Labour-intensive Industrialisation in Global History

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1. Introduction

This paper attempts to show a central role labour-intensive industries played in the global diffusion of industrialisation, and to discuss its significance for global history. It suggests a new interpretation of industrialisation by placing the improvement of the quality of labour as a vital element of global transformation.

The standard understanding of industrialisation places technological progress in the centre of discussion. Classical economists discussed the growth of the market, focussing upon the change in production rather than demand or consumption. They also set the framework of economics by identifying land, capital and labour as the three main factors of production. Thus, in the modern theory of economic growth, the role of labour in industrialisation has been mainly discussed in the context of how and in what proportions capital and labour were combined to produce industrial goods. There are at least two implicit but fundamental assumptions in these works, which have gone against recognising the importance of the quality of labour for industrialisation. One is the tendency to single out capital, or the establishment of saving-investment mechanism, as the most important element for the growth of industrial capitalism. When Simon Kuznets designed a theory of economic growth, he essentially understood the importance of labour in the same way as he understood the importance of

capital. For him labour was substantially “human capital” (Kuznets 1955). There the old-fashioned labour theory of value, which was inclined to see capital as embodied labour, was rightly disregarded. Along the way, however, the unique attributes of labour among factors of production (labour is embodied in human being) have largely disappeared from the analysis of economic growth. As is well-known, the most conspicuous writer that promoted this process was W. W. Rostow. In his scheme the timing of “take off” was determined by the rise in the ratio of saving to GDP (Rostow 1960).

The second, equally important assumption, which has been shared in the discipline, is to regard labour as abundant, homogenous and disposable at the initial stage of economic development. Labour has been treated as analogous to other factors of production such as capital and land, but, while the law of diminishing returns was recognised with respect to land, the difference in quality among labour has not been thought as vital. Classical economists, Karl Marx and Arthur Lewis thus tended to disregard the question of the quality of labour as an essential part of their discussion (e.g. Adam Smith 1776; Marx 1867: Lewis 1954).

Of course, one of the main Kuznetsian conclusions was the significance of education and the advance in knowledge for technical progress (e.g. Denison 1967; Denison and Chung 1976). But it was emphasised in the analysis of total factor productivity, which tended to focus on the industrialised economies, and often within the closed economy framework. This seems to be the case with the new endogenous growth theory too, which more explicitly examines the impact of the increase in human capital on economic growth (for its relevance to development economics, see Meier 2001, pp.19-20). Even on a rare occasion when the impact of massive human migration from India and China during the nineteenth and the early twentieth centuries on the world economy was

explicitly brought into focus, it was treated as abundant, homogenous and disposable labour “willing to travel to the ends of the earth to work on plantations for a shilling a day” (Lewis 1978: p.188). The role these workers were given to play in the growth of the world economy was to depress the real wage in the tropics, with the result that the gap in the standard of living between the temperate and tropical zones widened.

No consideration has been given to the question of how Japanese and other Asian workers raised their literacy rates, the capacity to absorb new technology and develop coordination skills in the second half of the nineteenth century, and eventually acquired education and the taste for modern consumption and life-styles during the twentieth century, in spite of the fact that these countries in general had a relatively imperfect capital market and a weak resources base. “Catching up” occurred, not just as a result of the Gerschenkronian pooling of resources or injection of capital, or the state promotion of technical education and nationalism. These efforts certainly mattered, but they were not sufficient to make any Asian industrialising country competitive in raising capital and securing resources, against those countries which were part of the Atlantic economy during the second half of the nineteenth and the early twentieth centuries. In particular, they do not in themselves explain the international competitiveness of labour-intensive industries, represented by cotton textiles, which became the mainstay of Asia’s industrialisation.

In fact it was Lewis’s “unlimited supplies of labour” that was first employed in modern factories of Bombay and Osaka during the second half of the nineteenth century. But they slowly but steadily improved their efficiency. By the early twentieth century there was a recognizable difference in the quality of labour among textile workers (for example between India and Japan), which came from the differences in their background, labour

management, and working and living environment. Also, a much larger number of people continued to work in traditional industries. They too gradually improved their machines, obtained access to electricity and eventually employed power-loom. By the 1930s the combination of modern industry and traditional industry gradually pushed out the products of modern factories in Western high-wage economies in the Asian international market.

The international competitiveness of Asia's labour-intensive industries continued into the post-war period, and their products penetrated into the Western market in large quantities. Today, the majority of world's industrial workers are employed in Asia. In 1997 22% of world's manufacturing employment was located in China, 16% in India, and nearly 60% in Asia, while countries with per capita income of 5, 000 dollars or above (including Japan) took up only 18% (ILO 2002). Looking back the last one hundred fifty years from this perspective, the employment in the manufacturing sector of developed economies probably stopped becoming larger, relative to developing countries, at some point during the early twentieth century, and began shrinking. A steady growth of labour-intensive industries became a central feature of global industrialisation.

