This network had to be urgently extended.

MAJOR INDUSTRIES

Cotton Mills

The first steam-powered factory making cotton yarn appeared near Calcutta in 1817 or 1818. This venture, like a few others in western and southern India, was set up by a European. But these firms did not succeed. In 1854, a Parsi merchant of Bombay, C.N. Davar, started the first successful cotton mill. The idea attracted other merchants of the city. Many of them were already engaged in cotton and textile trade. By 1865, there were 10 mills, the majority in Bombay. In the next few years, a boom and a crash shook up cotton export from western India. When the dust settled, a furious expansion of the mill industry began. By 1880, there were 58 mills with an employment of 40,000. Nearly 80 per cent of the workers were in Bombay and Ahmedabad. By 1914, the number of mills had risen to 271 and average daily employment to 260,000. The share of the two cities in employment fell to 60 per cent. Any small town that had a cotton market, a railway connection, a pool of migrant labour, and a handloom industry became an attractive location for a spinning mill. Using these strengths, Kanpur, Madurai, Coimbatore, Sholapur, Nagpur, and a cluster of cotton trading towns in the Deccan developed cotton mills.

Between 1870 and 1914, cotton mills were mainly selling yarn to handloom weavers in India and China. In both these markets, they successfully competed with British yarn in the coarser varieties. But they found it difficult to compete in the finer varieties. Later in this period, mills in Japan took over the China market. The loss of the China market and keener competition at home forced the mills of Bombay to make changes in the interwar period. They started weaving their yarn more than before and to spin and weave finer yarn. They tried to improve efficiency at the workplace and save on labour. For some mills that were already poorly managed, these changes were too little and came too late. The interwar period saw unemployment, strikes, demand for protective tariffs, intensification of nationalist sentiments among mill owners, and the beginning of bankruptcy in many of Bombay's cotton mills.

Jute Mills

Jute is a natural fibre grown mainly in southern West Bengal and Bangladesh. Jute is an excellent material for sacking cloth. The demand for sacks increased in the nineteenth century with growth in international commodity trade. Until the 1870s, Bengal raw jute was processed into

sacking outside India, mainly in Dundee in Britain and somewhat later in Germany. But already by then, mechanized jute spinning and weaving had started near Calcutta. George Acland's mill of 1855 was the pioneer. In a short time, the Indian industry grew to become a virtual monopoly in the world. As in the cotton mills, the first 15 years of the industry faced unstable conditions. After 1870, expansion was rapid. Between 1869 and 1913, the number of mills increased from 5 to 64, and employment between 5,000 and 10,000 in 1869 to 215,000. Until World War I, Europeans owned and managed the industry.

The industry ran into rough weather in the interwar period. The world demand for sacking slowed down. The European owners and managers tried to form a cartel to cut production and raise prices. But now there were Indian jute mill owners who had earned a lot of money during World War I and recycled some of it into industry. They were out of the cartel. Therefore, collusion broke down. 3 Old firms failed to cooperate. The result was excess production, unstable profits, and increased competition. Eventually, the failure of the jute cartel invited the government of Bengal to impose production limits. But, as in Bombay, a large part of the industry was doomed already for having delayed technical improvements.

IRON AND STEEL INDUSTRY

IN THE WORLD OF TODAY the relative degree of economic advancement in any country is measured in terms of per capita consumption of steel. That is so because all other industries have to depend on steel out of which any machinery, big or small, is manufactured. Hence, for laying down a stable base of industrialization a steel industry of required dimensions is indispensable.

Scanning the Indian scene, we come across rather a distorted picture of economic development. Industrialization as a whole made a late start. Machine building and capital goods industries did not make their appearance for a considerable length of time. And, whatever impetus the indigenous industry received was from a most unnatural and unexpected quarter-the two world wars. This can perhaps be understood only in the context of the pace of industrialization in England-the metropolitan country-and the constant quest for markets that it entailed.

The political and economic set up, that this country had under the British regime, did not, for a long time, provide a congenial climate for the establishment of such basic industries as iron and steel.

Against this background the march of iron and steel industry in India was bound to be chequered. We might have been suppliers of steel for the famous Damascus and Woodze Swords but in less remote times our history is rather modest. Although certain abortive attempts were made in the second half of the eighteenth and the first half of the nineteenth century, the first successful commercial attempt at producing Iron dates back to 1875 when an iron and steel works came to be established at Barakar by the Bengal Iron and Steel Co. Subsequently, the company was reorganized in 1919 as the Bengal Iron Company. They were the first to produce pig iron in India on modern lines.

But the credit for the production of steel in India goes to the pioneering spirit, enterprise and foresight of the late Jam-shetji Tata, whose career forms a true example of industrial romance. He can aptly be called the father of Indian steel industry. Jamshetji, with the help of American and European experts, set about surveying in Bengal and Bihar with the object of establishing Iron and Steel works on a large scale, utilizing the latest scientific methods. His dreams took shape in 1907 when the Tata Iron and Steel Co was founded with Indian capital at Sakchi in Bihar, subsequently renamed Jamshedpur. Jamshetji had, however, died in 1903. The project was implemented in various stages and in 1911 pig iron rolled out of the works. Steel ingots were produced a year later. The company was started with a capital of nearly Rs. 232 lakhs, two 200-ton blast furnaces, four 40-ton open hearth furnaces and one hundred and eighty copper coke ovens. By the time the First World War started, the company was placed on stable footings and during the period of hostilities Tata Iron and Steel Co supplied the Government with 1,500 miles of rails and nearly 300,000 tons of steel material which played an important part in the allied victories in Mesopotamia. Soon after the War, the company embarked upon extension programs and they were completed in various stages, viz. in 1929, 1933 and by 1935 the output of finished steel had risen to 600,000 tons a year. By the beginning of the Second World War, the Works had a production capacity of a little under 800,000 tons of salable steel.

Another landmark in the history of iron and steel in India was the setting up of the Indian Iron and Steel Co. Ltd. which was established near Barakar in 1918. The Steel Corporation of Bengal Ltd. was constituted in 1937 in association with the Indian Iron and Steel Co for the manufacture of steel. Subsequently, in 1953, on the recommendations of the Tariff Commission, which had examined the cost structure of these two companies, they were amalgamated.

The Indian Iron and Steel Company started with an authorized capital of Rs. 3 crores. Subsequently in 1925 the capital was reduced to Rs. 1.5 crores by writing down the nominal value of each share from Rs. 100 to Rs. 50. Through the same process the capital was further reduced to Rs. 1.08 crores. Later on, however, it was again increased to Rs. 5 crores by the creation of 39,19,880 ordinary shares of Rs. 10 each. As on 31st March 1942, the issued and subscribed capital of the Company stood at Rs. 2.55 crores. In 1951, the authorized capital was further augmented and at the time of amalgamation with Steel Corporation of Bengal, it aggregated to Rs. 7.50 crores. The Steel Corporation of Bengal which, as has been said earlier, came to be amalgamated with the SCO, started its career in 1937 with an authorized capital of Rs. 10 crores and an issued capital of Rs. 4.49 crores.

With the merger of the IISCO and the SCOB in January 1953, which was brought about through an ordinance known as the "Iron and Steel Companies Amalgamation Ordinance", 1952, the capital structures of the two units were recast to meet the requirements of the new situation. The combined authorized capital of the new unit was placed at Rs. 8.50 crores and the issued and subscribed capital at Rs. 7.88 crores. Thus, although the authorized capital of the new unit was less than the combined authorized capital of the merging units, the issued and subscribed capital slightly exceeded the combined issued and subscribed capital of the two units prior to merger.

After amalgamation in 1953, the company realizing the extent and scope of growing requirements of iron and steel products in the country and to attain the economics of large scale production launched a phased program of expansion. To meet the financial task, 51,83,708 ordinary shares valued at Rs. 10 each were issued. On 31 March 1957, the company's authorized capital stood at Rs. 14 crores as against the subscribed capital of Rs. 8.50 crores. This accretion was obviously necessitated by the growing requirements of finance over and above what could be made available from the company's own accumulated reserve funds and other sources.

In 1921, the State Government of Mysore started an iron works at Bhadrawati which came to be known as Mysore Iron and Steel Works. The Company's present annual capacity is 25,000 tons of finished steel. It also produces around 16,000 tons of ferro silicon essential for the manufacture of good quality steel. Between 1912 when the Tata Iron and Steel was set up and by 1939, the production of steel made steady progress as is evident from the following figures of production:

In 1939, the war intervened. This turned out to be a boon in disguise for the industries in general and iron and steel in particular on which the demands made by the arms and ammunition requirements of the government made heavy inroads. Further, the capacity of the British industry to meet our requirements was severely curtailed. Under the circumstances, the industry forged ahead. The production which was 8.43 lakh tons in 1939, shot up to 11.5 in 1943.

In the final analysis, it would appear that the progress of iron and steel industry owes much to the two wars which rocked the world in the first half of the 20th century, because wars meant the general and urgent demand for the products of this industry and to meet the demands, new small plants were laid, new processes were evolved, new lines of production were started and new technical skills built up. The major units in the industry had to work under severe strain.

With the culmination of war, however, the steel production declined because of the intensive use of the plant and machinery during the war period and the consequent early obsolescence caused to equipments. Dearth of financial resources with the companies resulted in heavy backlogs in replacements and modernization. By 1949, production had touched the low figure of 9.76 lakh tons although in subsequent years it showed slight increases. The production is around 18 lakh tons at the moment.

THE HISTORY OF PROTECTION

During the First World War, the industry had gotten into excellent shape. The Tata Iron and Steel Co were alone in the market and held almost a monopolistic position by 1916-17. The original Tata plant at Jamshedpur was in full production and there were talks of greater extensions. Even in 1922, the outlook appeared so favorable that plans were laid for the establishment of four more steel producing units in India and the industry was quoted as an outstanding example of industrialization and successful Indian enterprise. Moreover, the imposition of duties of 10 percent to 15 percent on imported iron and steel goods, according to the description in 1922, offered some amount of protection to the domestic products.

But the wheels of fortune turned full circle in 1921-22. The prices of steel imports fell abruptly to a level far below the cost of production in India. In 1923, imported steel fetched only 20-25 percent more than in 1914, although the general level of prices had risen by 60 percent. At this time, the Government came out with what has been generally described as "discriminating

protection". Tatas preferred a claim to the Tariff Board for a duty of 331/3 per cent on all products of imported iron and steel. The Board recommended that the existing duties of 15 per cent ad valorem on imported steel and 10 per cent on steel rails and some other specified articles should be doubled or more than doubled. The basis of the recommendation was the estimate that whereas an average price of Rs. 180 per ton was necessary to enable the industry to cover costs and provide a fair manufacturer's profit, steel was likely to be imported at an average price, apart from duties of about Rs. 140 person. According to the Board's recommendations, the Steel Industry Protection Act, 1924 was passed imposing protective duties of various rates and kinds and, some specific and some ad valorem, on a large number of products. In addition, bounties were granted on the production of steel rails, fish plates and railway wagons.

The inability of indigenous industry to compete with imports at this period was partly due to increased cost of production and partly to the exceptionally low priced imports occasioned by the steel slump surging in Europe. In the summer of 1924 another adverse circumstance intervened. The sterling value of the rupee was increased from 1s. 4d. to Is. 6d., thus upsetting the calculations made by the Tariff Board. The industry again approached the British Government for increased protection but the Government thought a bounty on production plus the existing duties would be more appropriate. Hence, a bounty was granted at Rs. 20 per ton of finished steel on not more than 70 percent of the monthly ingot of steel production payable up to September 1925.

In 1925, the Tariff Board recommended renewal of bounty though at a reduced rate of Rs. 18 per ton till 1927 but the actual bounty granted by Government was only Rs. 12 per ton with a maximum liability of Rs. 60 lakhs. The question again came before the Tariff Board in 1927 and the proposals of the Board for a modified form of protection to remain in force for 7 years were accepted with minor changes by the legislature and passed into law in 1927. According to this Act, basic Duties varying with the precise nature of goods were imposed on imported steel for a period of 7 years. The basic duties were in almost all cases lower than the duties in force between 1924 and 1927. But in many cases, the additional duty on non-British steel brought up the total for continental steel to a higher level than before. At the same time, the duty on the imported tin plate was reduced from Rs. 85 to Rs. 48 per ton. Thus the steel industry was assured of some assistance for some time and the principle of preference to British goods was introduced. In 1934, after the expiry of the stipulated seven years' period, the protection was renewed. In the final analysis it can be said that the policy

of the so called "Discriminating Protection", evolved in 1923, though not an unmixed blessing, helped in promoting the progress of the industry. The two world wars gave the necessary confidence to forge ahead. It would appear that without this additional productive capacity, irrespective of the manner of its achievement, India might have been still more severely handicapped.

The scheme of protection sanctioned as a result of the Tariff Inquiry held in 1934, was to remain in force for seven years until March 31 1941. But before the expiry of this protection, the Second World War intervened and the protective duties on import of steel were continued from time to time by Continuation Acts, the last extension being for a period of one year till March 31, 1947. In fact, on the break of war, the Government froze steel prices at the level prevailing on October 1 1939 subject only to actual increase in costs.

After the war, the government did not decontrol steel prices but in place of the pre-war system of protective duties adopted a system of statutory fixing of prices from time to time after inquiry by the Tariff Board (now the Tariff Commission). The basis adopted for fixing prices was to allow fair manufacturing costs plus depreciation and other facilities, plus a return at the rate of 8 percent on the gross block. The scheme of protection to the Iron and Steel industry was discontinued from April 1 1947 as it had become superfluous. However, the quantum of protective duties continues as a revenue duties.

The principle of tariff protection particularly the way in which it was granted in India has come to considerable criticism in the hands of economists and others. It is perhaps legitimately argued that in evolving the principle of protection, its cost to the community or society at large was not given the amount of consideration that it deserved. Fortunately, however, the iron and steel industry no longer stands in need of any protection any more. Any difficulties in future, may come from deliberate dumping by foreign countries though in the immediate future such possibilities need not be condemned. In its Statement on Industrial Policy, the Government of India has declared that "the Tariff Policy of the Government will be designed to prevent unfair competition and promote the utilization of India's resources without imposing unjustifiable burden on the consumer".

PRODUCTION DURING THE SECOND WAR

During the Second World War, production rose from 842,905 tons in 1939 to 1,149,308 tons in 1943. The production levels were kept high during the war not as a result of additions to plants and equipments, but by over-utilization of existing capacity. In this connection it may be noted that the rather unnatural conditions created by war gave a temporary fillip to the industry, but at the same time, soon after the war it faced temporary crisis due to the wear and tear caused by the strain of over production.

Between 1945- 47, no spectacular developments took place in the steel industry. When the government faced the problem of resorting to large imports at high prices to fill the gap in supply of low priced domestic steel, the Tariff Board was asked to inquire into the steel industry. The Board submitted its report recommending a retention price scheme for steel produced in India. As regards expansions of steel capacity in 1945 a panel was appointed to inquire into steel requirements of the country. Apart from these no major steps were taken during this period in the direction of creating additional steel capacity in the country.

EXPANSION DURING THE POST-WAR PERIOD

With the Independence of the country in 1947, it was inevitably expected that the policy of the Government of India would be reoriented towards the development of a self-generating economy with a prominent place for an industry like iron and steel. The per capita production and consumption of steel is the index of the depth of a country's economic "infra-structure". Against a mere 22 lbs. per-capita consumption of steel in India during 1958-59, it is 317 lbs. in the United Kingdom, 842 lbs. in the USA and 468 lbs. in the USSR. In the total production of steel also India is far behind even China, let alone the advanced countries like the US or West Germany. The figures of production of steel in various countries in terms of ingot steel are given below:

In this context the policy of the government towards the development of this industry was clearly defined from the very beginning. The Industrial Policy Resolution promulgated in 1948 categorized the steel industry in the list of basic and strategic industries and the responsibility for its future development was vested with the State. The same policy was further reiterated through the Industrial Policy Resolution of April 1956. Under these two Resolutions, it was laid down that those units which were already in private sector were not to be taken over with the stipulation that a

final decision on the issue would be based upon the operational results of the units obtained after few years.

In 1947, the steel industry consisted of four units, viz. the Tata Iron and Steel Co, the Indian Iron and Steel Co, the Steel Corporation of Bengal and the Bhadravati plant. The Bhadravati plant was a State-owned unit, while all others were in the private sector. The total capacity of all units together was of the order of about 1.2 million tons. During war time, most of the units had to work under severe strain and the immediate post-war years presented a picture of immature obsolescence of the plants and equipment. The backlog in replacement and modernization of equipment was very soon reflected in the low output which, in 1949, touched 9.76 lakh tons. Improvements were, however, visible from that year onwards mainly because minor renovations were gradually effected in the major units. Between 1945 and the beginning of the Second Five-Year Plan, a series of plans were worked out and proposals made for the setting up of new steel plants. In 1945 the Government set up a Panel to prepare a plan for the development of this industry. On the basis of the Panel's recommendations, decisions were taken to set up two steel plants each with a capacity of 5 lakh tons of steel. Two foreign engineering concerns were appointed as consultants and their report was ready in 1949. According to the estimates presented by the consultants, the cost of construction of steel plants of 10 lakh tons ingot capacity was placed at Rs. 90 crores. The Government had, however, to drop these proposals due primarily to lack of sufficient resources. Looking back, the decision of the Government to drop the proposals now appears to be rather unfortunate especially since bulk of our steel requirements had to be met from imports and this recurring item of expenditure alone resulted in heavy drafts on our foreign exchange resources.

Further thought was given to the question of steel industry expansion only after four or five years. Had the construction of new steel plants been taken in hand during the period between 1948 and 1950, at the beginning of the Second Plan, India would have attained self-sufficiency in steel. The delay in the setting up of new steel plants resulted in heavy import of steel during the first four years of the Second Plan. The following are the figures of imports of steel during the Second Plan period.

Again, the cost of construction of a 10-lakh ton steel plant, estimated by the consultants in 1949, was only Rs. 90 crores as against Rs. 150 to 180 crores on every new steel plant, thus

inflating the cost to a considerable extent. All these factors have adversely affected the pace of industrial expansion in the country in the following manner:

(1) As the costs of imported equipments for steel plant construction have gone up considerably, the country has to spend more foreign exchange on this item alone.

(2) The general problem of foreign exchange faced by the country ever since the beginning of the Second Plan resulted in curtailment of steel imports also. Consequently more steel consuming industries had to work very much below their installed capacity.

(3) The expansion of industries like machine building, and of social overheads like Railways got delayed owing to the paucity of steel supply.

(a) Monthly Statistics of Foreign Trade of India and

(b) Monthly Abstract of Statistics

At the suggestion of the World Bank, a Technical Mission was appointed in 1952 to examine the question of additional demand for steel. The Mission had estimated that by 1958 the deficit in supply would be of the order of 400,0000 to 500,000 tons of finished steel. But the estimate had to be revised upwards within two years. This had to be done because of the pace of expansion of steel consuming industries during the First The plan was much more than expected.

In 1953 the Government of India started negotiating with the German firm of Krupp & Demag for the construction of a steel plant in the public sector. An agreement with the German combine was arrived at for the construction of a 5-lakh ton steel plant at a cost of Rs. 80 crores. Before proceeding with this plan, the Government instituted another survey into the demand position of steel and it was estimated that even after allowing for expansion of steel plants in the private sector, there would remain a gap in demand to the extent of 30 lakh tons. of ingot steel. Accordingly it was decided that the Indo-German unit to be located at Rourkela should have a capacity of 10 lakh tons of ingots.

Subsequently the government decided to set up two more steel plants in the public sector. An agreement with the Government of the USSR was reached in 1955 for the establishment of a steel plant with a capacity of 10-lakh tons of ingot steel at Bhilai. In 1956, a third steel plant was to

be put up at Durgapur in collaboration with a consortium of British steel producers, viz. the Indian Steel Construction Company Ltd (ISCON London). While the Government were proceeding with the preliminaries for the establishment of steel plants in the public sector, the Birla Brothers put up a proposal for setting up a steel plant with a capacity of 10 lakh tons of ingot steel at a cost of Rs. 100 crores. The Government turned down this proposal in accordance with the Industrial Policy Resolution.

From 1950-51 onwards, steel expansion plans were worked out in the private sector as well. The First Five-Year Plan included a program of expansion and modernization of the Indian Iron and Steel Company. The program was to increase the capacity in this unit from 6.40 lakh tons in 1953 to 1.4 million tons in 1957 for iron and from 3.5 lakh tons to 7 lakh tons for finished steel. The Second Five-Year Plan envisaged further Expansion from 7 lakh tons to 8 lakh tons of finished steel in this unit. IISCO has already completed its expansion schemes.

The Tata Iron and Steel Company undertook a program of expansion and modernization in 1951 with a view to increasing the capacity to 9.3 lakh tons of salable steel products. Another program of expansion of the TISCO related to further addition to their plant for a capacity of 2 million tons of ingots and 1.5 million tons of finished and semi-finished steel. The new blast furnace marking the final phase of TISCO's program was commissioned in October 1958.

The Bhadravati Iron and Steel Works, owned by the Mysore Government, initiated expansion schemes to increase their capacity to 1 lakh tons of finished steel during the First Plan period. The Bhadravati plant now concentrates on the production of high priced steel rather than on mild steel products. Projects costing Rs. 3.70 crores were completed during the First Plan period itself; two electric pig iron furnaces, a cast iron spun pipe plant, etc. were commissioned by the end of the same period. The Second Plan envisages investment to the tune of Rs. 5.95 crores which includes the setting up of a spun pipe plant, a sintering plant, a ferro-silicon plant and expansion of steel melting and steel rolling plants.

All the three new units have started production. The first blast furnaces at Bhilai and Rourkela were commissioned early in February 1959. Later in the year two more blast furnaces were commissioned in the Bhilai plant, and in January 1960 the phase of construction of the Rourkela plant was completed. In December 1959 the Durgapur plant's first blast furnace was

commissioned. All the three plants have now started producing pig iron. If the schemes progress according to schedule, the total ingot capacity of steel available from all the units in the country would be of the order of 6 million tons. In the Rourkela plant some initial constructional defects were discovered which disturbed its production program. Subsequently, the defects have been rectified.