Meanwhile, the current story of the global diffusion of industrialisation remains roughly as follows: During the first half of the nineteenth century, Britain became the workshop of the world, while the rest of the world came to be specialised in the export of primary products. Countries in Continental Europe and the regions of recent European settlement achieved industrialisation by learning new technology and/or by importing capital, labour and machinery with their export earnings. In the New World, the integration of vast natural resources into the international economy served as the engine of economic growth. Labour was scarce and land was abundant, and the difference in factor endowments between the old and the

new worlds induced a growth of trade, migration and investment. Thus in the nineteenth century, the growth of the Atlantic economy dominated long-distance trade. An implication of this development was that the regions of recent European settlement had a better incentive than Britain to raise labour productivity, using abundant natural resources and employing imported capital. The movement towards the development of labour-saving, capital-intensive and resource-intensive technology was most clearly observed in the United States. The need to save skilled labour led to standardisation of industrial production such as the usage of transferable parts, which in turn facilitated the transfer of technology across industries and mass production, as well as “deskilling” of labour. Industrialisation became associated with the exploitation of economies of scale.

The American frontier was exhausted around 1890, and by the early 1920s migration from Europe ceased to be encouraged. But American technology continued to lead the world, by raising labour productivity through automation, the introduction of more systematic labour management and mass marketing. Looking back from the twenty-first century, the British industrial revolution only began to show the explosive power of labour-saving technology through the use of coal and steam engines, and merely paved the way for a fuller replacement of skilled labour by capital and technology. Therefore, although the conditions for the industrial revolution may have been laid before 1800, the “Western path”, with emphasis on capital-intensive and resource-intensive technology, arguably only became fully established, as a result of the growth of the Atlantic economy.

In the meantime, the world saw an increasing dominance of the West, resulting in a widening gap between the rich West and the poor non-West. The growth of trade between the West, and Asia, Africa and Latin America was often accompanied by colonialism, which tended to reinforce inequality,

particularly between temperate and tropical zones. By the time Arthur Lewis formulated his theory of "Economic Development with Unlimited Supplies of Labour" in 1954, he took the presence of the world's reservoir of "unlimited supplies of labour" for granted, and did not find it necessary to discuss how it had been created, particularly in Asia, in the first place (Lewis 1954). His theme was how these poor countries, most of which had become independent or were on the way to independence at that time, could utilise cheap labour for economic development. Along with the discussion of unfavourable factoral terms of trade disadvantaging the poor tropical countries, Lewis emphasised the need to raise agricultural (labour) productivity as a fundamental solution to global development. It is clear that his model was based on the Western path of economic development, beginning with Britain and spreading to Continental Western Europe and the United States.

This paper suggests that there was another, much more dynamic route of the diffusion of industrialisation. This second route brought industrialisation, through Britain, and later Continental Western Europe and the United States to some extent, to the non-European world, particularly Asia. It took root in Japan first in the form of labour-intensive industrialisation, and was followed by a number of other Asian countries, particularly after 1945. By now the majority of developing countries have some industrial sectors, which have their roots in this route. Although it escaped Lewis's attention, I argue that, if we examine the process of diffusion during the last two centuries as a whole, this “East Asian path” has been just as influential as the “Western path” described above. In other words, the central proposition of this paper is that labour-intensive industrialisation constitutes one of the two major routes to global diffusion of industrialisation.

2. Initial conditions and factors affecting the quality of labour

Labour absorption and proto-industrialisation

In his 1967 article Akira Hayami described the different paths which England and Tokugawa Japan (1603-1868) followed, calling them the industrial revolution and the industrious revolution respectively (Akira Hayami 1967; for English versions see Akira Hayami 1986 and 1992). With their different mix of factor endowments, in this case of capital and labour, and assuming that no transfer of factor inputs took place between England and Japan, Hayami explained that it was natural for societies as economically-minded as these two countries to pursue different paths, and for Japan to exploit the potential benefit of increasing labour absorption.

Emphasis on labour absorption in Tokugawa Japan began in the form of labour-intensive agriculture, centring on rice cultivation. After the second half of the eighteenth century this strategy was fully extended to rural industries. Rural merchants engaged in regional commerce, while feudal domains actively pursued policies to promote agriculture, commerce and industry to earn "foreign" exchange. Both of these activities gave farmers a chance to exploit non-agricultural as well as agricultural economic opportunities. The rural household mobilised cheap labour, to produce more in response to the demand arising from the fragmental rise in rural income. By the end of the eighteenth century the daughter of a rich farmer was likely to include a silk kimono in her dowry, but this did not have to be produced in the city of Kyoto where most elaborate kimonos were made.

From the point of view of the rural household, this proto-industrial work was merely an extension of their labour absorption strategy. For example, the rural merchant would bring a loom and yarn to the peasant household and collect the cloth a month later, thus providing a small amount of income for the housewife cum weaver. Or cottage industries would bring workers

together in one place to manufacture sake, using simple tools and water power. For the rural household, the "main" agricultural work referred to rice cultivation. Both non-rice cash crop production and proto-industrial work of all sorts were called "additional" work, whether performed by household members or hired labour.

Proto-industrialisation in rural Japan had a clear impact on demographic behaviour. The sex ratio was corrected to the more natural level, and population started to grow. Under the severe constraints of land, proto-industrialisation made it possible for the income of the rural household to rise. And all of this was typically happening within the context of the peasant household. Therefore, although the term “labour absorption” has been associated with agriculture (Booth and Sundrum 1984), it is possible to extend the idea to proto-industry, and discuss the implications of full labour absorption at the peasant household level.

Did such a labour absorption path exist in Western Europe? When Mendels suggested that we should look at the “development of a labour-intensive industry by the peasants” as “the first phase of the industrialisation process” and called it proto-industrialisation, he clearly had this point in mind. “Cottage industry affected population trends. --- It made it possible for the peasants to multiply in their villages without corresponding increase in arable surface” (Mendels 1972; p.170). Of course, industrial goods produced in the village were sold outside the local market, therefore contributing to the growth of the market, but the focus here was on the effects of the growth of labour-intensive industry on demographic behaviour.

Mendels also noted that during proto-industrialisation “the surplus labour from the slack season is used, so there is no such economic problem as that of ‘withdrawing’ labour from one sector to another. In this phase, therefore, the surplus labour model can be made realistic and useful”

(Mendels 1972; p.171). The absorption of off-peak labour into the cottage industry provided the peasant household a chance to increase the household income without permanent migration. Off-peak labour could also migrate to seek seasonal agricultural work or service or construction work in urban centres. Unlike population growth, further labour absorption of the existing population did not substantially increase the demand for food. It simply released the household from the constraints of land. It was the key device to help the rise of per capita income and the accumulation of capital (Lucassen 1987, ch.6).

Tokugawa Japan

From the point of view of the East Asian peasant family economy, however, this device does not appear to have gone very far. Land was much more scarce in Japan, and a far greater variety of labour-absorbing institutions developed at the levels of the household and the village community. The maintenance of the *ie*, the family line, was assumed to be important, and the maximisation of the welfare of family members was considered more important than individual search for better life. Commercialised agriculture, temporary migration and by-employment within the household all developed, in such a way that the rural household could allocate family labour through all sorts of combinations. Since the number of work days for the “main” agricultural work was great but its labour productivity remained at a comparatively low level, farmers were used to work hard for a relatively small reward. Thus in Japan it was easier than the Western European counterpart to exploit the “additional” work to the full. A village in a relatively commercialised district in South-western Japan was described around 1840 as follows:

> Every able-bodied person works at salt making and other employments insofar as farming permits. The average amount of arable land per farm family is only 2.1 *tan* of paddy and 0.6 *tan* of upland, and cultivation is relatively easy since the terrain is level [1 *tan* was about a quarter of an acre (KS)]. In time free from farming, men make rope and rush mats and other articles by hand; and women work in the salt fields from the third to the eighth month and during the rest of the year devote themselves exclusively to weaving cotton cloth, not even taking time to cut firewood and gather grass for compost [traditional female farm work] (Thomas Smith 1988; p.83).

The land tax system, land holding patterns within the village community and the ways in which monetisation of the economy progressed combined to reinforce the development of a sophisticated division of labour within the household, possibly at the cost of the growth of a geographical division of labour and the benefit of migration. As a result, an effort to develop multiple and coordination skills, rather than specialised and individual skills, assumed priority. The improvement of the quality of labour took a specific direction of Smithian growth to accommodate such institutions.

This can be contrasted with the Western European experience where long-distance trade, fiscal-military states, urban growth and rural-urban migration encouraged a clearer tendency to depend for the improvement of the quality of labour upon geographical specialisation and monetisation. While the proto-industry in East Asia grew as a further development of the peasant family economy, in Western Europe the in-house combination of agriculture and industry was gradually replaced by the division of labour through the market. Specialised and individual skills were accumulated and diffused through urban craft guilds, while their main competitor, rural putting out, was a net consumer of technological innovation (Epstein 1998). De Vries (1994) suggested that the industrious revolution occurred in Europe too,

but perhaps more clearly than its East Asian counterpart as a response to the greater availability of consumer goods. Pomeranz follows de Vries by suggesting that in the lower Yangzi too the response to the market and changes in consumption mattered (Pomeranz 2000; p.94), in spite of the fact that the region he was concerned with consisted mainly of the peasant household of an East Asian type.

On the other hand, when Thomas Smith described the sense of time of Tokugawa peasants, he was clearly concerned with the ideology which underpinned production. “Time was regarded as fleeting and precious, and great moral value attached to its productive use. Farmers made elaborate efforts to coordinate work and to stretch nature’s constraints by the skilful use of early and late varieties, between-row planting, straw-covered planting beds, fast-acting fertilisers, and other time-saving devices. None of this ingenuity, however, was for the benefit of individuals. Time was not a personal possession but belonged primarily to families and, through them, to kin, neighbours, and villages” (Thomas Smith 1988; p.202). Indeed “industry” could be generated by a variety of motivations. The quality of labour could be improved either by the effort to produce more to maintain the status of the family or pursue common good, or through a search for material reward or individual satisfaction.

A major problem with the Lewis model is that it ignores the vital importance of proto-industry in economic development. Lewis was familiar with parts of Africa and the Caribbean, as well as the historical background against which the classical political economy emerged during the industrial revolution in Britain. In none of these cases has he encountered the massive presence of spinners and weavers, engrained in the peasant society, who were essential ingredients of East Asian economies. It is important that in Lewis's dual economy model employment in proto-industry was included in

the traditional (subsistence or non-capitalist) sector, with the result that urban modern industry was highlighted as the engine of industrialisation, regardless of each country's factor endowments and position in the world economy. While Lewis did recognise the importance of raising labour productivity in traditional agriculture, he made a critical error by applying the classical political economists' vision to developing countries with sophisticated proto-industry.