INVESTMENTS IN STEEL PROJECTS

The total investment originally contemplated in the public sector for steel under the Second Plan was Rs. 353 crores. A portion of the total investment is to be carried over to the next plan period as the public sector plants are to start full production not earlier than 1962. The original investments in respect of all the three public sector projects had to be revised upwards as a result of increase in construction costs and costs of machinery. The rise in costs was explained partly due to increase in the level of prices, but it was due to unsatisfactory estimation, planning, etc. The creeping inflation of equipment prices in foreign countries pushed the foreign exchange component up by Rs. 64 crores from Rs. 228 crores to Rs. 292 crores. The estimates of investments are as under:

The revised cost estimates cannot, however, be considered exorbitant in view of the savings in foreign exchange that will be effected during the next plan period. As a result of the new steel plants and expansion of existing units, the country would be able to save foreign exchange to the tune of approximately Rs. 750 crores during the Third Five-Year Plan. However, it is generally admitted that the rigorous standards of economy were over-looked in certain cases.

As already mentioned, the existing steel plants were not able to proceed with their renovation programs in the immediate post-war period mainly due to the dearth of financial resources. The TISCO commenced their 2 million tons expansion project in 1955 and entered into a $ 130 million agreement with Kaiser Engineers of the USA. The Government also guaranteed 2 loans of $75 million and 32.5 million each from the World Bank. The Company also received a special advance of Rs. 10 crores from the Price Equalization Fund operated by the Government. The 2 million expansion project embraces every aspect of steel production from the extraction and processing of ore to the rolling of finished steel at a cost of Rs. 118 crores including ancillary schemes. Apart from the special advance from the Equalization Fund and the World Bank Loans, the Company

raised Equity capital to the tune of Rs. 13.5 crores. In addition, a development fund was also created through a special element included in the retention price of steel for assisting the units in the private sector.

Finances for the expansion projects of the IISCO were made imported steel. In 1939 when the Tarift Board undertook an inquiry for protection of the Indian steel industry the producers had represented that they were able to produce steel at very much below the C.I.F. prices of imported steel. The wide difference between the cost of production of indigenous steel and imported steel, as a matter of fact, led to the question as to who should benefit from it, viz. the society, consumers or the producers. Ultimately it was decided by the Tariff Board that the producers were to receive a retention price for the steel produced by them although the same was to be sold at the prices equated to the cost of imported steel. Under this price scheme the surplus over the retention prices accrued to a Price Equalization Fund instituted by the Government.

The retention prices payable to the producers are subject to periodic review by the Tariff Commission. Although the current price scheme is based upon the Tariff Commission's Report (1956), under the escalator clause provided therein, the producers are allowed the benefit of periodical adjustments in the retention prices according to changes in cost factors such as statutory increases in freight rates, wages, etc. and raw material prices, costs of power and fuel enumerated in the clause.

The present structure of steel prices and the methods followed in estimating the steel retention prices suffer from certain drawbacks. The main deficiency attributed to the price scheme decided by the Tariff Commission and its predecessor is that it has hardly taken into account the overall resource needs of the industry. It had been pointed out that the Tariff Board had adopted a more realistic approach towards the problem of the industry. It had been pointed out that had the Tariff Board adopted a more realistic approach towards the problem of returns available to the industry on capital employed and related aspects the existing units would have carried out renovations of the war torn equipments and necessary extensions as far back as 1950-51 when the country was importing large quantities of steel at very high prices from abroad. Under the price policy adopted during the post-war period the industry was allowed a return of only 8 percent on gross block. Reviewing this price policy, producers pointed out that after meeting the tax bill,

paying managing agency commission and profit sharing bonus to employees, it left a mere 3% per cent for payment of dividends to shareholders, and almost nothing to be plowed back.

Again, depreciation was allowed at 64 percent, more or less in accordance with that allowed for income tax purposes; but on the other hand, replacement costs increased by about 150 percent over the pre-war levels and this made the depreciation fund miserably inadequate for the job. It is also pointed out that as a result of the rather restrictive price policy for steel, the assets in the shape of plant and machinery increased by only 30 per cent between 1946-51, as against 71 per cent for all industries, 103 percent for cement and 170 percent for engineering.

The question of the Price Equalization Fund has also been subject to some amount of criticism. The Government decided to create and operate this Fund because it was considered that a uniform price fixed at the level of costs of imported steel would create a surplus which otherwise would go to swell the resources of the producers. For a long time, the cost of imported steel was double the cost of production of indigenous steel and the country is estimated to have benefited to the extent of Rs. 27 crores out of this difference. However, nobody wants a total abolition of the Equalization Fund, but only that it should be discontinued gradually with the tapering off of imports. Moreover, a higher retention price means a small share to the producers in the differential that might accrue to the Equalization Fund. This demand is not unjustifiable, for in the first instance, it can only be a reward and an incentive for efficiency and secondly, it would have been of help for the industry to create some surplus for expansion at a time when it was badly needed. The very fact that for rupee resources the two units, viz. TISCO and IISCO, had to rely on special interest bearing advances from the Equalization Fund indicating that they were not able to meet their financial requirements from other sources to the full extent of their needs. Of course, a portion of the resources were met out of fresh equity capital, but they could not attract more funds from the potential investors mainly because of the low percentage of dividends that they were offering in the past so many years. It may well be imagined as to how far it will be possible for an industry to attract share capital especially when it could not offer anything more than 4 per cent against the larger returns of 7 per cent and 8 per cent available on investments in other industries.

Although India is one of the cheapest producers of steel in the world, the price to the consumer is unduly high on account of the equalization surcharge of Rs. 110 per ton in addition to an excise duty of about Rs. 53 per ton. The average retention price of steel fixed by the Tariff

Commission in 1955 was Rs. 393 per ton and subsequently, as a result of revision, under the provisions of the escalator clause in 1959, the retention price was fixed at Rs. 424 per ton, a rise of Rs. 31 per ton. The present controlled prices exceed the retention price to the extent of the equalization levy and the excise duty. The present controlled prices of certain categories of steel are higher than even the landed duty paid cost of imports from Japan or Belgium. For instance, bars and rods are being sold at Rs. 118 below the Indian price in the U.K., Rs. 105 in Australia, Rs. 152 in Belgium and Rs. 111 in Japan. The high prices of steel are naturally reflected in the cost structure of engineering industries which form the bulk of steel consuming industries. The engineering industries in general have to play a much greater role in the future in our export trade.

Many of these industries are growing at a fast rate. But the *markets for such goods are precariously sluggish due to the low per capita income levels. Thus to serve both the domestic and the export markets, the products of engineering industries must be cheaper. Unless the prices of basic raw materials like steel are brought down considerably, the engineering industries will find it difficult to lower their costs of production. Thus a case exists for bringing down the selling price of steel. The need for capital recoupment and capital building to meet its task the industry might need more funds, preferably out of its own resources.

Only the existing steel plants had so far to bear the brunt of a rather tight line price policy. But, according to current indications, the new units will also have to face the same problems to a much larger extent. The construction costs of these plants have gone up disproportionately as compared to the original estimates. The problems of interest payments and servicing of loan obligations in future as well as expansion schemes that might be initiated will make it necessary to build up large resources. It is learned that in future the same price policy will be applicable to both the old as well as the new units. A fresh review into the cost of production of steel is due this year (1960) and it is hoped that the Tariff Commission might give sufficient thought is noped that the 1 ariff Commission might give sufficient thougnt to the various aspects of the pricing problem.

PROBLEMS AND PROSPECTS

The steel expansion program presents a formidable set of problems. Unless sufficient attention is paid to solve these, expansion is bound to suffer. As already noted elsewhere, sufficient

attention has not been paid to build up raw material base. Although sources of good quality coking coal adequate enough to meet the entire requirements of the steel industry have been located, three out of five projected coal washeries are unlikely to be completed in the near future. Since the usual period of time taken for the construction of a coal washery is about three years, it is possible that in the meantime shortage of washed coal may hamper steel production well into the Third Plan.

Proper transport facilities have not yet been developed and this might create difficulties when production expands. For instance, work on the electrification of the rail links to the ore mines from which Jamshedpur, Burnpur and Durgapur obtain supplies are a year behind schedule. Similarly, the rail link connecting Rourkela with ore mines is not ready. In a sense, these are difficulties of a temporary nature; but unless immediate solutions are found to such problems these are bound to affect production in one way or another. In advanced countries, economy in steel production is effected to a very large extent mainly out of the cheap and convenient transport facilities, linking the producing centers with markets and sources of raw materials. It is estimated that the creation of further 4 million tons of capacity for steel would call for the movement of 24 million tons of freight traffic, taking both raw materials and finished products together. This means that by the end of the Third Plan period, we must have facilities for carrying as much freight, if transport bottle-necks have to be avoided in toto. During the Second Plan period we have been facing shortage of wagons and line capacity which is likely to continue unless rail extension programs are accelerated.

An allied problem faced by the steel industry is related to power shortage especially in the Bihar-West Bengal area, the nerve center of industrial activity in the country. Both in respect of power as well as transport, the cost factor is equally important. A small difference in the unit cost of power and the carriage per ton of raw materials will have a cumulative effect on the cost of production of the final product. Any plan for steel expansion should therefore take into account these factors as well.

Apart form coal, the steel industry requires many other raw materials such as ferromanganese, refractories etc. In recent years, capacity for ferromanganese has been developed in the country and it is estimated that if all the licensed schemes materialise, the total capacity would be about 160,000 tons at the beginning of the Third Plan. Already five units with total installed capacity of 85,000 tons have gone into production. As regards refractories, demand is

expected to increase to 400,000 tons per annum when all the steel plants come into full production as against the current production of 200,000 tons. At present the annual import of refractories is very large as the new steel plants require for their construction some 550,000 tons of refractory bricks. Schemes are afoot for setting up a basic refractories plant in the country.

Coming to the problem of coking coal supply position, the present output of 3.5 million tons will have to be increased to some 11.2 million tons by the time the steel plants start full production. As regards other items of raw materials like fluorspar, chromite and wolfram, India is still far from being self-sufficient.

The difficulties that the industry is facing are more or less temporary and most of them are not insurmountable. On the other hand, with most of the resources available in plenty and in close proximity, India can hope to attain the foremost position among the great producers of steel in the world before long. The possibilities of development of North-East India as a steel producing center are so great that some one recently remarked, "Here an Indian Ruhr is in its making". Projections regarding demand for steel towards the end of the Third Plan have been worked out in many quarters, although no official decision on targets have been arrived as yet. However, there is a need for a realistic approach towards such projections. As some persons believe, it is impossible to conceive of a demand of the order of 15 million tons of steel by 1965-66. Between 1956 and 1960, the demand for steel might have gone up by say 14 million tons. Assuming a larger rate of general industrial expansion during the five years of the next Plan, the total demand for steel will go well beyond 4 million tons of finished steel. On this basis a target of 10 to 12 million tons of ingot steel or 7.5 million to 9 million tons of finished steel capacity by the end of the Third Plan period would be more or less appropriate.

There are also those who argue for perspective planning in respect of steel, say for 10 or 15 years. This argument is not without grounds, for an industry like steel is the main content of a strong economic infrastructure and a fully developed steel industry presupposes self-generating growth. Unless sufficient advanced planning is done, there might be occasions when Sudden spurts in steel based industries may create imbalances in steel supply. There is also an opposite argument, viz. that it would be wasteful to create additional capacity for steel unless efforts are simultaneously made for the development of steel using industries also.

Whatever may be the pros and cons of creating additional steel capacity during the Third Plan period, talks about establishing a new Steel Plant at Bokaro is already in the air. Again, the capacity of existing units in the steel industry can be increased without much difficulty. Proposals for expanding the capacity of Bhilai plant to 24 million tons of ingot steel have already been finalized. A balanced approach towards steel development in the country should take into account both the long and short term aspects so that the overall pace of industrialization is accelerated.

PLANTATIONS

In 1947, about 15 per cent of the workforce was engaged in activities outside manufacturing and agriculture, many of them in the three modern activities plantations, mines, and banks. Like large-scale industry, these enterprises used new organizational forms, had global connections, and attracted investment from Europeans and Indians. Many business houses had investments spread over industry, mines, plantations, and banks. Like large-scale industry, mines and plantations processed natural resources available cheap in India. Like the former, these activities saw large rise in GDP and GDP per worker. This chapter is about these activities.

In 1921, plantations and mines together employed 1.1 million persons. The figure was less than 1 percent of total employment, but one-third of employment in the modern sectors. Plantations employed 821,000 persons, 91 percent in tea. Coffee and rubber employed another 7 percent. Mines employed 268,000 persons, 68 per cent in coal alone. Modern banking was a small field in terms of employment, but it was crucial to the most important business of all commodity trading. All three received significant investment by Europeans. This chapter first covers tea and coffee, next coal, and lastly banking and insurance.

TEA AND COFFEE

When the East India Company lost its monopoly of China trade (1833), it turned to India for supplies of tea. Assam, which had become part of British India in 1825, had the ideal climate and topography for tea plantations. Efforts to develop plantations in Assam began. The first Indian tea was made in a government experimental farm and arrived in England in 1838. Encouraged by the reception, the Assam Company formed the following year, taking over the government's farms.

Also in 1838, the government set up rules for leasing out land to plantation companies. The terms were liberal. The tea boom that came did not last long because labour was scarce, planters were inexperienced, transportation was poor, and the quality of tea bad. There were forests everywhere. Labour was not locally available.

In 1850, the main mode of transport between Assam and lower Bengal was country boats. The difficulty and uncertainty of the journey were so great that the journey between Calcutta and Gauhati took between two and a half months. 'In the rains', a historian of tea wrote, 'tea chests could be taken in canoes down the small streams flowing into the Brahmaputra, but in the cold weather these streams dried up and as bullock carts scarcely existed in Assam at that time, chests had to be carried by coolie or by elephant.' A railway was necessary. Railway projects connected Calcutta and Chittagong with the tea districts of Bengal and Assam from the 1880s.

With these developments, the area under tea gardens expanded from 154,000 acres in 1880 to 337,000 acres in 1900. The number of workers increased from 184,000 to 665,000. Gardens came up in the Darjeeling hills and the Dooars region in North Bengal, and in the Surma valley in eastern Bengal. Nearly 75 percent of tea land, however, was located in Assam. The share of Indian tea in Britain's market increased from 7 percent in 1868 to 54 in 1896. The quality of tea improved, and the costs of production came down. Acreage expanded to 715,000 in 1921. No significant growth in acreage was possible after that time.

Between 1860 and 1900, tea plantations started in South India. Tea was growing in the Nilgiri hills. According to legend, Chinese prisoners stationed in the Nilgiris had helped planters manufacture tea. In the early years of Assam plantations, Chinese workers worked there. By 1900, cultivation started in the Wynaad (Wayanad) and the Kannan–Devan hills in North Travancore.

In the interwar years, the international tea trade cartel became powerful. The London-based Indian Tea Association started regulating the volume of production to keep prices high. The South Indian planters and the Dutch East Indies planters resisted them. World War II again was a period of growth in demand. But the 1940s also saw massive inflation in food prices. As tea employed many people, the gardens faced a problem of getting food for the labourers.

Tea sales took place in auctions at Calcutta and London. The participants in these auctions were the 'broker' firms who sampled, inspected, tasted, and valued tea from the plantations. They

brought tea to the auctions and gave advances to the tea growers. There were a few broker firms in Calcutta. All were British concerns until Independence. Calcutta-based British managing agent firms controlled the majority of the estates and the largest of them. The major firms were Andrew Yule, McLeod, Begg-Dunlop (merged with McLeod in the interwar period), Jardine-Skinner, Octavius Steel, Williamson-Magor, Shaw Wallace, Gillanders Arbuthnot, Davenport, and Duncan Brothers. James Finlay controlled almost the entire crop of the Kannan Devan hills. Bengali capitalists entered the industry quite early (in the 1880s) but never dominated it. The majority of them owned small gardens in the Dooars.

Most Indian firms consisted of families rather than corporate firms. They did not have enough resources to invest in their estates and operated at the poorer quality range aimed at domestic consumers. In one view, their limited and low-level operation resulted from European dominance in the tea trade and regional politics. The main barrier to entry into exports, however, was not the ethnic character of the tea cartel but the much higher capital and information necessary to succeed in exports. The capital was necessary in marketing and shipping and information needed about European markets. European firms had better access to capital, information, and an existing teamarketing infrastructure in London's Mincing Lane.

About the middle of the nineteenth century, when plantations in Assam and Dooars began to develop, the regions were sparsely populated, had bad communications, and the local labour pool was either non-existent or insufficient. A class of contractors, called arkatis, travelled through lower Bengal and Bihar and delivered 'coolies' to the gardens. Some of the contractors were Europeans. Indenture contracts were written before the labourer came to the garden and could become familiar with the conditions. The labourers understood little of the terms of the contract, which legally bound them to work in the plantations for a certain period. Until the railways opened, the journey to the plantations was hazardous and led to many deaths. Sanitary conditions at the transit points were poor. Not all the deaths, however, reflected the hardship of the journey. The migration was heavier during famines when immunity to epidemic diseases was generally low. The plantations offered poor quality of life. The newly cleared forests, in particular, exposed the migrants to malaria, known as the Assam fever. The work was heavy.

Workers often tried to run away, which gave rise to demands for strict laws against desertions. A law did become available in 1859. This was the Workmen's Breach of Contract Act,

better known as the Act XIII of 1859, which made desertion a criminal offence. Employers could penalize and forcibly bring back the deserting worker. The use of criminal law to deal with desertion was controversial in its own time. The act was coercive. But the workers were not ignorant of that fact and still wanted to come to work in the tea estates. The voluntary and incentivized nature of migration finds more recognition in recent studies on labour supply. For example, a paper investigating the effect of the act shows that labour supply varied with tea price, that is, rose when prices were high. But in areas covered by the act, supply response was weaker.

An act passed in 1882 allowed free recruitment, that is, without contracts. In practice, most free labourers were also put on a contract after they reached Assam. The so-called free labourers did not often see the difference and the free recruiters did not try too hard to explain it to them. In 1900, going to Assam, therefore, carried a negative image. But it is doubtful if the majority of the migrants were any longer forced or duped into going. Much migration to Assam was voluntary and induced by positive reports received from returnees. During famines and epidemics, Assam received a large number of migrants who expected that the estates would feed them and they did. Conditions of discipline in the plantations were harsh, but neither wage nor the quality of life was worse in the plantations compared to agricultural work in the source regions.

Social stresses, such as the difficulty of finding wives, added to the adverse image of plantation life. While a large number of women went to Assam, it was legally difficult for single women to migrate. Therefore, single women were scarce in the plantations. Around 1900, in the newer regions like the Surma Valley and in some of the older plantations in Upper Assam, a solution to these problems had been tried, namely, recruitment through garden sardars rather than by the outsider contractor. The sardar was a senior worker and supervisor. The planter gave him/her a paid vacation on the promise that he/she would bring friends and relatives to the garden. The sardar workers were cheaper and they came to the garden to stay there, for the sardars tended to bring whole families over to the plantations. The sardar also bore less of a search cost if indeed he/ she could persuade near relations to join the return party. Eventually, the sardari recruitment became legal and other systems illegal.

Wages of plantation workers were only slightly higher than the real income of agricultural labourers and usually less than those of factory or mine workers. Unlike these other workers, the plantation workers' earning capacity did not vary significantly by season. The working conditions

improved after 1900. There was better medical care and sanitation. By the interwar period, abuses were the exception rather than the rule. Tea garden labour was now a settled population that had lost much of its attachment to its places of origin. In one account, no doubt one more sympathetic to the managers, relations at work were like a paternalistic hierarchy between the workers and the managers. But laws to protect jobs and working conditions were slow to develop. These laws related to duration of contract, minimum wages, and execution of contracts after and not before the labourer came to the garden.

As in Assam or Dooars, workers in the South Indian plantations came from the plains. In the early years, hill ranges such as the Anaimalai were practically uninhabited and the workers carried many days' food with them when they came to work. However, unlike in eastern India, the South Indian labourers did not come from long distances. Many came from Mysore and Madras. Still, desertion was common and a more difficult problem because the breach of contract act did not extend to Mysore, a princely state. Ceylon plantations competed with Travancore and the Nilgiris for labour. The labour scarcity eased somewhat after the famine of 1876, which increased the flow of labour from the plains of Tamil Nadu towards the Nilgiri estates. Rising rent and stagnant wages in the agriculture of the plains increased the pressures to migrate to the plantation in the latter half of the century.

Coffee plantations developed in the uplands of Mysore, Coorg, Travancore, and Wynaad, from the 1870s. Coffee may have been introduced to southern Mysore by an Arab pilgrim of the name Baba Budan in the seventeenth century or earlier. After the AngloMysore wars, small settlements of Europeans developed in parts of the uplands. In this way, Mannantoddy, the only major town of Wynaad, became a home for a few European families. The European capitalists in Wynaad were mainly engaged in coffee at the end of the century. In Mysore, on the other hand, two-thirds of the area under cultivation belonged to Indian planters. About 1903, coffee engaged a little less than 100,000 workers.

Unlike in Assam, coffee workers did not have to travel very large distances. Still, labour supply was initially a problem, because it was seasonal and uncertain. In the mid-nineteenth century, nearly all workers were peasants in their villages or farm servants in paddy lands and returned to the village during harvests. The larger estates could not depend on such seasonal labour and moved towards indenture contracts and Tamil workers.

Initially, there were many obstacles to starting a coffee estate. Although connected by road to the ports of the Malabar coast, the uplands region was relatively isolated because of the difficulty faced by wheeled traffic on the 'ghat' roads. As late as 1865, coffee grown in Wynaad was transported to the ports using pack bullocks, large herds of which were brought in from Mysore during harvests. The transportation system improved somewhat in the latter decades of the nineteenth century. In 1881, the Mysore state reformed its mode of taxation of coffee, switching from an output tax to a land tax. The reform provided a major incentive to coffee estates to expand.