Factor endowments versus institutions

In the prevailing literature on economic development in Western Europe before industrialisation, two factors are thought to be important in promoting Smithian growth. The first concerns the balance between factors of production, especially between land and labour. The second factor is the institutional development which supported the growth of the market. It included measures to facilitate not only the growth of commodity markets but that of factor markets of land, capital and labour.

Thus North and Thomas (1970, 1973) argued that changes in factor prices in land and labour provided an essential background to the process of Smithian growth in which the geographical division of labour developed. In the Malthusian cycle, economic progress was usually made by the incorporation of new areas into the national and international markets through settlements and the opening up of land, resulting in the growth of inter-regional trade between resource-rich and labour-abundant areas. At the same time, there were moments, for instance in the fourteenth century and, again in the seventeenth century, during which population fell absolutely or relative to land, when significant institutional changes were made so as to channel resources into better use and reduce transaction costs. Financial resources could be enhanced and effectively channelled into productive use

through the development of joint stock companies, credit, insurance, and bond and security markets. Maintaining the public confidence for the government was important for such a development. The reduction of transaction costs came from better information, lower risk and secure property rights. Central to this process was the establishment of private property rights through the enclosure of commons by private landlords and the growth of the land market.

In this original North and Thomas perspective, the relationship between changes in factor prices and institutional response is only loosely defined. Changes in prices may or may not lead to Smithian growth, depending on both what kind of resources would be brought into the market (be it the New World silver, newly opened European land or the discovery of coal) and the degree to which stable and low transaction costs were maintained by the domestic and international political regimes. On the other hand, institutional changes may or may not occur, depending on the political circumstances themselves or the economic environment which conditioned them.

Recent literature on Asian economic history suggests that before the late eighteenth century both East Asia and Western Europe had sufficiently high “initial conditions” for labour-intensive industrialisation. India probably had these conditions to some degree. These observations are now being debated, and are inviting critical responses from both European and non-European economic historians. However, it seems that the main body of discussion has been based upon essentially the same points of reference, i.e. factor endowments and institutional development.

One of the virtues of Pomeranz’s perspective, set out in his *Great Divergence* (Pomeranz 2000), is that he has separated the two elements, and picked out relative factor price changes as the basic driving force behind

the making of the capitalist world economy. One “trick” which released Pomeranz from the usual stumbling block is that he put aside conventional territorial boundaries for the purpose of picking out the evidence of Smithian growth and high living standards, and identified three or four “core regions” for comparison. Thus he was able to see that there is no fundamental difference between Western Europe and the core region of China for instance, in terms of the degree to which the division of labour developed. Once we establish the presence of powerful Smithian growth in Tokugawa Japan, the lower Yangzi of China and Northern India, as well as in Western Europe, we then are in a position to discuss just how these advanced “core” regions managed to channel vast resources into productive use and reduce transaction costs, without the accompanying institutional development of Western European variety, in particular without the establishment of private property rights.

What kind of institutions functioned in East Asia, in the same positive direction as the European regime of private property rights and states system? At the international level, the China-centred tributary trade system in the eighteenth century, for example, provided a relatively peaceful environment for trade, with a degree of mutual respect between China and other states (Sugihara 1996). The Japanese response was a managed trade through a limited number of ports, but the importation of technological and managerial knowledge from China continued throughout the Tokugawa period. At the state level, China and Japan differed substantially. Fiscally, the Chinese empire was a relatively small state, and basically denied themselves the opportunity to create bond and capital markets. The market was much less regulated than Continental Europe and Tokugawa Japan. Tokugawa Japan, on the other hand, had a strong state, extracting a much larger share of agricultural surplus (at least 30 to 40 per cent) than the

European counterparts, although it did not use it for territorial acquisition or long-distance trade. The domestic market was highly regulated and inland transport was poorly developed, but, as a result of a long period of peace and stability, risk was low and transaction costs were small, without the enforcement of an elaborate code of law. In sum, although there is no common pattern of institutional development in East Asia, it is not difficult to find the institutions functionally equivalent to the European system. The establishment of private property rights is only one of several ways of providing the institutional foundations of Smithian growth.

Value regimes and welfare goals

In addition to factor endowments and institutions, the improvement of the quality of labour also depends on the perception of welfare goals of people, which may differ country by country. And different value regimes exist behind different perceptions of welfare goals. How they influenced Smithian growth is a relatively undeveloped area of investigation.

It is only recent that various types of human development index have been constructed and historians began to use them (Crafts 2001). If we take the simplest type of HDI, which is an arithmetic average of three indices of per capita income, infant mortality and literacy rate, as the welfare measure for the world of the second half of the eighteenth century, it is possible that each core region attached importance to these three measures differently. Susan Hanley suggested that in Tokugawa Japan great emphasis was put on hygiene and cleanliness, possibly at the cost of some other welfare goals (Hanley 1997). It is also possible that the East Asian core regions might have valued literacy rate more than per capita income, while the South Asian core region rather less. Comparatively speaking, the basic HDI goals were shared among different classes of people in Tokugawa Japan, in spite of the

persistence of a rather strict caste division. In India, on the other hand, the caste division may well have resulted in a greater degree of diversity in welfare goals within the society. For example, by concentrating resources to certain sections of society, it may have given the Brahmans a higher literacy rate and some merchants and moneylenders a greater chance for creating wealth than the respective Japanese counterparts could have imagined. Less egalitarian value regimes in Western Europe could well be more consistent with the division of labour and the growth of the market than egalitarian ones. In this way various types of Smithian growth could emerge as a result of different value regimes.

International factors could also affect the value regime. If a country wanted a military and naval power for territorial expansion or to discover the New World or equivalent, while another country preferred peace, closed the country and denied entrepreneurial opportunities, these decisions may well have influenced the overall profile of each country's value regime. It would be a mistake to make a judgment of the particular value regime, using another value regime, especially if it was a later one. Elsewhere I have argued that East Asia achieved Smithian growth by developing labour-intensive technology and labour-absorbing institutions, as a result of which there was no chance of the development of a navigation and military technology which in Europe prepared a scientific revolution and an industrial revolution. This in itself does not suggest the incomplete nature of Smithian growth there. If the world had ceased to exist around 1820, it would have looked as if different value regimes helped produce different kinds of Smithian growth in various parts of the world.

Furthermore, value regimes do not necessarily converge as fast as technology or material culture. They remain relevant for our understanding of different ways in which the quality of labour has been improved over time.

3. Labour-intensive industrialisation under Western domination, c.1850-1945

International competitiveness of labour

In this section we discuss how labour-intensive industrialisation occurred between 1850 and 1945. In Asia the process started during the 1850s when India began modern cotton spinning in Bombay, and this was followed by the Japanese efforts in the 1860s and the 1870s. In these cases the direct transfer of Western technology and institutions was the norm. By the 1880s, however, the Meiji government recognised that in comparative terms both land and capital were scarce in Japan, while labour was abundant and of relatively good quality, and had developed an industrialisation strategy which would exploit the comparative advantage. Japan also created a wide range of modern Asian industrial goods such as cheap cotton textiles and noodle making machines, to accommodate Asian cultural needs (Sugihara 1995). In doing so, she reactivated traditional Asian local institutions which eventually emerged as modern corporations committed to raising the quality of labour. In other words, this strategy encouraged active use of the tradition of labour-intensive technology, modernisation of traditional industry, and conscious adaptation of Western technology to different conditions of factor endowment. The path Japan developed can be termed as "labour-intensive industrialisation", as it absorbed and utilised labour more fully and depended less on the replacement of labour by machinery and capital than the Western path.

Traditional historiography maintained that Meiji Japan industrialised because it had cheap and docile labour. This argument has been used in the context of the Marxist literature which argued that it set the limit to the growth of the internal market, leading to the country's dependence on exports and aggression. Some observers from Lancashire commented that the

competitiveness of Japanese textile industry came from the use of cheap labour, including female night shifts and unacceptably poor working conditions, rather than from the “real” strength.

But cheap labour in the nominal sense does not explain why only Japan managed to industrialise in the nineteenth century more fully than any other country in the non-European world. In fact cheap and poor quality labour has usually been associated with the cases of failure to industrialise. If an African wage was a tenth of the English wage and the former’s productivity was a twentieth of the latter, African labour would be internationally “expensive”, in the sense that it would not make a competitive good in an international market, other things being equal.

The point about Meiji Japan is that it had an internationally competitive labour. That is, Japanese wages were not just nominally cheap, but cheap relative to its efficiency. The Japanese wage of a young female worker in a textile factory in the late nineteenth century might have been a sixth of the English wage, but it was likely that the productivity gap was smaller than that. Put another way, Japanese workers were not demanding an internationally demandable level of wages and working conditions. Because the international labour market was imperfect (for example, the Japanese emigration to the United States was highly controlled and later “voluntarily” restricted), the Japanese wage level was determined primarily by domestic demand and supply. And the quality of labour was mainly determined by what prevailed in the peasant household, the main source of supply. During the early twentieth century it gradually came to be reinforced by the industrial paternalism, which emerged in urban factories. Meanwhile, because land and capital were scarce relative to labour, labour remained cheap, until eventually capital became more plentiful shortly before the First World War, thanks partly to the inflow of foreign capital. Thus an overriding concern was

to minimise the cost of capital. Unlike in Western high wage economies, the technology during this period aimed at the maximum and most effective use of labour wherever capital and labour were substitutable.

Rural orientation persisted in pre-Second World War Japan. The first Japanese census conducted in 1920 found that the proportion of people living in cities was 18 per cent. Although this figure had risen to 38 per cent by 1940, it was still very small compared to most countries in Western Europe at a similar stage of development. The rate of urbanisation in Britain exceeded 48 per cent by 1840 and 65 per cent by 1870, while the "European norm" was 31 per cent in 1840 and 45 per cent in 1870 (Crafts et al. 1991). In other words, the bulk of Japan's industry was a modernised version of the cottage industries predominantly situated in rural areas. In its fully developed form in the early 1930s, the Japanese manufacturing industry had a relatively small, fast-growing modern urban sector and a large, slow-growing but steadily modernising, rural sector.