Despite their negative image as employers, there were many positive effects of the plantations. First, plantation labour paid better wages and more regular year-round wages; labourers received food security and medical care more than in agricultural villages. The nature of the work was similar; therefore, it was easier for agricultural labourers to join plantations, whereas the door to a factory job did not open to them. Second, the estates encouraged urbanization, transportation, schools, hospitals, and a local trade network that supplied material to the plantations and also facilitated marketing of rural produce. Third, they generated profits that flowed back into many mid-sized towns like Gauhati, Darjeeling, Siliguri, Dhubri, and Dibrugarh.

IMPACT OF THE FIRST WORLD WAR

Indian nationalists would frequently quote Friedrich List´s plea for protective tariffs for infant industries, but the British would, of course, never listen to that. The First World War, however, had the practical effect of a protectionist regime, because trade links were cut and India was largely left to its own devices. Moreover, India proved to be a valuable support base for the British empire. When a railroad had to be built in Mesopotamia as an important measure of the British war effort, Tata´s steel mill got the contract of supplying 1500 miles of rails. This was the decisive breakthrough for Indian steel production. Similarly the Indian cotton textile and jute industries derived great benefits from the war. Coal mining also benefited from the war. Before the war about 500,000 t of coal had been imported through Mumbai, where British coal was cheaper than Indian coal mined in Eastern India, from where about the same amount was shipped to places East of India. In the course of the war 1 mill. t were exported per year, while total production which had amounted to only 11 mill. t annually during the pre-war years, peaked at 28 mill. t in 1919.

The cotton textile industry nearly doubled its output during the war from about 0.7 to 1.3 bill. yards. The amount of yarn produced during the war remained more or less the same. Thus the increase in cloth production was mainly achieved by reducing the amount of yarn sold to the handloom weavers as well as curtailing the export of yarn. However, Indian cloth production could not compensate for the reduction of imports and thus per capita availability of cloth declined from 12.6 to 9.8 yards. (Morris 1983: 604) This was a strong incentive for a postwar expansion of the industry even though imports were bound to increase once more after the war.

Unlike most Indian industries, which benefited from the indirect protection caused by the war, the export-oriented jute industry was initially affected very badly by the outbreak of the war. But the worst affected were the peasants producing jute, because the price of raw jute dropped rather suddenly. Mill consumption of raw jute actually increased to about 1 mill.t in 1915 and remained rather stable until the end of the war. Trench warfare caused a huge demand for sandbags. This was a windfall for the jute industry. The import of looms was restricted by the war, the problem of excess capacities disappeared for some time. Consumption of raw jute per loom increased to 26 t and to 4 t per millhand. Net profits as percentage of paid-up capital increased by leaps and bounds. In the five years before the war they had amounted to about 22 per cent for the industry as a whole. For the three years from 1915 to 1917 they amounted to an average of about 70 per cent, but in 1918 they shot up to 162 per cent. (Goswami 1991: 94-95)

Industrial war profits were substantial for all industries, particularly towards the end of the war. In the meantime the exchange rate of the Rupee had risen from 1 s 4 d to 2 shillings. This was an incentive for the import of investment goods. Since no machinery could be imported during the war, most industrialists placed large orders as soon as the war was over. (Bagchi 1972)Of course, the high exchange rate led to a reduction of Indian exports. If this had continued, India would have faced a balance of payments crisis. But the Rupee soon dropped to 1 s 3 d. This also put an end to the investment boom. Moreover, the industrialists soon noted that they were faced with excess capacities.

UNIT –III

TRADE, FINANCE AND BANKING

FOREIGN TRADE

At the close of the Napoleonic wars, the market for Indian textiles fell owing to tariffs on Indian goods in England, which increased between 1797 and 1814. Almost simultaneously, technological change in weaving, such as Horrocks' power loom, reduced the difference in cost of production. The Company's commercial monopoly in India ended with the Charter Act of 1813 (the monopoly in China trade continued until 1833). Already, the Company had become more of a state than a merchant. Its power centre, however, was in the port cities, where trade was booming.

Three features of this boom stand out. First, the importance of foreign trade in the economy increased. An approximate measure of the importance is the ratio of trade to national income. The average annual growth rate of trade was 4–5 percent during 1834–1913. The rate at which national income at current prices was growing over 1868–1913 was about 1.5 percent. According to the best estimates, the rate of growth of national income was still smaller between 1821 and 1871. 24 It follows that the ratio of trade to income was rising for much of the nineteenth century. Second, while India lost its textile export market from the early 1800s, the overall scale of trade increased, no matter how we measure the change.

Third, the composition of trade changed. Textiles (in export) and bullion (in import) had dominated the eighteenth-century trade. Between 1800 and 1850, imported goods paid for exports. The demand for precious metals was still large, but it was not a means of paying for export. The export of cotton cloth also dropped sharply after 1800. Textiles began to be replaced by new exportable articles such as indigo, opium, silk, tobacco, and cotton, and to a more limited extent, salt, sugar, and saltpetre. In 1811, the principal export from India was cloth (33 percent of export value). Next in importance were opium (24), indigo (19), raw silk (8), raw cotton (5), and sugar (5). By 1850, the major exports were opium (30 per cent of value), raw cotton (19), indigo (11), sugar (10), and foodgrains (4). The composition of imports was simpler. Textiles and metals accounted for nearly 60 percent of the import value in 1850. Indigo and opium were both available in the hinterland of the ports.

Indigo was a dye used in cotton textiles. The world trade in indigo began to rise after the establishment of a machine textile industry in England. At first, supplies came from the West Indies. But this source became uncertain during the Napoleonic wars. Since Bengal had conditions suitable for its cultivation, European capitalists invested in indigo production in the Bengal countryside. European firms based in Calcutta funded them and handled marketing and shipment. They were known as agency houses. The European producers of processed indigo were called 'planters', misleadingly because they did not own plantations. The planters advanced money to peasants and made them sign contracts that specified the extent of land to be sown with indigo but left prices and quantities of leaves delivered to be fixed by tradition. The business was profitable to the peasants, as long as relative prices between competing crops did not change. In the 1850s, the price of rice increased much faster than indigo, and in 1859–60, the peasants turned unwilling to sow indigo. Since many of the same peasants had already taken advances, the planters took the contracts to the courts, seeking punishments for the defaulters. Some of them used more brutal methods to make the peasants fulfil their bargain. The resultant chaos was known as the blue mutiny. The administration refused to bail out the planters but designed a contract law instead.

Opium was an old crop in Benares, Bihar, and central India. Private traders and Company officers were aware of the huge potential market for the product in China, and the administration was keen to control the trade to capture more revenue from it. The Company devised a monopoly procurement of opium through granting the license to cultivate and trade to contractors. But it never quite trusted the contractors to give either the Company or the peasants a fair deal, and between 1775 and 1797, a state monopsony emerged. The contractor system ended in favour of a state–peasant contract, and progressively, the infrastructure necessary for regulation of production and quality was set up.

In the late 1700s, European merchants on the southern China coast, who had seen the popularity of opium shops in the coastal towns, tried to control an existing but only loosely organized trade in opium. Threatened by the agents of the state in the harbours of Whampoa and Macau, the opium traders withdrew to Canton. Ships plied between Calcutta and Canton. Opium exchanged for silver, which made opium a coveted target for sea pirates. The foreignowned 'opium runners' usually travelled in a group, to deliver the goods to armed vessels waiting in the harbours; many of these were also foreign-owned. These floating depots of opium sold some of the goods

locally and delivered the bulk to Chinese junks that journeyed up the rivers to sell retail to opium shops and agents conducting overland trade.

The trade was regulated in China and made illegal in 1796. But a weak Chinese State found itself powerless to suppress it. Opium shops multiplied in the maritime towns. The tension between the State and the foreign merchants broke out in the Opium War of 1839–40 when large quantities of opium were seized and destroyed by the authorities, inviting retaliatory strikes by the Company's navy. The war ended with the Treaty of Nanking (1842). Under the terms of the treaty, foreign traders would enjoy concessions and immunity from local law. The treaty also led to the transfer of Hong Kong to Britain, which provided a more secure site for trade.

Opium stabilized the British Empire. Between 1780 and 1833, the Company, and after that, the private traders, invested on average more than a million pounds sterling each year in buying tea in Canton. At first, imported silver was needed to buy tea. But the opium sale supplied another means to purchase tea. The resultant international exchange of stimulants tea for opium contributed to the balancing of trades of three countries: India, Britain, and China.

Opium trade helped Indian business. The ships that conducted the Bengal–China trade, the Parsis of Bombay and Calcutta, and the Marwari merchants involved in the inland trade in Malwa opium made great profits from the business. Merchants of Hong Kong had a stake in the trade. In this way, the empire consolidated Asian capital, which in turn contributed to other forms of enterprise. Leading Parsi business houses, for example, accumulated capital in opium before moving into cotton mills. Opium profits shored up government income, and via the exchequer, flowed back into canals and railway construction in India.

After indigo and opium, raw cotton was a big item of export. Descriptions of the Arabian Sea trade before European entry sometimes recorded trade in Indian cotton. Little is known as to how large or how systematic the trade was. It is safe to assume that cotton did not involve a specialized trading system. This obscurity was to end in the nineteenth century. Cotton export to Europe began from the second half of the eighteenth century in response to growth of cotton spinning in Britain. Cotton was not an indigenous crop in Britain, but a certain quantity was imported mainly for use as candlewick. Clothing manufacture using cotton yarn, rather using a mixture between cotton and linen, nevertheless did develop in the eighteenth century mainly in

response to the importation of Indian cotton yarn. In the 1760s, the domestic production of cotton goods expanded very rapidly. Between 1767 and 1785, patents were taken by James Hargreaves for the spinning jenny and Richard Arkwright for the spinning frame. These inventions and the wider adoption of the steam engine in factories increased the demand for raw cotton greatly. Between the year when the spinning jenny began and 1801, annual cotton imports into Britain increased from 2000 to 280,000 tonnes. Nearly 90 percent of this quantity came from the United States, where a dramatic growth of cotton cultivation followed the invention of Eli Whitney's saw gin (1793). The trade in Gujarat cotton, which was, in fact, an older trade, expanded at the same time from less than 100 in the 1780s to about 2000 tonnes at the end of the century.

The Company noted the prospect of selling raw cotton instead of textiles. It sponsored surveys in the 1790s about production, quality, and internal trade. The experience of selling Indian cotton in Britain was, nevertheless, disappointing. Partly because of the poor quality of ginning and partly internal transport costs, Indian cotton did not sell well in London. A large part of Gujarat cotton went to Bengal overland, and the prices offered did not succeed in diverting it to export trade. The situation changed during the Napoleonic wars. Trade with the United States became uncertain, and trade with Asian sources became more attractive than before. After 1800, for the next three decades, a series of partnerships between the administration and private entrepreneurs attempted to reproduce American cotton in India, lower the cost of transport, and make use of Whitney's gin to address the most serious problem of Indian cotton, the heavy admixture of seeds and dirt. Partly through these efforts, but mainly because of investments made by Indian traders and farmers, the cotton export trade steadily expanded. However, it was not before the beginning of railway construction (1850s) and the American Civil War (1861–5) that Indian cotton truly established itself as the fibre of choice in Britain.

DOMESTIC TRADE

At the time of Aurangzeb's death (1707), the Ganges and the Indus provided the main arteries for domestic trade in bulk commodities in North India. The two major arteries met in the Punjab, where caravans that crossed the Himalayas to connect India with Afghanistan, Iran, and Central Asia, also joined. Apart from grain, the overland traders carried salt, cloth, spices, and horses. In the Deccan peninsula, where neither navigable rivers nor wheeled traffic could penetrate far into the interior, the main mode of overland carriage of goods was the pack bullock. Bullock

trains of enormous size, managed by the Banjaras, connected northern India with southern India and connected the coasts with the capital cities in the Deccan. Coast-tocoast shipping conducted by maritime communities supplemented this overland traffic.

In the eighteenth century, frequent warfare took a toll on trading. The decline of the Mughal fiscal system upset those channels of grain trade that were linked to taxation. But the emergence of specialized clusters of textile production in the coastal areas stimulated the movement of cotton and grain from the interior towards these zones. The presence of the Europeans, who sometimes lent their idle shipping capacity, stimulated coast-to-coast trade. In regions located near the river Ganges, there was little disturbance. Cities such as Benares, Patna, Murshidabad, or Dhaka seemed to do well commercially.

The rise of British power in the eastern Gangetic plains stimulated domestic trade in grain, even as it adversely affected the fortunes of the older capitals such as Murshidabad and Dhaka, and with it, some of the older banking and merchant firms that depended on the custom of the Nawabi regime. Anand Yang shows that a late eighteenth-century boom in Patna based on revenue farming, banking, and manufacturing came to an end around the middle decades of the nineteenth century with decay of artisanal production. But after that shock, trade and finance revived again in the city, now based on agricultural trade and finance. Another study suggests a rise in the market power of the 'non-resident' grain merchant in late eighteenth-century Bengal. 30 Demand for grain in growing cities like Calcutta was, of course, buoyant. In the western Gangetic, some regions specialized in the production of indigo and cotton and purchased grain from areas situated further away.

BANKING

Banking in colonial India came into two broad segments: informal and formal. The informal sector consisted of firms not legally recognized as either companies or banks. Formal or corporate banking in the colonial period had four types: exchange banks, Presidency banks, Indian joint-stock banks, and cooperative credit societies. Foreign-owned exchange banks were licensed to deal in foreign currency, so they financed foreign trade and remittance. The Presidency banks and private joint-stock banks handled domestic trade and remittance. Indian moneylenders, banking firms, and traders supplied the credit needs of peasants, landlords, and artisans. The borders between the

segments were not clearly defined. The exchange banks deposited a part of their balances with the Presidency banks. The Presidency banks and Indian moneylenders often financed two stages of the same business. Cooperative credit societies started after the passing of the Cooperative Credit Societies Act of 1904, which exempted cooperative societies from the Indian Companies Act. Rural credit societies rapidly increased in number and deposits. But by 1947, this remained a tiny segment of banking and not an efficient source of rural finance either.

In the nineteenth and early twentieth century, many indigenous banking firms continued to do business in hundi, which functioned as trade bills or a banker's draft. The hundis came in a wide variety of contractual terms, dealing with the safe and honest delivery of the goods against which the bill was drawn. They had many names, a result of these contractual terms. Sometimes, the hundi bore the name of the community that floated it. Aside from hundis, throughout India, a great deal of the post-harvest crop movement was financed in the twentieth century utilizing inter shroff short-term loans. Traders borrowed from lenders who, in turn, borrowed from other lenders; the chain, at times, reached some of the large shroff houses whose bills were acceptable to the corporate banks. Large inter-shroff transactions, however, were strictly monitored through community channels.

But the dominance of the community distanced hundi from modern money markets. Personal reputation mattered to the success of the hundi. Not everybody could enter the business as clients or as banking firms. The government was becoming more anxious about the personal nature of such transactions and the fact that the modern laws of contract did not cover them effectively. The government was also keen on taxing these contracts and succeeded partially using the Negotiable Instruments Act of 1881.

A proper history of small-scale moneylending does not exist. This world changed a great deal between the late nineteenth century and the late twentieth. Moneylenders financed peasants and artisans, which the corporate banks never did. Many of the clients of the moneylenders were people in need of quick money and who could not give security. The strengths of moneylenders were their intimate knowledge of clients and absence of regulation, adding up to low transaction costs for customers. In a remote village, a moneylender could impose an effective monopoly. But the village moneylender, in lending to impoverished clients engaged in unstable livelihoods, also took unusual degrees of risk.

Coming to the corporate banks, let us first look at the exchange banks. The failure of the agency houses in Calcutta created a gap in financing foreign trade. Overcoming some resistance from the East India Company, foreign banks began to enter this field from 1853. These banks formed in countries of origin. But they financed trade from and to India. Of the 17 exchange banks that remained at Independence, seven had their head offices in England, two each in the United States of America, Japan, and Pakistan, and the others were based in France, Holland, China, and Hong Kong. Four of these, including the Chartered Bank and Grindlays, had the bulk of their business in India. As a group, the exchange banks monopolized foreign trade financing. While the Indian private banks could in principle enter this market, they could not easily operate at the London end of the market. The majority of the clients of the exchange banks, on the other hand, for reasons of safety or easier communication, were foreigners themselves.

The three Presidency banks the Bank of Bengal, Bank of Bombay, and Bank of Madras were established between 1809 and 1843 with participation by the government in the capital and government control on management. Of these, the Bank of Bombay failed in 1868, shortly after the cotton boom of Bombay. But a bank of the same name was started again. These banks performed five key functions: They held the government's cash balances, issued (on a limited scale) and circulated currency notes, discounted bills and securities, advanced short-term working capital credit to private business, and accepted deposits from the public. Being partly the government's banker, the Presidency banks had to operate under restrictions. They could not deal in foreign exchange, which was considered a risky business. And, following Anglo-Saxon tradition, they did not supply long-term loans. They did, however, accept securities against advances and stimulate the capital market in this indirect way. In 1876, all three came under the Presidency Banks Act. In 1921, they were amalgamated to form the Imperial Bank of India. In 1947, the Imperial Bank was nationalized and renamed State Bank of India.

The main clients of the Presidency banks were businesses connected with European enterprise and that small segment of Indian enterprise that the Europeans understood or could easily communicate with. Thus, the largest of the shroffs, the indigenous bankers, were also clients of the Presidency banks. The Presidency banks were not easily persuaded to lend money to small- or medium-scale Indian businesses. Increasingly in this period, joint-stock banks were started by Indians to meet that need.

The agency houses performed some banking services for the East India Company, private merchants, and the public. The 1830s and the 1840s commodity price crashes finished them off. A second banking boom occurred in Bombay in the 1860s, encouraged by cotton speculation. Again, most of the banks then started later went into liquidation. A third boom occurred with the spread of the spirit of swadeshi (nationalistic self-reliance) from 1906. The centre of this boom was Calcutta. But Indian banks elsewhere also profited from the nationalistic wave. In 1913–14, a few major bankruptcies led to a widespread crash of these banks. In the interwar period, the main episode of banking panic occurred in 1923.

In this awkward way, Indian joint-stock banks expanded and the habit of banking spread among urban households. Until the end of World War I, deposits held at the Presidency banks exceeded those held in the Indian joint-stock banks. After that, growth of deposits in Indian joint-stock banks was far more rapid, despite periodic panics. In 1947, the Indian banks together formed the largest segment in modern banking.

Indian banks grew despite the risks because of the limited reach of the Presidency banks, the conservative policy of the latter, and the offer of high incentives by the Indian banks. The Presidency banks were slow to expand branches. They had almost no presence in smaller towns. Many such towns had considerable demand for credit due to agricultural trade. The Indian banks were a diverse group. At the top of the hierarchy were a set of relatively more sound and stable banks (mainly Allahabad Bank, Bank of Baroda, Bank of India, Punjab National Bank, and Central Bank of India). These were established in the larger towns and arose from existing business partnerships between large trading and industrial houses. All members of the set survive today as nationalized banks (two were recently merged with other banks). A group of Europeans started the Allahabad Bank in 1864. It functioned much like the other large Indian joint-stock banks. The Bank of Baroda was started in 1908 by the Maharaja of Baroda, Sayajirao Gaekwad, in close collaboration with the leading shroff houses of Baroda. The family of David Sassoon led the establishment of the Bank of India in 1906, with contributions to share capital from the leading Parsi, Gujarati, and Bohra houses of Bombay. The Central Bank was established in 1911 by a Parsi house and merged with the Tata banking business in the 1920s. A group of traditional business houses based in Lahore started the Punjab National Bank (1895), the only one of the set that

claimed to be a nationalistic enterprise. To this list should be added the Canara Bank, set up by lawyers of the Goud Saraswat community, who had a tradition of community banking.

All of these banks survived the panics. The ability of these banks to weather the risks of commerce owed to prudent management, the deep pockets of some of the main promoters, and a conservative investment profile. They held an unusually large proportion of assets in the form of government securities and functioned in this respect much like the Presidency banks. Further, almost all of these banks confined their operations to urban and larger clientele, again like the Presidency banks. They had few branches and a few chosen clients.

On another end, lesser-known and informal firms sponsored many of the Indian banks. While they were less conservative about their clients, they had neither the brand name of the Presidency banks nor the image of high security that the government backing gave the latter. Therefore, they felt that they needed to offer high incentives to attract deposits and borrowers. Furthermore, the absence of an explicit regulatory system made them take undue risks. Insider lending to doubtful clients was common. 'Many of them avowedly exist to serve the interests of particular castes and communities.' 16 Loans made out to relations and kin had a high chance of turning bad because it was often difficult to punish or discipline relatives and friends. Thus, these banks suffered from under-capitalization, inexperience, insider lending, high chance of swindles, adverse selection, and the absence of a lender of last resort.

Many swadeshi or nationalistic banks started between 1906 and 1913. They had small paid-up capital, boards of directors predominated by lawyers, and management by persons without any experience or knowledge of banking. They secured deposits by offering high rates and lent on second-rate securities to risk-taking businesses. Unlike the Presidency banks, the swadeshi banks did not necessarily restrict themselves to working capital. While their reserves were small, the absence of a lender of last resort pushed even slightly troubled banks quickly into liquidation during episodes of panic. These dynamics of instability were in evidence on several occasions between 1913 and 1946.

The idea of a central bank had a long pre-history. Warren Hastings proposed it in 1773. The goals were to have a government's banker, develop a competitor for the shroffs, on whose help the Company still relied heavily, and resolve the chaos that arose from several currencies in circulation.

A bank did materialize from this proposal. But despite making some profits in the few years when it had been at work, it was closed possibly due to conflicts within the Company. Subsequently, the Presidency banks performed the role of a banker to the government.

There are four functions that a central bank is expected to perform: to be the banker to the government, banker to other banks, to regulate currency and money supply, and manage foreign exchange. The Presidency banks (and the Imperial Bank of India after 1921) served only the first of these. Also, they functioned as commercial banks. They did become bankers to other banks voluntarily. That is, they received deposits from other major banks, but not by force of law. Moreover, they were neither obliged nor expected to lend to other banks in times of crisis. The Presidency banks had little or no role in meeting the third and fourth objectives. Until the establishment of the Reserve Bank of India, the finance department of the government looked after the third objective.