Why was the modernisation of rural industry so crucial? An obvious answer is that, given the technology gap, the relative abundance of cheap labour and the scarcity of capital, it was sensible for Japan to minimise the cost of building urban infrastructure, and specialise in the rural production of low-technology industrial goods. Thus, the bulk of industrial goods produced in Meiji Japan were hybrid in character. Low-count yarn was produced in modern cotton mills in cities, while rural female workers hand-wove this machine-made yarn on improved traditional looms (and later power-looms). And the latter was also internationally competitive, offering labour as the “additional” work of the peasant household. In pre-war Japan the peasant household continued to combine various types of agricultural and industrial work, releasing a relatively limited number of family members as casual workers, often for a limited period (Saito 1998, chs.2 to 4). It was the parallel

and inter-related development of modern and traditional sectors that ensured the international competitiveness of Japan's textile and other export industries.

Factor endowments and consumer tastes

In order to realise the potential of internationally competitive labour, one needs to create an environment in which a competitive labour-intensive good is exported. If all labour-intensive goods were domestically consumed and no trade took place, the only result of having competitive labour is that the nation would enjoy a higher living standard than a country with less competitive labour. However, if a country like Japan specialises in labour-intensive industry in an international economy by exporting labour-intensive industrial goods and importing capital-intensive goods and primary products, then she would have even greater potential for growth, by exploiting the gains from international trade. This is by and large what happened between 1860 and 1938.

Several international conditions had to be satisfied for this to occur. Under Western domination the regime of "forced free trade" emerged in Asia in this period, and most Asian countries were incorporated into the international economy. The merchant networks capable of identifying both suppliers and consumers of Asian industrial goods were readily available, in the form of overseas Chinese networks centring around Hong Kong and Singapore. The Japanese government's industrial policy was important in ensuring that Western technology was quickly employed to increase industrial production. Above all, labour-intensive industrialisation in Japan needed the presence of two types of trading partners One was an advanced country which specialised in capital-intensive industry, and the other a developing country which specialised in primary production. The amount of

exports of the countries which specialised in labour-intensive industry may increase, in accordance with the increase in the proportion of labour-intensive goods in world trade. Under the international environment of free trade, a certain number of countries would be assigned to specialise in labour-intensive industry, while others would specialise in capital-intensive industry and primary production. When a country is predominantly exporting labour-intensive good and proceeding with industrialisation under such circumstances, we see that labour-intensive industrialisation is reinforced by the international division of labour.

During the nineteenth century the international division of labour, involving the trade of a wide range of manufactured goods, developed in Western Europe, but there this three-tier division was not clear. The European international market was relatively homogeneous, and wages and labour conditions were similar. By contrast, the East Asian market and pattern of consumption were fundamentally different. Wages were a few times cheaper, and the type of mass consumer goods was quite different. Yet, unlike the rest of the non-European world, there was a very large and expanding international market of consumer goods with distinct tastes. This market had been supplied by traditional industries, and anyone that could replace them would be able to capture it. The list of Japanese exports to other Asian countries in the early twentieth century thus included cotton yarn, silk spun yarn, cotton cloth, silk cloth, undershirts and drawers of cotton knit, socks and stockings, European umbrellas and parasols of cotton knit, matches, paper and paper manufacture, pottery, glass bottles and flasks, lamps, ropes, bags, mats of straw, toilet soap, drugs and medicines (Sugihara 1986a; p.716). Most of these industrial goods had to be made in accordance with local consumer taste, be it kimono cloth or cotton undershirts for Chinese children with bottons. Although distinct consumer

taste generally favoured domestic manufacturers, it was easier for Japanese manufacturers, with similar factor endowments and culture, than Western ones to compete with local manufacturers. From the point of view of Japanese manufacturers, the Asian market was often just as important as the domestic market in volume terms. Since Asia was much more populous than Europe and Japan was effectively the first industrial nation, there was much larger room for Japanese manufacturers to develop an international labour-intensive goods market in Asia than for German manufacturers, for example, to do likewise in Europe.

Of course, India developed a modern cotton industry before Japan, and did have a chance to capture such a market. In fact she exported a sizeable amount of cotton yarn to China during the second half of the nineteenth century. It was to be taken over by Japan at the end of the century, partly because Japan's high initial conditions enabled the rapid adaptation of Western technology with the use of disciplined labour (Sugihara 1986b), and partly because both the Japanese industrial policy and British colonial rule reinforced the relative competitiveness of Japanese industries vis-à-vis Indian ones. This suggests that international competition among labour-intensive industries could choke some countries' industrial development. On the other hand, China in the 1920s and 1930s saw successful import-substitution labour-intensive industrialisation. As Chinese manufacturers captured the domestic market of plain cotton cloth, Japanese exports shifted to the more processed range. Exports of textile machinery also increased. This process shows that there is room for further specialisation within labour-intensive industrialisation. It is in this interwar context against which the theory of "flying geese pattern of economic development" was formulated (Akamatsu 1962).