In the 1860s, the proposal briefly revived. The then viceroy, John Lawrence, discarded it. His minute on the subject revealed that the government was not willing to accept the idea of a monetary authority independent of its influence. The proposal revived in the course of the 1898 currency reform committee. The Royal Commission on Indian Finance and Currency (1914) invited J.M. Keynes and Ernest Cable to write a proposal for a central bank. Keynes was known to be in favour of the idea. The government, however, remained inert and distracted by the war and the exchange controversy. Besides, the idea of an independent monetary authority was still an anathema to many.

The idea finally came into its own at the 1926 currency commission and the 1931 Indian Central Banking Enquiry Committee. Reports of both committees officially endorsed it and recorded a strong recommendation for it from influential witnesses. One of them was Sir Montagu Norman, the then governor of the Bank of England. When the Reserve Bank finally started, one of its first tasks was to integrate what seemed to be a fragmented and chaotic banking system. This process could not happen suddenly, nor was it done completely. Rather, it was an attempt consisting of a series of steps, some of which were forced by circumstances such as further banking panics.

Despite the fluctuations and limited functions, banking did develop in India. Bank deposits as a proportion of GDP increased from less than 1 per cent in 1870 to 12 per cent in 1935. There is some sign that throughout colonial India, interest rates tended to fall during the time span covered by this book. The nominal Bank of Bengal bank rate was 7 per cent in 1857. The Imperial Bank of India's bank rate hovered between 5 and 6 per cent on average in the 1930s. The decline was a steady one and, excluding the price depression of the 1930s, would suggest a fall in real interest rates. The growth of formal banking, therefore, was a positive development. After Independence (1947), with the further growth of private corporate banks, the cost of short-term secured borrowing fell to 4–5 per cent (1950s).

There is little evidence, however, that the cost of long-term capital fell in response to these changes. Most ordinary loans advanced by bankers, whether formal or informal, were trade loans. Long-term capital remained expensive. Capital was always costly in India. In the tropical monsoon climate, agricultural operations were highly seasonal. Interest rates went up to extraordinarily high levels in a few months of the year. The attraction of making a quick buck by lending short term in the busy season was so great that little money was on offer to long-term borrowers. Stock markets, banks, and cooperatives eased the situation only slightly.

Corporate banks were reluctant to lend to clients whom they did not know enough, which meant that many European banks did not easily do business with Indian clients. The banks insisted on goodquality securities, which none but the richest Indian firms could offer. The awkward relationship between European banks and Indian firms need not be seen in racial terms. The mainly European Bank of Bengal did a lot of business with Indians and discounted their bills. But it also discriminated between these bills on the degree of trust they could place on these. Such discrimination came from information asymmetry. Bankers did not know enough about their potential clients. Asymmetric information was also present in the business of the exchange banks for the same reason. And in the business of the Indian joint-stock banks, preference for insider lending meant that clients who were not part of the inner circle of friends and relations had little chance of getting a good service.

TRADE POLICY

Until World War I, trade between India and Britain was effectively free of tariffs. Many colonial administrators believed in the benefits of free trade. British manufactures needed to seek markets all over the world, and many British trading firms were setting up bases in India. The Lancashire mill owners were a powerful lobby in British politics. This lobby resisted attempts to impose or increase an import duty, for textiles formed the main import by India from Britain and India bought 30 per cent of British textile export in 1865. On the issue of customs duty, the Indian government, which wanted to explore all sources of tax, and the British exporters influencing the India Office in London did not see eye to eye. Until World War I, therefore, rates of import duty on textiles were low. Such duties were removed and reimposed from time to time and partly offset by excise on competing goods produced by the mills in Bombay and Ahmedabad.

During the war, India's contribution to the war effort was critical for London. After the war, the government of India's point of view on taxation could not be ignored. Tariffs were a convenient way to raise revenues at a time of scarcity of money. Indian sentiments in favour of industrialization were growing. And the influence of British business on the imperial policy was in decline. Japan had emerged as a competitor of Britain in Asian markets. These circumstances weakened the resistance to customs tariffs. There was steady and significant increase in average tariff rates after 1920. Tariffs were one part of trade policy; controlling the value of the currency was another. The government's control on the Indian exchange rate continued to be controversial, a subject taken up further on.

RESERVE BANK OF INDIA

A new chapter in Indian currency was opened when in 1935, the Reserve Bank of India was established to function as a Central Bank for the country. The necessity of a Central Bank had been felt for a long time. The Chamberlain Commission had attributed the monetary and currency troubles to the absence of a Central Bank in the country. The Hilton Young Commission had also recommended the establishment of a central bank for the unification of currency and credit policies and also for carrying out other central banking functions. With the establishment of the Reserve Bank of India the maintenance of the monetary standard, issue of paper currency and the maintenance of the external value of the rupee were to be looked after by this authority.

So far as, the paper currency is concerned its importance had been gradually increasing in the monetary supply of the country. Up to this time, the paper currency was being directly issued by the Government of India on fixed fiduciary reserve basis. During the First World War, especially towards its conclusion, the paper currency became almost inconvertible mainly due to large increase in its circulation from about Rs. 66 crores in 1914 to Rs. 153.46 crores in 1919. This increase was mainly supported by securities rather than by metal. In fact the metallic reserve fell from its pre-war percentage of 78.9 to 35.8 in 1919. New notes of Re. 1 and Rs. 2/8 were also issued during this period.

On the basis of the recommendations made by the Babington Smith Committee the Government of India had passed the Indian Paper Currency (Amendment) Act in 1920, according to which the metallic reserve was to be at least 50 percent of the total reserve. In order to ensure elasticity in the paper currency system, the Act also authorized the controller of currency to issue notes (emergency currency) to the extent of Rs. 5 crores in the form of loans to the Imperial Bank of India on the security of bills of exchange of 90 days maturity. This was done to meet the rising demand for notes during the busy season. Later on, in 1923 the limit of the emergency currency was raised to Rs. 12 crores.

The Hilton Young Commission had made some important recommendations about the paper currency. It had recommended the creation of a Central Bank with the sole right of issuing paper currency. To ensure elasticity and stability in the paper currency the commission had recommended the amalgamation of the Paper Currency Reserve and Gold Standard Reserve. The Commission was in favor of the Proportional Reserve System of note issue with gold and gold securities not less than 40 percent of the reserve.

With the establishment of the Reserve Bank of India in 1935, the sole right of note issue was given to it. It took over the management of note-issue from the Currency Department of the Government by opening its own Issue Department. The combined Paper Currency and Gold Standard Reserves were also handed over to the Issue Department of the Reserve Bank. The paper currency system was based on the proportional reserve method. According to the Reserve Bank of India Act of 1934, the Reserve Bank was required to keep not less than 40 percent of the reserve in gold coins, gold bullion and sterling securities. The amount of gold coins and bullion at any time

was not to fall below Rs. 40 crores. The balance of the notes issued were to be covered by rupee coin. Government of India securities, approved bills of exchange and promissory notes.

It was expected that the Reserve Bank being in intimate touch with the money market would better manage the paper currency according to the requirements of the economy of the country. To enable the Bank to issue more currency in times of emergency, for a limited period the proportion of the gold portion of the reserve could fall below 40 percent. with the permission of the Government provided that the Bank paid a tax on the deficiency during such a period.

With regard to the external value of the rupee, the Reserve Bank was required to maintain the then existing ratio viz., 1 sh. 6 d. sterling, by selling sterling at a rate not below 1 sh. 549/64 d. for a rupee and by buying sterling at a rate not higher than 1 sh. 63/16 d. for a rupee. (The slight deviation from 1 sh. 6 d. is accounted for by the cost of importing or exporting this amount of sterling between India and England).

UNIT IV- TRANSPORTATION

ROADS AND ROAD TRANSPORT

It was Lord Dalhousie who gave the initial impetus to the construction of new roads, but the development of railways later in the nineteenth century created the demand for more roads as feeders to the railways. Although the construction of roads at right angles to the railways was thus encouraged, the interests of the railways worked against the construction of roads parallel to the railways and this hampered the development of big trunk roads. Local authorities, endowed with a new life by the reforms introduced by Lord Mayo and Lord Ripon, tried, within the limits of their funds. to build local roads and convert some of the Kutcha (un-metalled) roads into pucca (macadamised) thoroughfares. By 1936-37 India, excluding the Princely States, had over 3 lakh miles of roads of which nearly 85 percent were maintained by the various local authorities such as district boards, local boards and municipalities. The mileage of metalled roads was only about 25 percent of the total. Many of the so-called unmetalled roads were little better than tracks and were liable to become unusable during the rains.

The Royal Commission on Agriculture had pointed out in 1928 the unsatisfactory state of road development in India and the problems which this created for the orderly marketing of agricultural crops. India at that time possessed no more than 20 miles of roads for every 100 sq. miles of area, whereas in the U.S.A. There were 80 miles of roads for the same area. Apart from the inadequate road mileage, there were the problems of under-maintenance, due mainly to the poor finances of the local authorities, and the unsuitability of many of the roads for motorized transport. In the inter-war period the use of motor trucks and other motor vehicles was spreading, but road development was lagging behind. Even in those regions of the country where railway transport was too uneconomical or inconvenient, road transport could not play the role expected of it owing to inadequate investment on roads. At the same time, there were regions where roads and railways competed with each other for the limited cargo available.

In the circumstances the importance of a scheme of coordination between rail and road transport could not be overlooked and in 1932 the Government of India appointed a two-member committee consisting of Mr. K. G. Mitchell, Road Engineer to the Government and Mr. L. H. Kirkness, Special Officer with the Railway Board, to inquire into the matter and make

recommendations. The Mitchell Kirkness Report (1933) recommended the creation of a set of coordinating authorities throughout India.

The hasty expansion of motor transport was roundly condemned and the necessity for putting a curb on the motor transport operators was emphasized. The Road-Rail Conference which met in Simla in April 1933 considered the Mitchell Kirkness Report and recommended a policy of authorizing railways to own and operate a fleet of road vehicles. This was done by amending the Railways Act in September 1933. Another approach to the rail-road coordination problem was to set up in 1933 a Transport Advisory Council entrusted with the function of evolving a road policy on an all-India basis, keeping in mind the relationship between roads, railways and other forms of transport. An important step was taken in 1937 with the establishment of a Department of Communications in the Government of India which was to look after all forms of communication in a coordinated manner and included roads, railways, inland navigation and civil aviation on the one hand and posts and telegraphs, broadcasting and meteorology on the other.

The Motor Vehicles Act, adopted in 1939, had as one of its objectives the regulation of road transport operators. Regional transport authorities set up under this Act were enjoined to grant permits to motor transport vehicles only after satisfying themselves that uneconomic competition was not thereby encouraged. The transport authorities were also given other powers to secure the safety and convenience of passengers using road transport.

The construction of roads has been handicapped in India, as compared to the expansion of railways, primarily because the former was built from the government's (or local authorities') current budgetary resources, while the latter was built with borrowed funds. The Road Development Committee of 1927, when faced with the problem of raising adequate resources for the latter was built with borrowed funds. The Road Development Committee of 1927, when faced with the problem of raising adequate resources for road-building, could not come out boldly in favor of the method of loan finance. Instead it suggested a policy of special duties on motor spirit which were imposed in 1929. The Finance Act of that year increased the duties on both imports and domestic production of motor spirit from 4 annas to 6 annas per gallon. The proceeds from these enhanced duties were to be credited to a special Road Development Account. The amount credited to this Account was to be distributed among the Provinces as follows: after deducting 10 percent for Central use, the bulk of the remainder was to be allocated to each Province in proportion to the

amount of petrol consumed there in the previous calendar. year and another portion was to be allotted to the Government of India for making grants to the minor Provinces and Princely States. The grants were to be made on the advice of a Standing Committee for Roads set up at the Center each year with members of both houses of the Indian Legislature. This arrangement, known as the Road Convention, was approved by the Indian Legislature in 1930. In 1934 the share of the Central Government in the Road Development Account was raised to 15 percent and provision was made for expenditure out of this fund on road maintenance as well as for servicing of loans incurred for road development. In a Resolution of 1937 the Central Government was authorized to retain for an indefinite period a Province's share in the Road Fund if delays without reasonable cause were found to occur in the utilization of the funds. The Center could also use the funds as a lever to pressurise Provinces to bring their motor transport regulations in line with the all-India policy. The financial scheme which Sir Otto Niemeyer drew up after the passing of the Government of India Act, 1935 (see Chapter 19). made the Provinces' share in income tax proceeds dependent on railway earnings: this was an indirect pressure on the Provinces to regulate the development of motorized road transport so that railway earnings might not suffer as a consequence.

During the Second World War some roads of strategic importance were constructed under the supervision of military engineers. In December 1943 a plan for future road development in the country was discussed at a conference of the Chief Engineers of all the Provinces at Nagpur. This 'Nagpur Plan' aimed at bringing all villages in India within five miles of a main road and estimated that this could be done by adopting a program of 4 lakh additional miles of road development phasing the program over ten years. The cost in 1943 prices was calculated as Rs. 372 crores. The roads to be developed were classified as (a) National Highways to be built and maintained by the Centre, (b) Provincial (later State) Highways for which the responsibility would rest on the Provinces, (c) District roads to be maintained by district boards, and (d) village roads to be looked after by village self-governing agencies. By 1946 road development plans had been drawn up in many Provinces while the Central Government assumed responsibility for the development of National Highways in 1947. A Road Transport Corporation Act was adopted by the Central Legislature in 1948 and revised in 1950 to enable Provincial governments to set up statutory corporations for the regulation of road transport systems in their territories.

Between 1947 and 1950 an expenditure of Rs. 27.1 crores had been incurred in the Provinces for their programs of road development; at the prices then prevailing this represented barely 5 percent of the target under the Nagpur Plan. Financial difficulties as well as physical shortages of construction materials and skilled labor stood in the way of a more rapid pace of development. The Central Government's expenditure on National Highways for the period 1947-52 amounted to Rs. 9.3 crores or 15.5 percent of the recommended target. The Central road programs envisaged the development of 13,400 miles of roadways, while the States were expected to add about 30,000 miles in all. At the beginning of the First Five-Year Plan period (1951-56) India had over 97,500 miles of surfaced roads and about 151,000 miles of unmetalled roads.

The entry of commercial transport operators using motor transport is traceable to the years immediately following the First World War. Surplus vehicles left by the military establishments were utilized in the first instance, but the rise in imports of motor vehicles was thereafter quite rapid. In 1950 there were altogether over 47,500 transport operators of whom more than 46,000 were small operators having a fleet of five or fewer vehicles. State transport services had also entered the field and their organization was becoming wider in the post-Independence period. By June 1950 the capital at charge in the various State transport organizations had reached a figure of Rs. 12 crores. In some States transport undertakings had been organized on the basis of joint participation by the State Government and the railways, while in others private operators were also included in such joint undertakings.

Several proposals for the manufacture of automobiles in India were considered in the period immediately preceding the Second World War and the one for an automobile plant at Matunga, Bombay, was in an advanced stage of implementation when the War intervened. It was only in the post-war period that automobile manufacturing capacity came into existence. But actual production of automobiles in 1950-51 was still below 5,000. The automobile industry was granted protection in advance of actual production, one condition on which protection was given being that it must reduce its dependence on imported components progressively over the years.

RAILWAYS

THE HISTORY of the Indian Railways may be regarded as consisting of an era of experiment in organization and construction lasting till the end of the nineteenth century, followed

by an era of consolidation and expansion that covered the first half of the twentieth century. The recent stage of planned development differs from the earlier stages in the fact that for the first time the growth of the railways has been integrated with the planned expansion of the various sectors of the economy.

THE NINETEENTH CENTURY

First Railways

The idea of constructing railways in India was first put forward in 1831-32 within a few years of the beginning of the Early Railway Age in Great Britain. Mr. Macdonald Stephenson made a proposal to the Bengal Government in 1944 for a line from Calcutta to the North West frontier. About the same time Bombay businessmen suggested a line across the Western Ghats. As a result provisional committees for the East Indian Railway and the Great Indian Peninsular Railway were formed and the proposals submitted to the Court of Directors of the East India Company in 1845. The Court was in favor of the proposals. However, discussions about the terms of the contract to be entered into with the railway companies and anxiety about the natural difficulties of constructing railroads in India led to further delay. An engineer, F. W. Simms, was sent out by the Court of Direc tors to make enquiries. He reported that: "Railroads are not inapplicable to the peculiarities and the circumstances of India, but on the contrary are not only a great desideratum but with proper attention can be constructed and maintained as perfectly as in any part of Europe. The great extent of its vast plains, which may in some directions, be traversed for hundreds of miles without encountering any serious undulations, the small outlay required for parliamentary or legislative purposes, the low value of land, cheapness of labour, and the general facilities for procuring building materials, may all be quoted as reasons why the introduction of a system of railroads is applicable to India."

The discussion on the terms and the conditions of the contract between the companies, the Court of Directors and the Board of Control continued for three years after Simms' Report. The first agreements between the East India Company and the East India Railways (E.I.R.) and the Great India Peninsular Rail-way (G.I.P.R.) companies were signed only in August 1849. Work of construction began in 1850 and the first experimental line from Bombay to Thana. was opened in 1853.

OBJECTIVES OF RAILWAY DEVELOPMENT

Railways were not developed in India, as in Germany and Japan, to foster industrial development. The objectives in the minds of the authorities, both in England and India, were chiefly political and commercial. Railways would strengthen the control of the British over the country by enabling rapid movements of troops and supplies over large distances. The Governor General, Lord Hardinge, writing in support of railway development in 1846 said that: "In this country. the facility of rapid concentration of infantry and artillery and stores may be the cheap prevention of insurrection, the speedy termination of war, or the safety of the empire." This became doubly evident after the War of Independence of 1857. In addition, railways were expected to promote the export of raw materials from India and to open up a market for British manufactured products. "Great tracts", wrote Lord Dalhousie in 1853, "are teeming with produce they cannot dispose of". He pointed to past experience to argue that imports into the country would also increase. "Every increase of facilities for trade has been attend- 1 Quoted in Das, M. N., Studies in the Economic and Social Development of Modern India (Calcutta, 1959).

With an increased demand for articles of European produce in the most distant markets of India." Sir Charles Wood, President of the India Board, writing to Dalhousie expressed the view "that if we could draw a larger supply of cotton from India it would be a great national object It is not a comfortable thing to be so dependent on the United States If we had the Bombay railway carried into the cotton country it would be the great work which Government is capable of performing with a view to this end." The benefits that would accrue to the people of India from the railroads were expected to flow from the attainment of the political and commercial objectives mentioned. This was entirely in accord with the contemporary practice of viewing the colonies as satellites geared to the economy of the mother country and deriving consequential benefits. The fact that railways were developed without any consideration for the welfare of the Indian people, when we consider the relative neglect by the government of the development of irrigation projects. In an agricultural country plagued by floods and drought, irrigation instead of transport should have been naturally considered more important. The development of railways fulfilled the objectives set for them. The control of the British over India was strengthened. The export and imports of the country began to grow rapidly. Raw cotton exports increased from £1.8 million in 1849 to £4.3 million in 1858, that of food grains from £859 thousand to £5.0

million over the same years. Over the same period the import of cotton and woolen manufactures increased from 22.3 million to 25 million and of machinery from £ 18,000 to & 465,000.

THE OLD GUARANTEE SYSTEM UPTO 1869

Lord Dalhousie's famous Railway Minute dated 20 April 1853 was the "textbook" for future railway projects in India. It laid down the broad directions in which the construction, management and finance of railways was to be undertaken. Dalhousie recommended the replacement of the policy of experimentation lines by a policy of constructing trunk lines connecting the interior of each of the three Presidencies with principal ports, and the Presidencies with each other. These trunk lines were appropriate to the political and commercial objectives that underlay railway development. Secondly, Dalhousie suggested that the construction of railways should be turned over to private companies working under government supervision and control and guaranteed a rate of return on capital.

The acceptance of Dalhousie's recommendations by the Court of Directors led to the sanction of the construction of 5000 miles of line by eight companies under terms that are known as the Old Guarantee System. Under this, land for railroads was to be provided free by the State; the Indian Government guaranteed interest at 44-5 percent at a fixed rate of exchange of 22 d. to the rupee on the money raised by the companies; if the companies wished to withdraw at any time they could surrender the railroads at six months' notice and get back the actual capital spent; Government could purchase the railways at intervals of 25 years at the mean market value in London; and certain powers of supervision and control of the construction and the working were given to the Government. Because of the extremely favorable terms there was no difficulty in securing capital in London and by 1869, 4,255 miles of line had been constructed with a capital outlay of Rs. 89 crores.

It has been argued for the Guarantee System that capital would not have been forthcoming for investment in India without a guaranteed interest. Against this assertion there is the weighty opinion of William Thornton that "unguaranteed capital would have gone into India for the construction of railways had it not been for the guarantee." Other contemporary observers were of the same view. It has also been argued that the Guarantee System succeeded in getting things done. The question is, at what cost? On the criterion of economy the system stands condemned. The

minimum field guaranteed was in excess of prevailing rates in the London money market; the interest was reckoned from the day of deposit of money rather than from the date the lines were opened; the terms were such that the companies got their 5 percent "whether the funds that were lent were thrown into the Hooghly or converted into brick and mortar." Thus "the Indian guarantee killed effort for economy, promoted recklessness, and involved the country in liabilities much beyond what the people could bear." It "practically encouraged wasteful expenditure, for the more capital 'calledup' the greater the return."s One result of this was that the cost of construction of lines, originally estimated at £ 9,000 per mile for single lines and £ 15,000 per mile for double lines, worked out at £ 20,000 per mile. The E.I.R. was estimated to have cost £ 30,000 per mile. in the Indian Railways. The burden of the payment was particularly great since the financial position of the Government was far from satisfactory.

STATE CONSTRUCTION AND MANAGEMENT, 1869-1882

The defects of the Guarantee System were soon realized. Sir J. P. Grant, President of the Viceroy's Council, criticized it in 1857 and Lord Canning a year later. An attempt to encourage unguaranteed companies ended in failure. The idea of state construction and management of railways was suggested by Lord (then Sir John) Lawrence in 1867 and again in 1869. The new Viceroy Lord Mayo's government repeated the suggestion in the same year and it was accepted by the Secretary of State. Thus, in the history of Indian railways a new era began. The 'State' took upon itself the task of construction of another 10,000 miles of track at a rate of 300 miles per year and an estimated cost of £ 12,000 per mile. The decision was remarkable for an era of laissez faire. At the same time the agreements with some of the more important railway companies were modified by the Secretary of State for India without consulting the Government of India. The State surrendered its right of purchasing the rail-way on the expiry of the first 25 years of the contract with the companies in return for an equal division of the profits.

During the first decade after 1869 construction proceeded apace. Initially a sum of & 2 million annually was appropriated for the purpose but in 1875 the sum was increased to £ 4 million. During this period the Government, borrowed money in London at rates of 4 percent or less. The total mileage was increased from 4,771 in 1870 to 8,996 in 1880 i.e. by 88 per cent, while the total capital outlay on open line rose only 44 per cent (from £ 88 million to & 129 million). This was partly due to greater efficiency and economy in construction; the cost per mile of broad gauge line

averaged about £ 10,000 for State lines as against £ 13,000 for guaranteed lines. The lower cost of expansion during this period, however, was also due to the unfortunate adoption of a narrower gauge, in the interests of economy, for many of the new lines. The early trunk railways were all of a gauge of 5'6". The greater part of the new extensions were made on the meter gauge. A comparison of earnings in 1880 shows that while the average return on capital was 6.2 per cent on company managed lines, it was 2.15 per cent on state managed lines. This was partly due to the fact that the State lines were still in the initial years of development, and also to the fact that the company lines were located in the more productive and prosperous parts of the country.

REVIVAL OF COMPANIES 1882-1900

About 1880 there was a change in the policy of state construction and management of railways on account of two factors. First, there was a shortage of funds. The Secretary of State for India, motivated by orthodox financial principles, acted as a check to the Governments borrowing for public works (including railways). The revenues of the Government faced demands for famines and defense of the North West Frontier (which became important with fears of Russian expansion) and thus did not yield sufficient for railway construction. Consequently mileage did not expand as fast as desired. Secondly, the Famine Commission of 1880, appointed after the severe famines of 1874-79, was of the opinion that to tackle the menace of famine 5,000 miles of railways were immediately required, and the target should be to raise the mileage to 20,000 as soon as possible. as possible. At the same time British merchants pressed for the rapid expansion of railways to encourage wheat exports to England and the import of iron rails and other supplies.

The co-existence of financial stringency with the necessity for accelerated construction led to the revival of company construction in the eighties. Company management of 'state' owned lines was also favored, and when the E. I. R. was purchased in 1879, its management was left with the old company. At first it was felt that the 'state' should construct only "protective" and strategic and generally unremunerative lines leaving the remunerative lines to be constructed by private companies. But since this would have led to the increase of the financial burden on the Government, the Parliamentary Select Committee of 1884 recommended that the 'state' should continue to construct both protective and productive railways, and should try to have self-supporting lines. It suggested that the decision about the agency of construction and management

should be taken according to circumstances. This led to uncertainty and inconsistency and in a few cases management passed between companies and the 'state' a number of times.

The terms that were granted to the companies during this period are known as the New Guarantee System. The lines constructed by the companies would be managed by them but would be the property of the Secretary of State for India, who could terminate the contract after 25 years or at subsequent intervals of ten years on payment of the capital provided by the companies. the interest guaranteed to the companies on their capital was about 3% per cent; and the government retained usually three-fifths of the profits.

During this period construction went on rapidly, averaging 744 miles per year over 1882-1900, and the route mileage increased from 10,069 to 24,752. There were in 1900 about 14,000 miles of broad gauge, about 10,000 miles of meter gauge track and a few miles of 'light' railways. The policy was to have meter gauge 'feeder' lines for the broad gauge 'trunk' lines but it was not strictly adhered to.

The end of the century found India with a fairly well developed and extensive railway network. The heritage of the era of experimentation was 96 different lines open to traffic, administered by 33 railway administrations. The organization was far from satisfactory from the viewpoint of efficiency and economy. Lines were classified into ten groups on the basis of ownership and management into: (1) 'State' lines worked by companies, (2) 'State' lines worked by the 'State', (3) Lines owned by companies under old contracts. , (4) Lines owned by companies under new contracts, (5) District Board lines, (6) Assisted Companies' lines, (7) Princely State lines worked by companies, (8) Native State lines, worked by State Railway Agency, (9) Lines owned and worked by Native States, and (10) Lines in foreign territory.

THE EFFECTS OF THE RAILWAYS

The political impact of railway development in the nineteenth century was enormous. The network of easy communications converted India from a mere geographical expression to a well-knit and consolidated political unit. The efficiency of the army and the civil administration on which British authority rested increased. Economically and socially the impact was even more fundamental. As Marx, in his "The Future Results of British Rule in India", published in the New York Daily Tribune, August 8, 1953, observed: "I know that the English millocracy intends to

endow India with railways with the exclusive view of extracting at diminished expense the cotton and other raw materials for their manufactures. But when you have once introduced machinery into locomotion of a country, which possesses iron and coals, you are unable to withhold it from its fabrication. You cannot maintain a net of railways over immense country without introducing all those industrial processes necessary to meet the immediate and current wants of railway locomotion, and out of which there must grow the application of machinery to those branches of industry not immediately connected with railways. The railway system will therefore become, in India, truly the forerunner of modern industry. This is the more certain as the Hindus are allowed by British authorities themselves to possess particular aptitude for accommodating themselves to entirely new labour, and acquiring the requisite knowledge of machinery". This prophecy has become a reality in the blessings. But they were evidence of the cessation of the stationary state in India. The period of transition to a modern society, painful and unnecessarily prolonged though it may have been, was set in motion. "The acute conservatism and barriers of caste and prejudices were being removed and broken down. Social relationship between persons living widely apart multiplied Many persons began to undertake long journeys,. and the exchange of their views, habits, and thoughts brought about a sense of national cohesion and unity."10 In the realm of production and distribution the rail-ways brought about the breakup of the old self-sufficient economy, a rapid expansion of production for distant markets, the development of export and import trade and a tendency of leveling up of regional price differences. The linking up of different parts of the country accelerated the decline of cottage industries. There was some stimulus also to the development of large scale production. Cotton and woolen textile mills and leather works were established. However, Indian railways did not initiate an era of industrial development as they did in Japan and Germany. Buchanan aptly remarks: "The new means of transport, brought about economic specialization in agriculture and largely substituted factories for handicraft goods; but for many decades most of the factory goods came from outside India, and were made by European labor and capital rather than by Indian."11 This is shown by the fact that the chief ex-ports of India were cotton, wheat and oilseeds and the chief imports were manufactured goods. This was entirely in consonance with the objectives of those responsible for railway development.

THE RAILWAY RATES POLICY

The short sighted objectives and commercial orientation of railway development in India is clearly shown in the history of railway rates. The development of railways' reduced cost of freight movement to nearly one-twentieth of the estimated cost by bullocks. But the rates were handled in such a way that the maximum benefits did not go to the Indian people and economy.12 First, the rates were too high, the objective being to obtain a large income with a small amount of work. The companies were obsessed by the idea that the lines should pay from the very beginning. They did not realize that traffic should be nurtured in the initial stages by low charges. Observers commented on the high rates from the early years. Throughout the nineteenth century we find examples of reduction in rates being accompanied by rapid growth in traffic.18 Mr. Robertson, in his report to the Government of India, in 1902 said that although in money terms rates in India were lower than in England, considering the actual circumstances in the two countries, Indian rates should be 30-60 per cent lower than they were. Secondly, the rate structure was so designed as to favor the import of manufactured goods and the export of raw materials. As indicated earlier, the railways had been conceived as instruments for this kind of 'development'. It cannot be denied that this preference for import-export traffic worked to the detriment of Indian industrial development. The rate structure was tilted against Indian industries. They had to face the twin problems of paying more to the railways for the transport of raw materials and for distribution of their manufactured goods than foreign manufacturers using Indian material and selling in Indian markets. The defense of the companies was that long distance through traffic was cheaper than short hauls, and that their rates merely reflected differences in costs. It was not realized that railways should serve and not dominate the country's economic interest. For example for Delhi low rates were quoted on imported matches from Bombay and higher rates from Ahmedabad, where there was a match factory even though Ahmedabad is three hundred miles nearer to Delhi. Similarly imported sugar could be conveyed 840 miles from Bombay to Kanpur at 13% annas per maund, while Indian made sugar sent 640 miles from Kanpur to Akola paid 184 annas per maund. As for the leather industry the Indian Industrial Commission agreed that "the grant of port rates nearly 50 per cent less than the internal rates. discouraged Indian tanning."14 The United Provinces Government stated before the Industrial Commission that the railways had often not fixed rates in the interest of Indian industries. An incidental effect of the railway rates policy was the concentration in the port towns of the large scale industries that did develop in India, taking advantage of the favorable rates

to and from the interior. 15 These defects in the Indian rates policy ceased to be significant only since the 'twenties of the present century.

With the 'twentieth century Indian railways entered a new era. Following growth of traffic the railways earned a surplus and ceased to be a burden on the Government exchequer. They were now a "running concern". However, they continued to face problems. The speed of movement of freight and passengers was slow and the accident rate was very high. The rolling stock was not adapted to requirements. Mr. Thomas Robertson was appointed in 1902 to inquire into the administration and the working of the railways. Apart from recommendations on technical questions he reported in favor of the extension of railway mileage and the company management of all railway lines in the country. Public opinion in India and the Government were, however, opposed to the lease of all lines to the companies and thus the policy of having a dual system of 'state' and company managed lines continued. Mr. Robertson also recommended the establishment of a Board of three Commissioners as the controlling authority of Indian railways. Consequently the Railway Board was established in 1905 and given the powers of supervision and control vested in the Government in the Indian Railways Act of 1890. In 1908 the powers of the Board were increased and the Railway Department was made independent of the Ministry of Commerce and Industry.

Following deputations from British merchants to the Secretary of State in 1907 complaining about inadequate railway arrangements in India the Mackay Committee was appointed to investigate Indian Railway Finance and administration. Although the committee stated that the equipment and improvement of existing lines should take precedence over new lines, they also recommended that since the country could profitably have 100,000 miles of railways, £124 million annually should be allocated to railway construction and development. This led to a marked increase in the capital expenditure on railways. Over Rs. 110 crores were spent between 1908-1914 and the railway mileage increased to 34,656 in 1913-14. The government continued to acquire ownership of lines of guaranteed companies when the contracts came up for review, except in the case of branch lines constructed under special terms. The management of the lines was left with the old companies under revised contracts.

WORLD WAR I

The weaknesses of the existing railway system were shown during the strain of the First World War. The railways moved large amounts of troops and stores for the Mesopotamia and East Africa campaigns. Repair and replacement of track and stock were neglected, the government being under financial pressure. Capital expenditure on railways was reduced from Rs. 18.4 crores in 1913-14 to Rs. 2.97 crores in 1916-17. Under the stress of war 150 miles of track was dismantled and transported to the Middle East. Under the circumstances the rail-ways could not meet the needs of commercial traffic and the standard of the service also declined. Frequent criticism was voiced in the Legislative Assembly. The criticism gathered strength with the uncovering of a number of cases where the companies had entered into secret agreements and acted against the national interest. Consequently the Indian Railway Committee was appointed in 1920 under the chairmanship of Sir William Acworth.

THE ACWORTH COMMITTEE

The Committee was asked to advise on: (a) the advantages of alternative methods of management of state owned railways; (b) the organization of the Railway Board and the Government control over the Railway administration; and (c) the financing of railways in India. As regards the first of these the Committee was of the view that the Indian railways should be managed not from London, but from India, however, it could not agree on the system of management. The majority report favored state management because: (i) the companies had a relatively small financial stake in the property they managed; (ii) the Government as the owners had left little initiative in the hands of the companies; (iii) the division of responsibility between the Government and the Board of Directors would continue even if management was transferred from English to Indian companies; (iv) the unpopularity of company management in India and the suspicion that the companies neglect national interests; and (v) experience had shown that 'state' management was not inferior in efficiency to company management.

The minority report was in favor of management by companies of Indian domicile because of the inability of the government to raise sufficient funds, the danger of interference from the elected legislatures, and the likely inflexibility of state management. The Committee also recommended changes in the constitution and status of the Railway Board, increasing its

membership and strengthening it with technical staff and the creation of a Department of Communications under a member of the Viceroy's Council.

The most far reaching recommendation of the committee was about railway finances. Under the prevailing system the railways were at the mercy of the general revenue position of the Government. In times of stringency the Finance Member reduced the appropriation of railways for replacement, improvement and extension, "even though they may be in the process of execution." In years of prosperity the appropriations were increased and the railways were urged and expended to spend it within the year. The Committee recommended: "(1) the complete separation of the Railway Budget from the General Budget of the country and its reconstruction in a form which frees a great commercial business from the trammels of a system which assumes that the concern goes out of business on 31st March and recommences de novo on 1st April; and (2) the emancipation of the railway management from the control of the Finance Department."18 The Committee also recommended the establish- ment of a Railway Rates Tribunal, the formation of Central and Local Advisory Committees to give representation to public opinion and the provision of funds for maintenance through the creation of a Depreciation Fund-aspects that had been overlooked hitherto.

The Government accepted the broad principles enunciated by the Acworth Committee. A number of railway lines were brought under state management on expiry of their contracts. The Railway Board was reconstituted, Advisory Committees were set up. Instead of a Rates Tribunal, however, a Rates Advisory Committee with limited powers was appointed. The Government appointed the Railway Finance Committee, consisting of members of the legislature to discuss the suggestion of separation of Railway Finance and to recommend an expenditure program for the next decade. On its recommendations the Assembly in 1932 voted a sum of Rs. 150 crores for capital expenditure on railways for the next five years. In the same year the Inchcape Committee was appointed to recommend measures for effecting reductions in expenditure, including railways. The Committee recommended the appointment of a Financial Adviser and measures for streamlining the administration.

THE FINANCIAL SEPARATION CONVENTION, 1924

Railway Finance was separated from the General Finance in September 1924. The main terms of the Finance Separation Convention were (i) "that the General Revenues shall receive a definite annual contribution from Railways which shall be the first charge on the net receipts of railways" , (ii) "the contribution shall be based on the capital at charge and working results of commercial lines"1" being 1 per cent of the capital at charge of commercial lines plus one fifth of any surplus profits remaining after this fixed charge. The interest on the capital of, and the loss on strategic lines would be borne by General Revenues; (iii) all the remaining surplus up to Rs. 3 crores would be transferred to Railway Reserve. This reserve could be used for certain specified purposes; (iv) A Depreciation Fund based on cost and the estimated lives of assets was also set up. The separation of the Railway Budget was introduced during the present century in connection with the administration of Indian Railways."

The development of the railroad system continued. The mileage increased to 41724 in 1929-30, passengers carried to 634 million and freight carried to 91 million tons. Companies like the EIR and GIPR came under 'state' management. A start was also made with the separation of audits from accounts, and with the divisional type of organization.

THE GREAT DEPRESSION

The Great Depression of 1929-30 had a catastrophic effect on the agricultural economy of India. With the decline in exports and imports and the fall in prosperity traffic on railways plummeted down. The passenger traffic declined from 634 million in 1929-30 to 480 million in 1932-33, and the freight carried from 91 million tons in 1928-29 to 71 milliontons. A perverse policy of raising rates and fares was followed, charges being raised in 1930, 1932 and 1936. The decline in traffic was aggravated by the emergence of road competition. The result was a complete reversal of the railway surpluses of the last three decades. The railways were actually unable to meet the obligations under the Separation Convention. In 1931 the Government appointed a Retrenchment Committee to suggest measures for economy. Its recommendations related only to economies in administration. In 1932 the Pope Committee was appointed to suggest economies in working of railways. The Committee recommended cuts in organization and staff, and laid stress on regrouping of rail-ways into larger units. In fact most of the economizing was done at the

expense of maintenance and renewal expenditures. With the end of the worst part of the Depression the corner was turned about 1936-37 and over 1937-40 the surplus totaled Rs. 8.4 crores.

In 1936 the Wedgwood Committee was appointed to examine the financial position of state owned railways and to suggest measures for improvement in earnings. The Committee agreed with the recommendations of the earlier Committees and suggested the establishment of a Central Economy Research Committee. An ultimate grouping of railways into eight groups was also recommended. Suggestions for a suitable scheme of railroad coordination were also made. It was estimated that rail-ways were losing a traffic of Rs. 44 crores per annum to road transport. Railways should be protected from unfair competition from road transport through route licensing, fare fixing and regulation of rates. The Committee also recommended participation by railways in road transport. However, no significant progress was made in these directions before the outbreak of the World War.

WORLD WAR

The World War imposed a severe strain on the railways. In addition to movement of troops and supplies, civilian passenger traffic and commercial goods traffic also rose rapidly with the growth of Indian industrial production. An acute shortage of supplies and the exigencies of war led to the postponement of maintenance and renewals except the most essential. In addition, track, rolling stock and other supplies were sent to the Middle East. Difficulties increased after 1941 with the entry of Japan into the War and the conversion of India into the base for South East Asia. Contributory factors were the diversion of road traffic to railways with petrol and truck shortage, and the use of rail-way workshops for munitions production. As a consequence of these difficulties the standard of service deteriorated and there was acute overcrowding of passenger trains and long delays in goods transport. The period was, however, one of financial prosperity, gross traffic receipts rising from Rs. 94 crores in 1938-39 to Rs. 226 crores in 1945-46. The railways contributed Rs. 158 crores to the General Revenues over 1939-46, and the Railway Reserve Fund increased by Rs. 76 crores over the same period. During the War period part of the Separation Convention was suspended and it was decided that the surplus would be allocated on the basis of the needs of the railways and the General Revenues.

RAILWAYS SINCE INDEPENDENCE

The Partition led to painful readjustments in the Indian railway. About 6,950 miles or 19 percent of the track went to Pakistan leaving 34,083 miles in India. The rolling stock was divided on the basis of mileage and traffic. On account of communal trouble there was a large transfer of staff. India lost a lot of skilled personnel and faced a shortage of drivers and mechanics. One result of the Partition was a redistribution of traffic in favor of Bombay, which filled the place of Karachi. A 149 mile rail link had to be constructed. However, the dislocation was soon smoothed out.

A Railway Inquiry Committee, under the Chairmanship of Mr. H. N. Kunzru, reported in 1949 on ways and means of securing a rise in earnings. It found that efficiency of labor on railways had declined by 33-40 percent as a result of lack of discipline and a suitable supervisory staff and the prevalence of an atmosphere of uncertainty and insecurity about tenure of jobs. Measures to increase the efficiency of the staff were suggested. The Committee was not in favor of regrouping of railways but recommended changes in the organization of the Railway Board. The Government accepted most of the technical recommendations of the Committee, but not that against regrouping.

The Finance Separation Convention of 1924 was revised in 1949. The old Convention, it was felt, did not allow the railways to build up adequate reserves in prosperous years, surpluses being largely applied to benefit the General Revenues. The Revised Convention provided that: (i) separation of Rail-way Finance from the General Revenues would continue with the taxpayer being accorded the status of sole shareholder in the railways; (ii) the General Revenues would receive a fixed annual dividend of 4 per cent on capital at charge (except that in strategic lines); (iii) the contribution to the Depreciation Fund was fixed at a minimum of Rs. 15 crores per year and a Development Fund set up to finance passenger amenities, employees' welfare and the construction of new remunerative lines. The revised Convention was to operate for five years. It was amended in 1954 to enable smooth working and development of railways. The basis of the calculation of the fixed 4 percent dividend was modified; the annual contribution to Depreciation was increased; the scope of the Development Fund was increased; and the cost of construction of new lines charged to capital from the start. The Convention may be regarded as a step forward. Depreciation and Development have been given an explicit and definite recognition. Welfare of employees and users has been duly considered. The new basis of division of Railway surplus allows estimation of commitments for the future, and enables planning and execution of programs for development.

However the fixed contribution of 4 percent to General Revenues implies a rigidity which might be embarrassing if the present surplus position were to change. The Railway Convention Committee had suggested in 1960 that for the period 1961-66 the rate of dividend payable by railways be increased to 4% per cent and the appropriation for Depreciation be raised. Another recent development of major significance has been the regrouping of Indian Railways. With the Partition the North Western Railway and the Bengal Assam Railways were broken up into uneconomic units. Further after the integration of the princely states the various State Railways of all sizes were added to the Indian Government Railways. In 1950-51 there were 35 railway systems in the country. In 1950 the Railway Board embarked on a scheme of organizing the railroads into six zones determined on the principles that every zone should: (i) serve a compact region, (ii) be large enough to have personnel and resources of appropriate quality and (iii)) be set up with the minimum of dislocation. The Southern, Central and Western zones were established in 1951, and the Northern, North Eastern and Eastern Railway zones in 1952. The South Eastern Railway was carved out of the Eastern Railway in 1955 and the North Eastern Railway split into two in 1958. Four of the eight zones have a mileage of over 5000. The smallest, the North Eastern Frontier Railway, has a route mileage of less than 2000 miles. The grouping has been criticized on the ground that it has not led to any economy of expenditure or increase in efficiency, and that the demarcation was not carried out on the accepted principles- some zones are too big and others too small. The larger size of the zones, it is said, makes headquarters supervision too remote and unwieldy. The advocates of regrouping have, however, argued that it has enabled intensive use of scarce rolling stock and skilled personnel, an avoidance of duplication of work, smaller hitches at interchange points within the same zone. The existence of telecommunication facilities within the railways leads to little unwieldiness even in the larger zones. Thus re-grouping appears to be justified, even though all its advantages may not have been fully exploited.