The competitive advantage

The growth of exports of labour-intensive industrial goods from Japan needed to be supported by the other sectors of the economy. If capital-intensive industries in Japan were so weak that all the machinery necessary for the operation of labour-intensive industry had to be imported from abroad and local repair was found impossible, it would disturb the international competitiveness of strategically important export industries. The same would be true if local transport or services were inefficient. Therefore, those industries, which were less competitive, would also have to be fostered to some extent. The basic infrastructure, a range of machinery sector (for the production of simple tools and repair works), productive agriculture (given the transport technology and the level of infrastructure, not much food could be efficiently imported) and local service sectors (shops, inns and post offices) would be desired, to make sure that the competitive advantage of export industries would be maintained. Thus the Japanese government strove not only to make sure that the country would gain a decent international status backed by the military strength, but to implement a comprehensive industrial policy, which would guide the economy to achieve optimum resource allocation in order to retain the competitive edge of the export industry. It included the decision to raise import tariffs gradually and selectively, import cheap Korean rice in spite of the opposition of domestic farmers in the 1920s, and to drastically devalue the currency in the early 1930s (Hayami and Ruttan 1970; Sugihara 1989).

International circumstances helped Japan's labour-intensive industrialisation in several ways. For much of the pre-Second World War period Britain was not antagonistic to the industrial development of Japan. She not only saw the benefit from trade itself (in the form of Britain's exports of textile machinery to Japan for example), but was interested in exporting

capital to Japan and expanding financial, insurance, shipping businesses in Asian waters. Expanding the sterling area (yen was pegged to sterling between 1932 and 1939, yuan between 1935 and 1938) and maintaining the reputation of sterling as the key currency was also Britain's central concern (Akita 1999; Sugihara 2001a; Cain and Hopkins 2002, esp. pp.16-17). In addition, the tradition of the classical political economy remained a major influence behind British policy. In spite of the keen competition between Lancashire and Japan in the Asian market of cotton textiles, the mainstream liberal thinking in Britain was inclined to argue for the benefit of free trade.

> [Japan] is assailed as a nation which is undermining the standards of life of Western people; and odium is also cast upon her because, it is said, her success has been achieved at the cost of lowering the standard of life of her own workers. Those circles in which some vestige of the old liberal economic and political traditions is still preserved might have been expected to reply that, harmful as cheap Japanese exports may be to established British industries, Japan, nevertheless, confers a benefit on impoverished Asiatic consumers by supplying them with those goods, and that it is irrational and ungenerous to deny them that benefit (Allen 1938; pp.16-17).

It is worth noting that this view was expressed as late as the late 1930s, and was published after the outbreak of the Sino-Japanese War of 1937. While the need to secure the raw material and energy supply for rapid industrialisation was an important background to Japan's aggression and war, and the expansion of the yen bloc had a tendency to tie the colonies and the sphere of influence strongly to the Japanese economy, Japan nevertheless depended in some crucial respects on her trade and monetary links with Britain and British colonies, as well as with the United States (Kagotani 2000). The disappearance of these links, with the outbreak of the

Second World War in 1939, finally eliminated any hope of containing the Japanese military and those who sought for the political and economic autarky.

Before 1945 only a small number of other Asian countries such as India, China and Korea proceeded with labour-intensive industrialisation. Only China received a degree of state reinforcement, aimed at import-substitution industrialisation. Both the development of labour-intensive technology in East Asia, and the colonial rule by Western powers in South and Southeast Asia made East Asian producers of industrial goods competitive vis-à-vis those of other Asian countries. Thus there developed an industrialisation-based international division of labour within Asia, and Japan, and to some extent China, was able to exploit the South and Southeast Asian markets for industrial goods. This was reflected in a much faster rate of growth of intra-Asian trade than of world trade between 1880 and 1939 (Sugihara 1996a chs.1, 4; for English versions see Sugihara 1986a and 1998).

4. The post-war diffusion of labour-intensive industrialisation

The post-war debate on the industrialisation strategy

After 1945, in spite of the disruptions caused by the war, industrialisation efforts in Asia accelerated. The single most important factor was decolonisation. During the late 1940s and the 1950s most Asian countries achieved independence and began implementing their own programme of industrialisation. The efforts were invariably affected by the international framework of the Cold War, however. The pre-war pattern of intra-Asian trade was replaced by a rather strict division between the United States-led regime of free trade, and the other countries either under the

influence of the Soviet-led socialist regime or following the non-alliance movement led by Nehru and Sukarno. The latter groups substantially withdrew from world trade, and only a small number of countries along the Pacific Rim, Japan, South Korea, Taiwan, Hong Kong and Malaya remained fully integrated into the international economy.

During the 1950s and the 1960s, a number of South and Southeast Asian countries attempted import-substitution industrialisation, trying to shift their status from the primary producer to the industrial economy. But it was not easy to alter the pattern of international division of labour where developed countries exported manufactured goods and developing countries exported primary products. At UNCTAD in 1964, Prebish stressed the need for import-substitution industrialisation, in order to respond to the worsening of the terms of trade for primary producers (Esho 1998). In most cases, import-substitution was thought to be possible through heavy protection, low interest rates, overvalued currency and fiscal concessions. Emphasis was placed on the development of capital-intensive industries, which were expected to bring the benefit of technology and industrial linkages to the rest of the economy. In India and Indonesia, but also in China and South Korea and Taiwan under very different political settings, the idea of industrialisation led by the leading (capital-intensive, heavy industry) sector was influential at a certain stage of their development (Oshima 1987).