RAILWAYS AND THE PLANS

The two Five Year Plans have affected the Indian Railways in two ways. First, the expansion and development of railways is part of the National Plan and is integrated with it. Secondly, the vast changes in the Indian economy have created a huge demand for the services of railway transport. The total expenditure on railway programs (including on account of depreciation)

was Rs. 432 crores in the First Plan and Rs. 1121 crores in the Second Plan. In the First Plan the main emphasis was on rehabilitation and renewal of worn out equipment that had been overdue since the Second World War. A sum of over Rs. 250 crores was spent on rolling stock and machinery, and Rs. 64 crores on tracks and bridges. The indigenous production of locomotives started in Chittaranjan in 1950 and in the Tata Locomotive plant was developed and the Perambur coach factory went into production in 1955. The emphasis in the Second Plan shifted to expansion of rolling stock and to augmentation of line capacity to meet increased demand generated by the rise in industrial and agricultural production. The expansion of capacity has been largely confined to lines to meet urgent operational requirements of the railways or in connection with the expansion of iron and steel and coal production. As a result 1300 miles of track has been doubled, electrification of 800 miles has been completed and 1200 miles of new track has been constructed. The number of locomotives has risen from 8461 in 1951 to 10554 in 1961, of coaches from 20502 to 28171 and of wagons (in terms of 4 wheelers) from 222441 to 341041. Despite these developments the railways have not been able to keep pace with the increased demand for their services. The elasticity of demand for transport services is significantly higher than unity. The general growth of the economy, the strategy of economic development, emphasizing heavy industries, that has been followed and the increase of industrial production by 94 per cent and of agricultural production by 41 per cent between 1951-61 has led to an immense growth in traffic. The number of passengers carried increased from 1284 million in 1950-51 to 1624 million in 1960-61, and freight carried from 91.5 million tons to 154 million tons over the same period. Measured in ton miles the freight traffic has increased by more than 100 percent since the average distance per ton carried has grown. The Second Five Year Plan estimated the shortage compared to requirements to be about 10 percent for rolling stock and 5 percent as regards line capacity. The strain on the railways has led to difficulties being experienced in the movement of coal and in the movement of raw materials to the new steel plants. The effect of a failure in the transport of essential raw material and fuel on the growth of industrial production cannot be stressed too much.

The railways are experiencing a period of prosperity. Their gross earnings have increased from Rs. 290 crores in 1951-52 to Rs. 458 crores in 1960-61, while working expenses have risen from Rs. 194 crores to Rs. 326 crores. During the decade the railways contribution to General

Revenues was about Rs. 417 crores and the surplus between 1954-55 and 1960-61 was about Rs. 100 crores. About 60 per cent of the gross revenue of the railways comes from freight traffic and 30 per cent from passen-ger traffic, the remainder consisting of miscellaneous sources. About 90 per cent of the passenger revenue is from the III class passengers, while of the revenue earning goods traffic about 30 per cent comes from coal and another 17 per cent from grains and oilseeds.21 The railways continue to be plagued by the tradi national problems of ticketless travel, corruption, pilferage and waste.

THE FUTURE

The development of the Indian railways in the next few years is likely to continue on the lines of the last decade. The volume of freight traffic is expected to increase by 59 percent to 245 million tons by the end of the Third Plan. Over 2/3 of the 91 million ton increment would come from coal (41 million tons) and raw materials for the steel plants (21 million tons). A development program for railways of Rs. 1325 crores is consequently envisaged for the Third Plan. Increase in rolling stock, doubling of 1600 miles of track, electrification of 1100 miles and Construction OP 1200 Mills OP New Links Are the Main Features OP This Program.

ROADS AND INLAND WATERWAYS

A systematic history of roads and road transport is missing. From the little research available on the nature of long-distance trade before the British came to India, it is fair to conclude that good and safe roads were a scarce resource in pre-colonial and early colonial India. At least partly, the poor condition of the roads reflected limited engineering capability in bridging the numerous rivers. The Company restored and constructed some major roads for military purposes. But regular allocation of funds for roads did not begin until the 1830s.

Early nineteenth-century examples of travel and cargo transport illustrate well the huge cost of road carriage. ‘There were no metalled roads,’ writes one historian of the overland grain trade in the western Gangetic plains, ‘and the only carriers were the Banjaras. That the movements of grains so carried were small we can see by the very considerable difference in prices ruling in adjoining districts.’ 10 During an 1804 famine in the Doab, wheat sold in Aligarh at three times the price prevailing in Bareilly, less than a hundred miles away, and yet the cost of transporting wheat from Bareilly was so great and the quantities so small that the starving population of Aligarh had to wait

for grain carried upstream by the Ganges from places 600 miles away. In the western Deccan, road transport not only took a long time but also involved wastages. The transport from the fields to the port in Bombay, a distance of 300 miles, took two to three months to cover in bullock carts. The bullocks of one cart had their muzzles buried in the cargo of the cart in front, eating the cotton. The cargo was adulterated with dirt and other mixtures to make up for the wastages. In the central Indian uplands, especially the region between Mandla and Jabalpur, which was strategic for its location in the middle of India, dense forests and the fear of tigers made it impossible to travel for all but the largest parties.

In some of these cases, the railways solved the problem. Investment in roads in general, however, continued to be a relatively low priority. Road length grew at a much slower pace than the railways. In 1931, the length of metalled roads as a ratio of the population (1000 persons) was as low as 0.4 miles. For comparison, the ratio was above one in much of contemporary developing Asia (1.5 in Ceylon and 2.2 in Malaya). If the public works in colonial India were biased in favour of the railways at the cost of roads, this bias derived from three things. First, road construction was considered too costly given the terrain, the rivers, and the high repair costs due to the monsoons. Secondly, roads brought the government no monetary return whereas the railways did. The government did not seriously explore involving private enterprise in constructing a network of tolled roads. Third, the lobbies such as the Lancashire mills that pushed the government into investment in modern transportation wanted cheaper long-distance bulk carriage. Possibly, the priorities of public investment in transportation increased inequalities between long-distance and local trade. There was increasing inequality also between places located on the railways and those located at a distance from them because the road link between places located far away from the railways and the nearest station continued to be poor.

In northern and eastern India, the navigable rivers had always been the means of transportation of cargo. River traffic was cheaper than roads and carried larger volumes per head. But the role of rivers in long-distance trade was more or less confined to the Gangetic plains. The main traffic here connected Bengal with western and northern India via Mirzapur. Cargo went along the Ganges up to Mirzapur and then was carried overland more or less along the current Bombay-Agra railway line down south. This traffic was of great antiquity. It is known to have declined in the nineteenth century in competition with the railways.

In one sphere, however, river transportation ruled unchallenged until 1947, and that was the traffic between Bengal and Assam. Steamboats on the Brahmaputra were the crucial means of transporting tea and garden workers. In the preceding century, railway links developed, but these remained 'feeders' to the river highway. It was only after the Partition in 1947 that a direct rail connection opened (the 'Assam link' in 1949) between Calcutta and Gauhati. Generally speaking, in eastern Bengal and Assam, a transportation system developed in which rail, road, and boats served each other rather than competing.

PORTS

The ports that carried the bulk of the foreign trade in the colonial period were new sites where railways and modern harbours converged, for example, Bombay, Madras, Calcutta, Karachi, and Rangoon. Each served as an export outlet for the products of a vast hinterland. The two western Indian ports enhanced their trade manifold with the American Civil War (1861–5) and the opening of the Suez Canal (1869). After that, Calcutta and Bombay also grew to become industrial centres. World War I, while upsetting private businesses through these ports, emphasized their military importance. The Bombay docks saw a modernization drive in the early interwar period.

These modern hubs of maritime trade did not begin with a welldeveloped infrastructure. Indeed, their nineteenth-century history demonstrates the great indifference of the local government, the public works, and even the merchant marine towards infrastructure. Even as maritime traffic in Calcutta increased fourfold between 1833 and 1863, the port lacked all-weather and deep-water docks with upto-date systems of loading and discharging ships, that is, wharves, jetties, landing stages, and steam or hydraulic cranes. The look of the harbour had not changed since the eighteenth century. Much of the harder work was done manually with the help of low-wage workers. This state of things received a rude jolt in the devastating 1864 cyclone in Calcutta when ships were torn from their mooring and tossed around in the floodwaters like toys before their wrecks parked in the heart of the European districts of the city. A few months after the 1864 cyclone, the furious merchants of Calcutta issued a report highly critical of the port, and serious efforts to build a modern dock began only after this shock.

POSTS AND TELEGRAPH

The foundations for a government postal system were in place before 1858. But it became a widely used utility only in the late nineteenth century. The process was led partly by the opening of post offices in semi-rural areas. More than that factor, it was driven by the demand for the services of the post office. Migration and money orders, for example, were closely interdependent. In safety, cost, and wide reach, nothing like the postal money order existed in pre-British periods for the remittance of individual savings within India. As a recent study of postal money orders has shown, in the first decade of its operation (1880–90), the business grew by almost 20 per cent per year and continued to grow at a brisk rate. The post office was not altogether comfortable with having to handle such large sums of money, but the service was just too crucial for the enormous numbers that were leaving home for work elsewhere. Money orders were a business for the post office. For the majority of migrants, who were poor wage earners, they were a 'lifeline'.

Already in 1849, the Company had decided to construct a telegraph system along with the railways beside the railway lines. The telegraph became an urgent necessity on account of tensions on India's western frontier (the Afghan war) and the eastern frontier (the impending war with Burma). The first line between Calcutta and Diamond Harbour opened in 1851 and was immediately used to send shipping news from the coasts to Calcutta. The major lines were completed before 1855. The remarkable speed owed to strategic needs and Lord Dalhousie's interest in the scheme.

The telegraph was a private enterprise in England and America and a state enterprise in continental Europe. In India, it turned out to be a state enterprise for military reasons, despite Dalhousie's general aversion to state monopolies. By 1857, the telegraph had shown itself to be an indispensable military tool in several conflicts, rebellions, and wars of annexation that distinguished Dalhousie's reign. Consequently, the mutineers saw it as a symbol of evil in 1857. With a vengeance, they destroyed telegraph establishments wherever they could and, to their detriment, never used it to communicate amongst themselves. As they began to retreat, the restored telegraph lines became powerful tools of combat in the hands of the government troops. With this lesson behind it, the beginning of Crown rule saw a massive expansion of the telegraph system both within the country and between India and Europe. From then onwards, the economic and private uses of the telegraphs began to overwhelm strategic needs, leading to rapid growth in the usage of the system.

UNIT V NATIONALIST CRITIQUE

DADABHAI NAOROJI

In the summer of 1855, a thirty-year-old Dadabhai Naoroji set eyes on Europe for the first time. Like many Indian travelers of his era, Naoroji was utterly stunned by what he saw. In France, he marveled at the prosperity of its countryside and the wealth and technological sophistication of its cities. And London, the capital of the world's mightiest empire, made Naoroji's native Bombay seem in comparison like an impoverished provincial backwater. It was like "entering a new world," a place far removed from the penury, deprivation, ignorance, disease, and starvation that stalked so much of the Indian subcontinent.

Naoroji's visit to Europe brought out the stark reality of India's comparative poverty and lack of development. It ignited the first sparks of inspiration that pushed him to investigate Indian poverty, which included the drain theory, the idea that British colonialism was directly impoverishing India and bringing about mass famine. Over the next several decades, Naoroji, based in London, talked about the awful impoverishment and powerlessness of his fellow Indians. In 1894, as a member of Parliament (MP), Naoroji declared from the floor of the House of Commons that colonial policies "made the people of British India the poorest in the world."

Since the late 1700s, as Naoroji acknowledged in his speeches, numerous Britons and Indians had observed a drain of wealth from the subcontinent: the steady outflow of capital and resources facilitated by colonial policies. Naoroji believed that India lost as much as one-fourth of its annual tax revenue to Britain, which crippled development through a fundamental lack of capital and whittled away the average Indian's already meager wages. But more than simply presenting hard-hitting statistics and anticolonial polemics, Naoroji's scholarship set forth ideas for India's economic development. He hoped that one day Indians would be able to enjoy the same prosperity and contentment he witnessed in Europe. The drain theory, in some critical ways, helped Naoroji become India's first proponent of modern economic reform.

THE DRAIN OF WEALTH: EXPOSING INDIAN POVERTY

To champion economic reform, Naoroji had to lay bare the reasons behind India's dire impoverishment. He amassed data and formulated arguments that made it impossible for imperial officials to ignore.

Beyond the direct transfer of revenue to Great Britain, Naoroji documented how the Indian exchequer was starved through excessively high interest-rate loans, especially for railway construction. He noted how Indian taxpayers paid for imperial military adventures—for example, the 1868 British expedition in Abyssinia, hardly necessary for India's defense—and other costly frontier wars waged by viceroys eager for imperial glory. There were other means through which Britain enriched itself via Indian blood and treasure. Naoroji believed that policies meant to strengthen the rupee, like closing Indian mints to the free coinage of silver and moving to a gold standard, made the average Indian pay as much as 45 percent more in taxes. Exchange policies, meanwhile, meant that the rupee lost one-fifth of its value when converted into British pounds.

British colonialism thus created a perfect storm. India was starved of capital, which reduced average wages. At the same time, as Naoroji demonstrated in a paper in 1876, prices rose, not because of prosperity but scarcity. He faulted railway projects for exacerbating already grim circumstances. These projects drew agricultural laborers to construction gangs, reducing local agricultural productivity. And then, once completed, this infrastructure accelerated the drain of wealth: through repayment of exorbitant railway loans, employment of large European staffs, and the more efficient transfer of Indian resources for export to Britain. The railway, that harbinger of modernity and progress that Britain supposedly bequeathed to its Indian subjects, was only worsening the chronic spiral of impoverishment. It was designed so that Indians "should slave and others eat."

Between the 1860s and 1880s, Naoroji harnessed modern statistical methods to illustrate the appalling nature of Indian poverty. He tabulated the first-ever estimate of the country's annual per capita income: a shockingly meager £2 per year (in today's terms, this could be as low as £200 or Rs. 20,000). Through forceful comparisons, he demonstrated that £2 was barely enough to keep the average Indian alive, and that the Indian government spent more money to provide basic sustenance to a prisoner. "Even for such food and clothing as a criminal obtains," he declared, "there is hardly enough of production even in a good season, leaving alone all little luxuries, all social and religious wants, all expenses of occasions of joy and sorrow, and any provision for bad season."5 Such grinding poverty, with the vast majority of Indians living on the precipice of starvation, explained the frequency of mass famine in the subcontinent. Naoroji asked in 1870, "Can it then be a matter of any surprise that the very first touch of famines should so easily carry

away hundreds of thousands as they have done during the past twelve years?"6 It is no coincidence that Naoroji's investigations of the drain theory and Indian poverty coincided with a spate of famines which killed millions of Indians. With each new famine—Orissa in 1866, Madras in 1876, Bombay in 1896—his tenor became more radical. How could this carnage be stopped? Political change was a prerequisite, but so was economic development.

TOWARD REAL FREE TRADE: CAPITALISM AND INDIA

Naoroji had a complex relationship with capitalism. As he aged, his political views became pronouncedly more socialist. During parliamentary campaigns in Britain, he denounced capitalist exploitation of labor and championed labor rights. Naoroji was a close friend of Henry Hyndman, the so-called father of British socialism: the Indian parliamentary candidate regularly spoke at meetings organized by Hyndman's Social Democratic Foundation, oftentimes linking the exploitation of British labor with Britain's colonial exploitation of India. In correspondence with an New York-based journalist, meanwhile, Naoroji discussed how wealthy American business interests were profiting from the recent Spanish-American War.

Naoroji, therefore, became quite outspoken of how capitalism worked as the handmaiden of imperialism. He spoke of capitalism as "European greed," noting that in relation to the question of Indian poverty "there is no remedy for all our evils till the fundamental evil of greed is remedied." In many ways, Naoroji's views complemented those of Karl Marx and J. A. Hobson. His drain theory was applied by other critics of capitalism, ranging from European socialists to American progressives.

But there was a fundamental difference. Naoroji was an active participant in the global capitalist economy. For several decades, he operated a business firm, Dadabhai Naoroji and Co., in the City of London, which dealt with the import of Indian cotton and the export of British mill machinery to India. Equipment for Ranchhodlal Chhotalal's first cotton mill in Ahmedabad, for example, was originally purchased from Great Britain through Dadabhai Naoroji and Co. (Unfortunately, the ship that carried it sank before arriving in India.)

In the late nineteenth century, this seeming paradox—a fierce critic of capitalism deeply involved in global capitalist networks—was actually quite common. Henry Hyndman, who condemned the "infamous capitalist system" in his letters to Naoroji, was a City of London

speculator with significant investments in the printing industry.8 As a member of the Fabian Society and someone who knew both Sidney and Beatrice Webb quite well, Naoroji preferred a gradualist rather than a confrontational approach to achieving socialist change.

And so, Naoroji was an advocate of reform instead of thoroughgoing revolution. At the outset of his investigations into Indian poverty, he believed that British foreign investment could play a critical role in India's development, and that it was necessary for beneficial public works, including railways. But he eventually changed his views, noting the unfair power relations between Britain and India. He quickly realized that any foreign investment from Britain would come with terms prejudicial to India.

As such, he sought out capital and enterprising capitalists in India itself. The princely states held great promise. Wealthy merchants from princely states, he noted, controlled much of the economy in Bombay. Certain progressive rulers, such as Bhagvatsinhji in Gondal or Sayajirao in Baroda, promoted the development of their states and invested in industrial and commercial ventures. As dewan of Baroda in the 1870s, Naoroji contributed to this process, shoring up the state's finances and revising tax policies so that ordinary Indians could augment their savings. He saw with satisfaction how British employees worked under Indian supervision in Baroda, a reversal of the usual power dynamic in British India.

For all these reasons, Naoroji came to believe that Indian princely states were more prosperous than British India. Here, indigenous merchants and capitalists operated with a freer reign. Furthermore, princely states were partially buffered from the drain of wealth to Great Britain and enjoyed more equal trading relationships. These states, he declared, "naturally get back their imports equal to their exports, plus profits."

For Naoroji, this was as close as India could practically get to that great nineteenth-century ideal: free trade. Like Adam Smith, David Ricardo, and Richard Cobden, he believed that free trade was in the interest of the average man or woman as well as the nation at large. Although a socialist, he also could identify as a free trader. "I like free trade," he told a Bombay audience in 1876. However, "free trade between England and India in a matter like this is something like a race between a starving, exhausting invalid and a strong man with horse to ride on." Excessive taxes—Naoroji estimated that the tax burden placed upon an Indian was twice the amount levied upon a

Briton dramatically diminished available capital. Political pressure from Manchester industrialists, meanwhile, led the British and colonial governments to impose crippling tariffs on Indian textile goods, and this high tariff was not reciprocated for British textile goods flooding the Indian market. Instead of this decisively unfree trading relationship, Naoroji desired real free trade, equitable and mutually beneficial commerce between India and the world. As Naoroji steadily embraced more radical positions and dropped any pretenses of imperial loyalty, he began to define India's future relationship with Britain purely in terms of equal trade. He argued that Britons could "find their true benefit in trade with a prosperous and vast people" rather than perpetuate India's colonial bondage.

"To trade with India, and not to plunder India"—this was the Indo-British relationship Naoroji wanted in the future.

BACK TO THE DRAIN: REFORM AND EDUCATION

Dadabhai Naoroji began searching for ways to turn a colonial Indian economy into a robust modern economy. As a counterpart to the drain theory, he introduced the powerful idea of a "moral drain." Indians' lack of professional and educational experience, he explained, resulted in a paucity of human capital. Britons did not simply control the political reins of India; they also ran its most powerful companies, staffed technical positions, and monopolized educational opportunities. "A three-fold wrong is inflicted upon us," Naoroji declared before the Calcutta Congress in 1906, "depriving us of wealth, work, and wisdom . . . in short, [of everything] worth living for." Thus, Indians could not build up their own storehouses of knowledge and experience. "All the talent and nobility of intellect and soul, which nature gives to every country," he noted elsewhere, "is to India a lost treasure."

How could India recover this lost treasure? Naoroji sketched out a few ideas. He continued to promote the accumulation and deployment of indigenous capital. When Jamsetji N. Tata sought foreign capital for his iron and steel works, Naoroji urged him to reconsider and instead look to the princely states for financing. Naoroji also became a human resources manager of sorts, taking an active role in employing European talent under Indian supervision. This was particularly the case for Indian-owned cotton mills, where he recommended and selected European technicians to be dispatched, facilitating the transfer of knowledge and skills to Indians

Although Naoroji was certainly not a proponent of autarky, he believed that colonialism necessitated some degree of economic self-reliance. As early as 1876, he articulated the need for something like swadeshi (economic self-reliance). He felt Indians had been "blind to [their] own national interests and necessities" by allowing the drain to continue, instead of supporting, encouraging, and preserving "in every possible way, every talent, trade, industry, art, or profession among the natives." (To be clear, Naoroji did not endorse a boycott of foreign goods.) By the dawn of the Swadeshi Movement in the early twentieth century, Naoroji upset some moderates in the Congress with his enthusiastic support. ''Swadeshi' is a forced necessity for India in its unnatural economic muddle," he said at the 1906 Calcutta Congress. 15 One of the first tasks he undertook upon returning to India for the 1906 Congress session was to inaugurate a swadeshi emporium in Bombay.

But swadeshi was not enough to tackle the moral drain. India needed to augment its human capital through improved educational opportunities. Naoroji therefore was one of the earliest proponents of state-supported free, universal education. He demanded this as early as 1882, noting how both poverty and ignorance hindered progress and development. "Wretched as [India] is materially," he stated, "still more wretched is she educationally."16 This was an intensely personal cause for him: as a child in the 1830s, the Bombay Native Education Society, one of India's first attempts at state education, had lifted him out of poverty and provided him with free primary and secondary education.

Naoroji championed all forms of education. He was a pioneer of female education and helped organize Bombay's first network of Indian girls' schools in the 1840s and 1850s. A staunch supporter of women's rights in both India and the United Kingdom, he argued that "woman had as much right to exercise and enjoy all the rights, privileges, and duties of this world as man." Thus, Naoroji ensured that women in his family were highly educated and entered the workforce. His daughter and granddaughter studied medicine in Great Britain and became doctors in India, and his two other granddaughters graduated from Oxford and the Sorbonne.

Like several other early nationalists, Naoroji advocated expanding higher educational opportunities for Indians, which he believed would facilitate the growth of industry and commerce. In the 1880s, he helped raise an endowment for what would become the Victoria Jubilee Technical Institute (VJTI). Institutes like VJTI, nationalists hoped, could impart scientific and technical

training to Indians and thereby dislodge the European monopoly on technical and managerial positions. Naoroji was closely involved in the affairs of Indian colleges and universities, especially that of his alma mater, Elphinstone College.

As a longtime resident of London, Naoroji mentored and supported hundreds of Indians who came to the imperial capital for education and training. For example, he funded the work of Shankar Abaji Bhisey, a brilliant Maharashtrian inventor who developed a mechanical typecaster which promised to revolutionize the printing industry. (Henry Hyndman, Naoroji's fellow capitalist critic, was another enthusiastic investor who spent a substantial amount of his own capital.) Naoroji also supported Indians studying glassmaking, textile manufacture, modern agricultural techniques, specialized medicine, law, and modern methods of education, as well as those preparing for the civil service examination. For young recipients of scholarships to study in the United Kingdom whether from the J. N. Tata Endowment or princely states Naoroji was often the first contact when they arrived on British shores. He counseled them on their courses of study, loaned them money (much of which, as Naoroji's correspondence indicates, was never paid back), helped them overcome acute homesickness, and even arranged occasional Indian meals for them.

Why did Naoroji take such a marked interest in the lives of these Indian students? The answer is quite simple: he recognized that they represented the best hope for India's economic regeneration. Many of them would return to India with the knowledge and skills necessary to pioneer industries, manage businesses, or further develop professions like law and medicine. For this reason, Naoroji made sure to inculcate in them a sense of political consciousness, sending them copies of his papers on Indian poverty and inviting them to political meetings. Indeed, many of these students went on to form the next generation of nationalists.

A MORAL DRAIN: THEN AND NOW

Dadabhai Naoroji's educational advocacy is perhaps the most relevant aspect of his career from the perspective of economic reform today. Although India has made impressive progress since 1991 in terms of economic growth and the expansion of educational infrastructure, poverty and ignorance continue to severely impede the achievement of India's full potential. Despite aspirations for worldclass universities and institutes of excellence, higher education remains encumbered by

political interference, Kafkaesque bureaucracy, subpar facilities, inferior instructional quality, and outdated pedagogical methods.

And higher education is India's bright spot. Primary and secondary education, those essential building blocks to producing human capital, are in an utterly dreadful state. In many ways, the moral drain continues in today's India. It is no longer orchestrated by a foreign power but by independent India's own sclerotic bureaucracy, excessive centralization and politicization, and lack of clear political will among its leaders. It does not take a professional economist or political scientist to realize that India's goal of becoming a $5 trillion economy will stay a mere pipe dream as long as the vast majority of Indian students continue to suffer from subpar primary and secondary education. And so, the early nationalists' call for improved education, articulated over 150 years ago, remains all too relevant today.

When Naoroji made that fateful visit to Europe in 1855, he was exposed to an educational revolution. At University College in London, where he became a professor of Gujarati, he witnessed the creation of modern research universities built on merit and talent. In subsequent decades spent in the United Kingdom, he observed how government-supported free education lifted the children of the poor and the working class out of dire poverty, allowing Britain to diversify its economy and generate more wealth. In speeches and writings, Naoroji identified the widening chasm between educational opportunities in British India and those in Great Britain and other parts of the British Empire. Lack of proper education, he noted, was making India fall even further behind the rest of the world.

Perhaps the best way to remember Dadabhai Naoroji and his early nationalist peers is to return to the fundamental link they identified between poverty and education, and between financial capital and human capital. Naoroji and his colleagues men such as Gopal Krishna Gokhale and Mahadev Govind Ranade understood the transformative qualities of education: how knowledge and skills development could help weaken the foundations of colonial rule, embolden Indians into new ways of political and economic thinking, and give Indians the tools to stop the drain of wealth. Looking to countries like Japan, the United States, and the United Kingdom, these early nationalists realized that the path to national prosperity began in the classroom. Education was the key to true economic reform in Naoroji's day. It remains the key to true economic reform today.

AMARTYA SEN

The purpose of this paper is to propose a theoretical argument for incorporating the issue of social justice, as articulated in Amartya Sen's capabilities approach, in evaluating the capitalist models of higher education. Building on existing work on the capabilities approach within education, it is emphasised that the notion of capabilities provides a useful theoretical and conceptual framework for a more meaningful understanding of issues relating to education.

If variety and diversity underpin capitalist models, one of the main characteristics of the Anglo-Saxon capitalist models is the importance of competition. Higher education in capitalist models is also driven by competition and, if one uses the viewpoint of global university ranking, the competitive education model is considered the most successful.

Neo-classical economic principles are at the core of the theoretical framework that moulds the social policy on education in the Anglo-Saxon models. Competitive market conditions are considered the most efficient answer to provide quality higher education. The theory of human capital 3 prevails in capitalist economies, where "as in any advanced economy, a high average standard of living in the Anglo-Saxon countries depend on heavy investment in human capital".

The second main paradigm of education pertains to the rights-based discourse according to which education is perceived as a human right. In keeping with their liberal, democratic political and social systems, Anglo-Saxon education models embrace this view, although, as we will argue, it is done in a manner that is incomplete. Indeed, the very notion of rights are called to account by Sen, who points out that it leads to an incomplete understanding, and therefore execution, of these rights.

The Capability Approach has emerged as an alternative to standard economic theory by incorporating ethical principles to the capitalist model. Sen's approach has had tremendous impact on changing the perspective on poverty, inequality and human development generally. He builds his Capability Approach by criticising traditional welfare economics that are based on utilitarian assumptions. He opposes the conflation of wellbeing with income or with utility, an argument upon which much of the human capital theory of education is founded. He also disagrees with the neo-classical view of human motivation and its corresponding conclusions on human behaviour, which is also conceptually inseparable from the Anglo-Saxon higher education models.

Sen's work has also been praised for broadening the informational base of economic and social evaluation, refocusing on people as ends in themselves, rather than as means to economic activity. By recognising human heterogeneity and diversity, he has drawn attention to group disparities and has embraced human agency. He advocates participation, public discussion and deliberative democracy in decision-making processes, as well as when forging goals, making choices and influencing policy.

In order to underline the inadequacy of neo-classical economic foundations shaping educational policy from the point of view of justice, we begin by discussing the standard theoretical framework and its impact on the instrumental view of education, while presenting Sen's criticisms. We turn next to the rights-based view of education and its conceptual and practical limitations.

In section two we present Sen's view, by first listing the roles he attributes to education, then more specifically, explaining how the Capability Approach fills the gaps in neo-classical educational social policy. His approach is not as much an alternative as an improvement on the two views, stemming from his more faithful representation of people's wellbeing, as well as of the potential of education in human development.

EDUCATION AND COMPETITIVE MARKETS

THE NEO-CLASSICAL THEORETICAL FRAMEWORK

Neo-classical economic theory relies on the assumption that people, the economic agents, are rational. Stating that people are rational implies, according to utilitarian foundations, that they are consistent in their choices and that they seek to maximise their utility. In seeking to be more scientific, mainstream economic theories are thus based on the conception of human beings as representative agents, in other words, all alike as rational maximisers. Economists do not question the preferences that lead agents to choose the best possible option, but assume that agents are consistent in their choices. It is thereby agreed that man can be characterized by his single-minded pursuit of profit. This conception of human motivation and its role in the analysis of social achievement are necessary to uphold the view that markets provide the best outcomes for individuals and for society as a whole.

Since Adam Smith made the case for the government to undertake the task of educating the people, rather than leave it to market forces to impose the price, the perception of education has undergone many changes in economic theory, as well as in social policy. In the case of higher education, it is incorporated, by contemporary neoclassical theory, in its competitive market model, subject to market forces. The resulting social policies match the free market theory.

AN INSTRUMENTAL VIEW OF EDUCATION

The Anglo-Saxon social policies relating to education are based on neo-classical utilitarian economic theory that promotes the instrumental view of education, as well as its market-oriented implementation. In order to understand the limitations of this perspective, it is important to fully grasp the utilitarian theory on which it is grounded. Using social justice as the metric of evaluation for universities, and in this respect, Amartya Sen's capability approach provides the best tool to highlight, some of the shortcomings of the existing views on education in capitalist Anglo-Saxon models, as well as to delve deeper into its underlying theoretical foundations.

The competitive model has influenced the conceptual and theoretical framework concerning education. The dominant theory developed within this framework is the human capital theory, advanced in the 1960s by Gary Becker and Theodore Schultz. The instrumental value of education is at the core of the neo-classical paradigm that paved the way for this theory, which is well established in standard economic theory. It values education in terms of its contribution in developing individual skills, which in turn increase both private and social returns. Education provides skills and knowledge that make people more productive and therefore more suitable for higher wages. Education is thus considered as an investment whose returns are calculated through productivity gains and the resulting increase in wages. These individual returns, as well as the collective returns, calculated in terms of economic growth as a result of the more skilled and efficient workforce, explain how the value of education is measured and how the success of education is assessed.

It is important to point out that the human capital theory, like other aspects of mainstream economics, highlights only the economic reasons explaining human behaviour. The benefits of education taken into consideration are only the economic ones, disregarding other reasons for

human behaviour. As Robeyns aptly puts it : “That people might act for social, religious, moral, emotional, or other non-economic reasons cannot be accounted for by this theory”.

By limiting the value of education to its instrumental role of providing skills and enhancing productivity, human capital theory evaluates education on the basis of a standard cost-benefit analysis, which only accounts for material effects. Important intangible effects that surpass the narrow utility-based prism of evaluation are overlooked, as are other important roles of education. By pointing out these limitations of the human capital theory, Sen’s intention is not to replace it with the capability approach, but instead to acknowledge its relevance and to add broader, non-economic effects that extend its scope and reach, as we shall see in section two.

The utilitarian framework and human capital theory have a strong effect on the evaluation methodology of education. Mainstream approaches to education evaluation are built upon the economic principle that measuring utility, resources, or outcome captures the essential factors and provides the most relevant results. Similarly the basis of evaluation of education according to the human capital theory is efficiency. Educational institutes, viewed as the source of skills that develop human capital, are generally evaluated on their efficiency in doing so. Current evaluations of education systems only look at inputs (for example, the cost of tuition and level of teacher qualification) and outputs (students’ results and their corresponding skills in specific domains).

However, this type of assessment does not consider the issue of the conversion of resources. By conversion, we refer to the possibility and ability of transforming the instrumental means into genuine ends for the individuals concerned. Individuals must be able to derive intrinsic value from these resources. “The conversion argument says that the importance of these primary goods or resources is derivative on the individual capability to convert them into valued functionings.”

Human capital refers to investments in personal skills and abilities with the aim of producing a return that would increase individual welfare along with general economic productivity. As Sen 12 points out, ‘human capital’, relating “to broadening the account of ‘productive resources’ […] concentrates on only one part of the picture […]. It does need supplementation. This is because human beings are not merely means of production, but also the end of the exercise”. It is thus necessary “to bear in mind [… that] education, and other features of a

good quality of life are of importance on their own […] and not just as, human capital', geared to commodity production".

Another characteristic of the instrumental view arises from its dependence on market rationality and competitiveness. Human capital discourse relies on the view that markets are efficient in matching the acquired skills with occupations. Consequently, cases of discrimination, segregation, exclusion from labour markets are not taken into account by this theory.

Inequalities in education associated with race, class, or gender are not a focus of the theory, where instead it is dealt with as either promoting or preventing the development of human capital for the purpose of economic growth. The solution therefore, is to provide education because otherwise it will impede growth. Growth depends on the competitiveness of the economy, which in turn requires high skills levels: "In the sphere of vocational training and education, firms face the problem of securing a workforce with suitable skills, while workers face the problem of deciding how much to invest in what skills. On the outcomes of this coordination problem turn not only the fortunes of individual companies and workers but the skill levels and competitiveness of the overall economy".

EDUCATION AS A RIGHT

The second role of education accepted in mainstream economic theory, namely the intrinsic value of education, has led to the right-to-education model. However, where the instrumental role of education allowed for economic calculation of its value and effect, the right to education model is justice-based and dwells outside the realm of economic estimation. It is widely accepted nonetheless and embedded in contemporary economic theory as a "public good", excluded thus from the functionings of markets.

Its appeal stems from its convincing discourse on rights, which is a standard part of modern economics. However, the very factor that explains its appeal can be a source of criticism. Robeyns argues that it sounds "overtly rhetorical", and that once its objectives are pronounced, the responsibility of its execution may be ignored. Another criticism concerning this model is based on the distinction between legal and moral rights. The danger of education being limited to a legal right, and therefore, under the prerogative of the government, reduces its implementation and effect. If education is considered only as a legal right and not a moral right, the obligation to fulfil, or to

prevent the violation of such a right is limited, whereas a moral right creates obligations that go beyond those of the government only. Finally, this perspective places the responsibility solely on the government to fulfil the legal right to education.

Thus it can be said that evaluating education on the basis of efficiency as neo-classical economic theory tends to do, looking at resources and output as results, leaves many important aspects of personal satisfaction and development ignored, or only partially addressed. If neither efficiency nor rights-based criteria enable a proper understanding of people and agency and of the role education plays in this respect, shifting the theoretical framework towards the capability approach may provide the solution. The human capital model mainly acknowledges the instrumental economic role of education, and the rights-based approach the intrinsic personal role of education, whereas the capability approach acknowledges both, in addition to other roles. More importantly, we will see that it requires a shift from efficiency-based evaluation to justice as the main criterion.

EDUCATION AND CAPABILITIES

After briefly summarising the capability approach and its key concepts, we list some of the various roles Sen attributes to education. We then focus on the metric of justice, showing how Sen's idea of justice differs to its most significant alternative, that of Rawls. This will enable us to discuss Sen's idea of justice and its relevance in perceiving and evaluating higher education.

Building on his criticism of traditional welfare economics, particularly for associating wellbeing with resources (income) or utility (happiness), Sen distinguishes between commodities, functionings, capabilities and utility in his approach. He shows that utility is not a direct consequence of income, but is a result of a more complex relation between the commodities that are obtained with income or resources, and the capabilities and functionings that lie in between. Thus, income or the commodity command is a means towards achieving functionings: "[...] wealth is evidently not the good we are seeking; for it is merely useful and for the sake of something else". Sen goes on to explain how people differ in their ability to convert income and commodities into achievements that they value. Therefore, evaluating wellbeing through the narrow lens of commodities a person can command does not give enough information in order to fully comprehend how well people are able to function with the income they possess.

Secondly, utility is not, according to Sen, the end-all of human existence, and there is more to life than achieving utility. While specifying that utility is important, Sen emphasises that there are many other things of import and value to people that are not considered in traditional welfare economics.

THE CAPABILITY APPROACH APPLIED TO EDUCATION

His response is to introduce the concepts of functionings and capabilities, arguing that capability has intrinsic value and should be regarded as the "primary informational base". Functionings can be understood as what a person manages to do or be. It refers therefore to how a person utilises the income or the commodities she can command, and is based on the outcomes that a person values or has reason to value. The second concept, the notion of capabilities, combines the concept of functionings with opportunity freedom, referring to a person's ability to achieve these functionings. Capabilities are the freedom a person has to enjoy valuable functionings. Thus a functioning is an achievement, while a capability is the ability to achieve. For example, with regard to higher education, functionings would include, being able to study, being able to participate in university life, in addition to being able to pass an examination or receive a qualification.

Speaking about basic education at the 2003 Commonwealth Education Conference in Edinburg, Sen explains how human development goes much further than the human capital approach in understanding and acknowledging that education enhances freedom. First, education has an instrumental role in facilitating people's capacity to participate in decision-making processes at various levels. Therefore it also plays a social role, since literacy is essential to foster public debate and dialogue. Sen also refers to its empowering and distributive role. Education can redress injustice by facilitating the ability of disadvantaged, marginalized and excluded groups to participate in social and political arrangements. Thus education has redistributive effects between social groups, households and within families. Finally, education has transformative potential because people are able to use the benefits of education to help others, as well as themselves.

These comments on basic education can be extended to higher education with increased reach and scope. If basic education is a prerequisite to foster public deliberation, higher education can only improve the process. Similarly, its social, redistributive and transformative roles have greater potency and more effective impact when agents are better educated.

The capability approach provides a useful framework and normative tool with which to articulate both the learning processes and social value of education. As said earlier, this approach is a response to the limitations of assessments that measure only outcomes or utility-based satisfaction. With the human capital theory, evaluations take the form of examination results or competency tests because the objective is to acquire skills that enhance productivity and employability. In the case of rights-based education, the discourse promotes the intrinsic value of education regardless of what education is expected to achieve. Distributing resources and granting rights are not sufficient if the specific capabilities of the individuals are not addressed. The capability approach to education goes beyond both these theories, evaluating not just outcomes, but also the links between capabilities and functionings. Thus, the questions raised probe into people's aspirations and the opportunities they face as well as the choices they make.

As has been emphasized earlier, the capability approach stresses the importance of conversion factors: given interpersonal heterogeneity, it should be understood that similar educational resources do not necessarily lead to similar learning outcomes. Possessing resources as instruments means that people must be able to convert them into ends, which are functionings. These converting capabilities are highly diverse among people, which weaken the supporting argument for a resource-based equality. Sen's approach considers the equality of capabilities in and through education. What this requires is acknowledgement of the heterogeneity and pluralism of human beings and the connection between individual experience and social arrangements by studying equality in the capability to convert resources into functionings. Therefore, instead of being satisfied with equal levels of input, resources in education, one needs to question if all individuals are free to participate, equally, in education in different settings.

JUSTICE AS FREEDOM

While the rights-based view of education embraces the idea of justice as being equal education for all, the capability approach is based on a more complex notion of justice than equality of input or output. Sen's approach is inspired by Rawls' notion of justice, but goes further to overcome its weaknesses. Rawls has argued that the "primary goods" at a person's disposition are rights and liberties, powers and opportunities, income and wealth and justice needs to be allocative. In other words, promoting justice, according to Rawls, implies providing people with the resources they need to lead the lives they have chosen. Therefore, it is assumed that equal opportunities for

individuals signify equal command over resources. Sen criticises how Rawls' approach concentrates on "means to freedom, rather than on the extent of the freedom that a person actually has".

From this point of view the "resource a person has, or the primary goods that someone holds" may be essential but still be "very imperfect indicators of the freedom that the person really enjoys to do this or be that" while a "focus on basic capabilities can be seen as a natural extension of Rawls' concern with primary goods, shifting attention from goods to what goods do to human beings".

The capability approach takes into account the social context that sets the conditions for individual freedoms. The framework is sensitive to diverse social settings and group configurations. At the same time, it brings the focus back on the individual, which differs from the emphasis on aggregated outcomes and aggregated benefits in the human capital theory. Focusing on what people can do and be, rather than being exclusively directed towards their skills or the assets they have at their disposal, is the approach on education concerned with the capabilities of each individual. In terms of its normative implications the capability approach may thus be interpreted as individualistic. Sen's work is grounded in his ethical individualism, where each person counts, and this differs from the mainstream view based on ontological individualism, driven by narrow self-interest.

In keeping with Sen's idea of justice, education should be evaluated according to the impact on people's present and future capabilities. Good education is concerned with wellbeing, which neither depends on consuming resources or inputs, nor or the functionings a person might have achieved. Instead, it depends on the reach and scope of freedoms that people have reason to choose and value.

As Walker has shown by applying the approach to the area of pedagogy in higher education, following the ethical informed process means raising the questions of equitability, humane justice, becoming alert to the question of how we would like students to be, and what we would like them to become. The approach delves further than responding to imperatives in the form of efficiency, human capital or cost-benefit. Instead, pedagogies should be transformative and reach beyond the classroom to impact on processes of freedom.

Sen's approach has also affected the information regarding the process and the evaluation of education. By discussing and collecting data on educational capabilities, greater insight is offered as to the significance of education in enhancing people's lives. If we take the case of literacy, which is used as an indicator of the capability to read and write, it might be misleading when considering a set standard for everyone. Individuals who fail the standard literacy tests may feel, nonetheless, that they have the capability to read and write. There are different degrees of literacy, which can already be very empowering for many.

RAJA CHELLIAH

The Committee wishes to place on record its satisfaction with the action of the Government in initiating proposals of tax reform in the 1992-93 Budget broadly along the lines suggested by the Committee~ especially in relation to direct taxes and customs tariff. It would appear that the framework of reforms recommended by the Committee would form the basis for the subsequent instalments of reform so that ultimately the entire tax system gets radically transformed into a simple, fair and economically rational one. In this hope, the Committee has now worked out the lines of reform of mostly those parts of the tax system and its administration which had not received attention in the Interim Repo"rt.

The Final Report of the Committee is divided into two parts. The present Report forms Part I of the Final Report. Part II of the Final Report will deal with the further restructuring and reform of the customs duties in the medium term framework; it will also work out the details of the• removal of the excise and customs notifications and the incorporation of those that are to be retained in the statutory rates themselves. The present Report deals with, and makes recommendations on, issues in five broad areas:

Problems of direct taxes not considered in the lntetim Report, namely, corporate profits tax including the taxation of foreign entities, ptoblems relating to business taxation, the interest tax, taxation of agricultural income and the gift tax.

Further · reform of the system of domestic indirect taxes, particularly at the · Central level, more details regarding the extension of modified value added tax (Modvat) and conversion of Modvat into value added tax (VAT).

Improvements in procedures, including appellate procedures, removal of complicated provisions and provisions unduly weighted against the assessee: direct taxes - customs and excise.

Problems of administration : Making administration more efficient and at the same time more humane and more aware of the broader aspects of taxation. Changes in 'administrative structure, facilities, emoluments, selection pmcedures at the higher levels, punishments and rewards.

Revenue Audit - its role - the attitude of Audit and the problems created for the · assessees - lines of reform.

Before we deal ·· with the above-mentioned subjects, we would like to make some observations on the action taken by the Government on our recommendations in the Interim Report. We do this in Chapter 2. Ch~pter 3 deals with the lines of reform of direct taxes, while, in Chapter 4, the Committee considers in greater detail than in the Interim Report, the structural reform of the excise tax system and possible lines of harmonisation with the State sales taxes. Administrative procedures and removal ·of . harsh or complicated provisions are dealt with in Chapters 5, 6 and 7. Chapter 5 deals with problems common to direct and indirect taxes. It discusses also operation of Revenue Audit by the Comptroller and Auditor General (C&AG). Following this discussion, the Committee recommends changes in the ambit of Audit and on the proper responses that the Departments should make. Chapter 6 deals with provisions and procedures u'n.der direct taxes and Chapter 7 with those under excises and customs. Chapter 8 discusses the ways in which the appellate procedures can be improved, with a view to speeding up settlement of disputes and avoidance of unnecessary litigation. Chapter 9 discusses the administrative set-up of the Tax Departments, the facilities to be provided to them; emoluments, the. , system of staff appraisal, awards a~d .punishments and the select!on procedures at the top levels. The final Chapter gives a summary of conclusions and recommendations. Dr Amaresh· Bagchi, who wa8 member of the Tax Reforms Committee. as it was originally constituted, resigned his membership at the en~ of 1991 in order to take up an assignment ~v*h the World Bank. The present Report has bdm prepared by the following members: Dr Raja'J. Chelliah Shri S.V.Iyer Shri V.U. Eradi Shri V. Rajaraman ·. Chairman -Member Member Member.

Shri Gautam · Ray, Deputy Collector, Customs and Central Excise and Shri Arbind Modi, Deputy Commissioner of Income Tax continued as the Secretary and the Additional Secretary to the Committee, respectively.

'We ·wish to thank all those representative organisations of industry and trade, experts, eminent jurists and all other individuals who submitted to the Committee written comments and suggestions or gave oral evidence. Our tasks could. not have beer. fulfilled without their willing co-operation and help. We would like to specially thank the Chairmen and Members of the Central Board· of ·Direct Taxes (CBDT) and the Central Board of Excise and Customs (CBEC) for presenting their considered views before us and for helping us in numerous other ways including the supply of data on many aspects of the working of the Gentral tax system. The tax officers in the field with whom we had extensive discussions also gave us much valuable information and were frank in the expression of their views. We wish to thank · them also. Finally, we must acknowledge our indebtedness to the staff of the National Institute of Public Finance and Policy on whose previous work and present research we have drawn. In particular, we would like to thank the Direct Taxes Cell of the Institute, funded by the Ministry of Finance, whose work on the Enforcement of Direct Taxes we found to be much value for our work.

We would like to acknowledge also the considerable help that we have received from the administrative and other staff of NIPFP including Mrs. Rita Wadhwa, for: editing the Report. Competent secretarial i support was provided by Miss Sushila Panjwani, Shri S.B. Mann, Shri Digvijay Mishra, Shri B.K. Shrivastva, Shri M.C. Aggarwal, Shri A.K. Baronia, Shri S.C Tandon, Shri Navin Kumar Singh and Shri Satish Kamath. Shri N. Natarajan and his unit helped in the production of the Report. A list of organisations and individuals who submitted memoranda or· gave formal evidence before the Committee~ is given in Appendix I.

All over the world, tax systems have undergone major changes since many countries with different levels of development have taken up various forms of reforms. Tax reforms started in the mid 1980s and accelerated in the next decade. Tax policy in India initially was mainly guided by a number of demands placed on the government (which included measures to stimulate growth and ensure a fair distribution of incomes). However with time the objectives of tax policies altered. Tax reforms were undertaken to improve the fiscal imbalance of the country and to augment the budgetary resources of the government along with the profits made by public enterprises. Also,

liberalization policies led to huge reduction in the revenue made by tariffs and this was compensated by increasing the tax revenue. Several tax reforms were taken up in India starting from 1953. However, this paper is concentrated on the one of the most significant tax committee report of all times, the Chelliah Commitee Report.

Raja J. Chelliah was the chairman of the Tax Reforms Committee which was set up in 1991-92. Most of the proposals were accepted by the government of India, among them many were implemented by the middle of 1997. He emphasises the need for a simple and transparent tax structure which would induce tax compliance and avoid tax evasion. Chelliah proposes a tax structure with moderate rate and very few exemptions and deductions. □e three things that he focused in this report are efficiency, horizontal equity and simplicity. His recommendations mainly relates to personal income wealth and inheritance taxes, corporate tax and excise duties.

CHELLIAH TAX COMMITTEE REPORT

Following the economic crisis of 1991, tax reforms have been initiated in India and have been an important part of the structural reforms. Chelliah Committee report is in three parts, the first is the interim report, and the final report has been divided in two parts. In the interim report, the tax committee set guided principles of tax reform and applied them on taxes on income and wealth, tariffs, and taxes on domestic consumption. □e first part of the final report dealt with the neglected aspect of reforms in administration and enforcement of both the direct and the indirect taxes. □e second part of the final report dealt with the enforcement of the tariff structure. □e major recommendations of the report are listed below.

RECOMMENDATIONS RELATING TO DIRECT TAX

- Corporate tax rate of domestic companies to reduce to 40% by 1994-95
- Depreciation on plant and machinery to be reduced to 25% by 1992-93
- Reductions in taxations of the non-residents to be carried out to attract foreign investment
- Exemptions to income and corporate taxes are to be eliminated systematically in order to broaden the tax base

- Abolition of interest tax
- Abolition of wealth tax
- Continuance of gift tax and
- Exemption limit of taxation of agricultural income to be Rs 25,000

RECOMMENDATIONS RELATING TO INDIRECT TAX

- Present excise system to be transformed into value added taxation (VAT)
- Transition to VAT to be carried out at the central level
- Extension of VAT to the wholesale stage
- Central excise was to be restructured in order to cover all manufactures
- Higher rates of selective excises were to be levied on luxury consumption items
- Conversions of sales tax into state VAT and
- Import tariffs to be reduced at par with other developing countries.

RECOMMENDATIONS RELATING TO TAX ADMINISTRATION

- Measures: stability, target fixing, accountability, changing the perception of the officers regarding work, grievance redressal machinery, taxpayer education and publicity
- Improvement in penalties and prosecution structure
- Establishing a Settlement Commission to settle cases
- Computerisation to overcome the hardship of tax collection and
- To provide suitable office and residential accommodations to the officials.

RECOMMENDATIONS TO IMPROVE ADMINISTRATION AND ENFORCEMENT OF DIRECT TAX

- Modernization of the administration
- Correcting the structural failure
- These can be achieved by
- Taxpayer Identification and Control
- Verification System

- Summary Assessment
- Scrutiny Assessment
- Taxpayer Information System
- Tax Account Information System
- Re-assignment of Responsibilities
- Search and Seizure
- Direct Tax Code

RECOMMENDATIONS TO IMPROVE ADMINISTRATION AND ENFORCEMENT OF INDIRECT TAX

- Updating and simplifying of procedur
- Inspecting and monitoring
- Training
- Valuation in central excise
- Collection of excise on matches and cigarettes
- Field security at airports and
- Augmenting staff for additional work

These reforms are important for creating an economic system which avoids distortions, and which would ensure adequate buoyancy of revenues to support the task of fiscal consolidation. But the changes in the tax system should be accompanied with the changes in tax administrations in order to benefit from the reform completely. The tax reform committee has basically attempted to move Indian tax structure to a simpler system of direct taxation with moderate rates and reduced exemptions. The budget from 1991 onwards has been put keeping in mind the recommendations of the Chelliah Committee report.

IMPLEMENTATIONS OF THE RECOMMENDATIONS

The recommended reforms were mainly implemented in the budgets which were presented by Manmohan Singh from 1991 to 1996. His first budget of 1991 was presented during the fiscal and balance of payment crisis. The corporate tax rates were raised by 5% and import duties were reduced drastically until it finally reached 50% in 1995- 96. In 1992-93, personal income tax was

implemented in a three tier structure of 20%, 30% and 40%. Wealth tax was abolished and exemption limit was increased. In the next budget, custom duties especially on machinery and capital goods were reduced. In 1994-95, a unified corporate tax rate was introduced which was same as the highest personal income tax rate. Import duties were further reduced and several exemptions were abolished. Also, most of the excise taxation was shifted to ad valorem rates from specific rates. This year also initiated taxation on some specific services. Later finance ministers, P. Chidambaram and Yashwant Sinha also carried out the recommendations laid down by the Chelliah Committee Report in terms of reduced corporate tax rate, lower import duties and strengthening income tax return procedures to expand the revenue base.

It is therefore by the year of 2000, the implementation of large number of recommendations of the tax reform committee was done by three different governments along with three different finance ministers. Personal income tax as well as the tax rate of domestic companies was lowered even below what was recommended in the tax reform committee. Import duties were also brought down. The multiple excise structure had been transformed into a single rate CENVAT. Taxes on services had been introduced and somewhat expanded. Exemptions have been reduced however, not to the extent that the committee had recommended.

CHALLENGES OF THE RECOMMENDATIONS

There were several issues faced during the implementation of the recommendations of the Chelliah Committee Report. There have been major changes in the customs tariff structure since 1990 but still major challenges remained for future reforms. There still exist large number of exemptions in tariffs structure and non-agricultural tariffs are not uniform and higher than required. The issue with excise duty is its low buoyancy. During the reforms, it was expected that the fall in customs revenue would be compensated by a rise in excise. However, revenue collected through excise has fallen after 1990. Hence, the tax administration regarding excise must be strengthened by bringing some products which are exempted into the excise structure and by imposing special excise on some luxury items. The integration of services tax with excise should be promoted. In order to broaden the base of direct taxes, exemptions should be eliminated further particularly since the corporate tax rates are being lowered. Major difficulties in tax administration still persist particularly in the area of direct tax in terms of evasion.

An U.N report had once quoted, “India had become a laboratory for trying out and imposing every conceivable type of tax in the world”. This statement is absolutely true once one observe the number of tax reforms that has taken place in India since 1956. The complexity of the taxation system in India has made it difficult to coordinate proper tax reforms. India is still struggling with different approaches towards taxation. It is therefore essential to look back at the history and learn from the attempts made by former policy makers. India is again in the process of economic reforms and hence the lessons learnt from Chelliah Committee Report can be used in the present times as well. Chelliah Committee Report focussed on making the taxation procedure simpler and the tax administration stronger so that tax evasion is reduced and hence tax revenue increases. However, one must always keep in mind that the objective of taxation is not only to increase revenue of the government but also to enhance growth, equity and stabilization in the economy. It is often found that different governments have clashing interest and hence, there is no one clear cut objective followed by every government in power. Every new regime experiments with tax structures. However, it is also true that with changing economic scenario both domestically as well as globally, we need a flexible tax policy which would adhere to the country's current needs.

HONOURING DR C. RANGARAJAN, AN OUTSTANDING ECONOMIST, A POLICY MAKER AND A STATESMAN

This special issue of the Indian Economic Journal (IEJ) is to honour and to celebrate the outstanding achievements of Dr C. Rangarajan as he contributed so much to policymaking, research, teaching and building of institutions. His contributions can be briefly summarised in the following 10 points.

First, as a policy maker, Dr Rangarajan’s greatest contribution, among others, is on monetary policy of the country. He was associated and largely perceived to be the main architect of the 1985 Sukhamoy Chakravarty Committee Report, which was set up to review the working of the monetary system. Its recommendations had far-reaching consequences. One of the major contributions of this committee was its recognition of multiple objectives of monetary policy with price stability being the dominant one to be achieved through monetary targeting. As the Governor of the Reserve Bank of India (RBI), he made several far-reaching reforms in the monetary policy and restored the needed autonomy in the working of the RBI. Some of these reforms are phasing out of ad hoc treasury bills, introduction of ways and means advances, reduction in the cash reserve

ratio (CRR) and statutory liquidity ratio (SLR) rates and, removing administered structure of interest rates in the banking system. Simultaneously, the coordination between fiscal and monetary policies was probably the highest during his period as RBI Governor.

Second, Dr Rangarajan played a significant role in the management of 1991 balance of payments crisis in 1991. As RBI Governor during 1992–1997, he was one of the architects of the economic reforms that were undertaken in the early 1990s. This was also possible because of his partnership with the then Finance Minister Dr Manmohan Singh.

Third, he was the main architect of the external sector liberalisation. He played a critical role in the movement towards market-determined rupee and liberalisation of the balance of payments. As Dr Rangarajan himself mentioned, the adoption of the liberalised exchange rate management system (LERMS) in 1993, followed by a relatively stable exchange rate in the initial years of economic reforms, was nothing short of a 'silent revolution'. 'Apart from imparting exchange rate stability and external sector viability, Rangarajan's major contribution is a deep understanding of the linkages between the debt markets, the government securities market and Regulatory measures' (Reddy, 2023).

Fourth, beyond RBI, he was the Governor of Andhra Pradesh (AP) during 1997–2002. If the balance of payments crisis in 1991 triggered off economic reforms in the country, the years 1995–1996, in many ways, proved to be a watershed for the macroeconomic scene in AP state's own tax revenues as per cent of gross state domestic product (GSDP) dropped by nearly three percentage points between 1990–1991 and 1995–1996, due largely to the fall in revenues from state excise following the introduction of prohibition. The untargeted subsidy on rice together with the low rates for water and electricity for irrigation resulted in a huge revenue loss, which was much beyond the capacity of a state like AP whose per capita income was below the national average. The state thus landed itself in a severe financial crisis, holding up much-needed development expenditure. The state government under the leadership of Chief Minister Chandrababu Naidu responded to this challenge boldly and imaginatively by undertaking measures to raise tax and non-tax revenues and by launching several reforms to restructure the institutions for the management of infrastructure. These initiatives have earned a name for AP as one of the forefronts of economic reforms, raising high expectations within the country and abroad its performance. Chandrababu Naidu's public image was that of an economic reformer and proponent of information technology-based economic

growth. As an eminent economist, Dr Rangarajan's advice on economic reforms, growth and equity was very useful for the development of combined AP.

Fifth, he contributed to the 'fiscal federalism' when he was the Chairman of the 12th Finance Commission (12th FC). The report of the 12th FC was regarded as being path-breaking in furthering fiscal decentralisation in India and for laying the foundation for fiscal consolidation. Among others, the Commission complemented the Centre's Fiscal Responsibility and Budget Management Act (FRBMA) of 2003. It prepared a framework for extending the provisions of this act to the state governments and for combined account central and state governments. Another notable contribution of the 12th FC was that the entire framework of the combined debt and deficit relative to GDP was linked to the saving and investment profiles of the economy. The 12th FC also laid down a framework for guiding fiscal transfers from the centre to the states under an equalisation principle with an emphasis on health and education services. It also suggested setting up of a loan council comprising representatives from the Ministry of Finance, Planning Commission, RBI and the state governments. The council should, at the beginning of each year, announce borrowing limits for each state, taking into account the sustainability considerations.

Sixth, his advice to the government was extremely useful when he was the Chairman of the Economic Advisory Council (EAC) to the Prime Minister (2005–2014). As Dr Manmohan Singh mentioned 'I have not known anyone more dependable, more impartial, and more valuable in the advice he gave as the Chairman of the Prime Minister's Economic Advisory Council'. The EAC brought out a report entitled 'Economic Outlook' during his tenure as Chairman of the council. In its various reports, the EAC drew the attention of the government to the various aspects of the economy that deserved consideration. As the reports were widely circulated, they were available not only to the government but to the public in general. During his tenure at EAC, Dr Rangarajan was asked to chair several committees that were set up whenever key issues came up for consideration. Some of the committees are: (a) Chairman, Committee on Financial Inclusion (2006–2008); (b) Chairman, High Level Committee on Estimation of Saving and Investment (2007–2009); (c) Chairman, High Level Expert Committee to suggest measures for effective management of Public Expenditure, Planning Commission (2011); (d) Chairman Committee on Deregulation of Sugar Sector (2012); (e) Chairman, Expert Group to Review Methodology for Measuring Poverty (2014). Each of these committees has influenced public policy in India.

Seventh, financial inclusion has become a buzzword now. Dr Rangarajan played an important role in encouraging and strengthening financial inclusion as RBI Governor, as Chairman of the committee on financial inclusion and as Governor of AP. As RBI Governor, he recognised the social responsibility of banks and strengthened self-help groups (SHGs) bank credit linkages. The committee on financial inclusion under the Chairmanship of Dr Rangarajan was set up to look into what needs to be done to expand the availability of financial services to weaker sections. According to the committee 'Financial inclusion may be defined as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost'. Over time, there has been a remarkable improvement in financial inclusion in the country. The Pradhan Mantri Jan-Dhan Yojana (PMJDY), launched a decade ago, has significantly furthered the cause of financial inclusion. By facilitating basic savings accounts credit, and insurance, the scheme has ensured universal and affordable access to formal banking services. The numbers indicate that 531.4 million have been included in the PMJDY so far, with nearly 55 per cent of account holders being women, and 67 per cent of the accounts opened in rural and semi-urban areas. The term 'financial inclusion' gained currency partly due to the recommendations of the committee on financial inclusion (2008) chaired by Dr Rangarajan. As Governor of AP, he took keen interest in the progress of self-help groups for women in the state.

Eighth, The National Statistical Commission chaired by Dr Rangarajan gave valuable recommendations to improve the Indian Statistical System. In the words of Dr Rangarajan.

The commission after analysing the deficiencies of the Indian statistical system in terms of its administration and technical requirements has made several recommendations to revamp the statistical system. It may be legitimate to question how the recommendations would bring about improvements in the timeliness, reliability and adequacy of the Indian official statistics and contribute to its credibility in public perceptions and debates. In this context it may be stated that the loss of credibility in official statistics especially in the 1990s prompted the appointment of the National Statistical Commission with a wide-ranging term of reference… The recommendations on

individual subjects aim at stemming the deterioration in the administrative statistical system and to improve it over time. Similarly, a revival or strengthening of the established institutional mechanisms of vertical coordination has also been recommended along with several suggestive guidelines for improving the state statistical systems. This would go a long way towards restoring the vertical coordination. The commission has recommended wide-ranging changes in the top structure of the Indian Statistical System to provide correctives for identified systemic deficiencies. …The proposed establishment of the National Commission on Statistics as a nodal policymaking and supervisory nonofficial body with statutory backing and assisted by subject specific expert groups as also its executive organ, namely the National Statistical Office with well defined implementing powers and headed by a national statistician are meant to strengthen coordination in the decentralised statistical system at various levels …The systemic view of the essentially decentralised Indian statistical system reflected in the recommendations of the commission would help to improve the credibility along with timeliness, reliability and adequacy. The improvements suggested would lay the foundation of a strong, robust and responsive statistical system that would cater to the needs of its various stakeholders and for enabling scientific decision-making using statistics, which is the basic requirement for good governance (Rangarajan, 2001).

Indian statistical system has improved a lot because of implementation of the recommendations of the report. Ninth, the profession equally respects Dr Rangarajan for his teaching. He taught at the Wharton School of Finance and Commerce, University of Pennsylvania; Graduate School of Business Administration, New York University and IIM, Ahmedabad. As a faculty member at IIM, Ahmedabad, he used to prepare and publish forecasts of private investment in India. He still gives lectures at universities and research institutes in India. Dr Rangarajan had a gift for explaining complex concepts in terms everyone can understand. Over the years, many students have benefited from his teaching and public lectures.

Tenth, Dr Rangarajan's contributions as a researcher despite his other preoccupations are well known. He has written several books, research articles, monographs and newspaper columns on different research topics. He did pioneering research on macroeconometric modelling, alone or

in collaboration with his colleagues at RBI. He published three books even when he was Governor of Andhra Pradesh. Recently, he published a book entitled 'Forks in the Road: My Days at RBI and Beyond'. This is supposed to be a memoir, but it goes beyond that and puts together analytically his experiences and contributions to policymaking and other fields. 'Forks in the Road deserves to reach the status of timeless classic in economic history, not just for Indian readership but globally' (Acharya, 2023). Even now students, researchers and policymakers look forward to his writings in journals and newspapers.

Dr Rangarajan is also an institution builder. He played an active role in the development of research and teaching institutes such as National Institute of Public Finance and Policy, New Delhi; Madras School of Economics, Chennai and Indira Gandhi Institute of Development Research, established by RBI at Mumbai. Some other institutes have also benefited from his guidance including Indian Statistical Institute, Kolkata; C.R. Rao Institute of Mathematics, Statistics and Computer Science, Hyderabad;

University of Hyderabad and ICFAI Foundation for Higher Education, a Deemed to be University, Hyderabad. I am fortunate to have been associated with Dr Rangarajan in the last four decades. I have interacted with him when I was Director of CESS; Chairman of the Commission for Agricultural Costs and Prices and Director of IGIDR. I am privileged to be a member of the two Committees chaired by Dr Rangarajan. One is the committee on financial inclusion. The other one is the expert group on poverty measurement. In the last few years, Dr Rangarajan and myself have been writing on poverty measurement, trends in poverty and inequality, issues on agriculture, universal basic income and safety nets. On policies, we emphasised that while it is important to know how policies operate at grassroots level, we must not overlook the relevance of macroeconomic policies in reducing poverty. Growth is important and it can reduce poverty. During the fast growth periods 2004–2005 to 2011–2012 and 2011–2012 to 2022–2023, the number of poor came down significantly. It is also emphasised that apart from growth, specific programmes are required to directly help poorer groups and vulnerable sections. There are so many multidimensional indices which are coming up to measure poverty and well-being. We have argued that consumption-based poverty is still relevant. However, there are some issues with consumption data particularly the differences between national accounts and NSS data on consumption.

It is a huge privilege to be the guest editor of this special issue in honour of Dr Rangarajan. It was not easy to select the contributors for this special issue as we have a large pool of Dr Rangarajan's admirers in different fields of economics and other disciplines. We were selective and invited nine eminent economists who are well acquainted with his writings and privilege of working with and learning from Dr Rangarajan. When I contacted them, the contributors readily agreed to write for the volume. The authors were free to choose the themes of their papers. Most of the papers relate to monetary and fiscal policies as Dr Rangarajan has extensively worked on these topics. I am grateful to all the nine authors for contributing their valuable research papers for this special issue to celebrate the outstanding achievements of Dr Rangarajan.