Other international organisations, such as the ILO, were unhappy about such a tendency. “This led to a marked bias in favour of capital-intensive large scale industries with the excessive use of scarce capital and inadequate participation of small scale industries. There was hence little expansion in the demand for labour and the strategy did little to solve the pressing problems of unemployment and underemployment” (Amjad 1981; p.1). Together with the neglect of agriculture, underemployment, real wage

stagnation and the unequal distribution of income resulted. In response to these criticisms, the “new orthodoxy” emerged emphasising rural development and labour-intensive industries, and “the creation of an economic environment which reflects factor scarcities and greater reliance on the medium and small firms as the production unit” (Amjad 1981; p.2). And the issue of “human resource development” moved to the centre stage of development priorities (Amjad 1987; p.1).

Both Taiwan and South Korea had a large labour-intensive industry sector at an early stage, and proceeded with export-led industrialisation, importing intermediate goods and capital goods from Japan, processing them with the use of cheap labour, and exporting them to the United States (Hattori and Sato 1996). Around the middle of the 1960s Southeast Asian countries, later to be called ASEAN, began to change their industrialisation strategy. Broadly speaking, it was accompanied by the more open economic policy with emphasis on the exports of labour-intensive industrial goods. After the policy shift of 1979, China also became an important exporter of labour-intensive industrial goods. Looking back, it looks as if labour-intensive industrialisation in Asia as a whole had continued in the second half of the twentieth century, with a relatively short period of interruption in which capital-intensive industrialisation strategy was dominant. Judging by economic performance, a tendency was that a country like India, which had pursued capital-intensive industrialisation strategy for a long time, lagged behind, while a country like Taiwan, which had quickly shifted to the labour-intensive industrialisation strategy, grew very fast.

The Japanese miracle and the “flying geese”

The Japanese “high-speed growth” during the 1950s and the 1960s gave an important stimulus to this regional policy shift. After its defeat in

World War II, the Japanese government was determined to pursue a programme of full economic modernisation, primarily through expansion of the domestic market. But the problem of resource constraints (mentioned above as a background to Japan’s aggression in the 1930s) remained a critical bottleneck. It was the Cold War that changed the American attitude towards Japan's economic future. By the late 1940s Japan was regarded as a country whose economic strength should be deployed to protect and further the "free world" zone in East Asia, and was allowed to pursue the systematic introduction of capital-intensive heavy and chemical industries. Although heavy and chemical industrialisation was attempted in the 1930s and in some ways accelerated during the period of the wartime controlled economy, it was at this point that the character of Japanese growth shifted from labour-intensive industrialisation to the fusion of the two paths, and its experiment began to assume global significance.

On the face of it, when world resources came to be freely allocated through trade and the pressure on land eased, East Asia could have converged with the West, as simple “convergence” theory predicts. In practice, however, the population of East Asia and the rest of the developing world was so large that it would have been impossible to raise their standard of living to the Western level, given the level of technology and available world resources. In any case, American technology was so heavily biased towards resource-intensive and capital-intensive technology that it was ill-suited to the needs of developing countries. But to lower Western standards of living for a more egalitarian world would have been politically unacceptable to the population of advanced Western countries. Thus, a much more likely scenario would have been the persistence of the North-South divide, and the continued struggle for a greater share of income and resources among nations, leading to military and political tension. Fusion

only took place because of the presence of two highly contingent factors; the Cold War regime accidentally creating a vacuum which allowed Japanese industrial growth, and the Japanese determination to achieve full economic modernisation using the fewest possible additional resources, which was an instinctive reaction to the self-inflicted consequences of the Asia-Pacific War.

As it happened, technology was freely transferred from the United States under the Cold War environment, while Japan (and later NIEs) was allowed to import all the natural resources they needed from all over the world. While the United States specialised in resource- and capital-intensive military, space, aircraft and petro-chemical industries, she was happy to help East Asia enlarge its industrial structure from light industries (such as cotton textiles) to the non-military and relatively labour-intensive segments of heavy and chemical industries. These included shipbuilding, cars and consumer electronics. A number of NIEs and ASEAN countries were under politically repressive authoritarian regime which however was committed to economic growth, and they were able to get support from the United States (Suehiro 2000, ch.5). The Cold War regime in turn was implicitly supported by East Asian growth, as it demonstrated the best side of capitalism. In this sense, the Cold War regime and East Asian growth were the two sides of the same coin.

As the Cold War turned to “long peace”, military demand flattened, while the mass consumer goods market in which East Asia specialised expanded, and the region’s industrial exports to the United States, as well as intra-Asian trade, rapidly increased. Both U.S.-Europe trade and intra-European trade grew steadily but slowly. Europe, gradually recovering from war, managed to create a politically-charged European Economic Community, with a rather protectionist stance against the rest of the world. With decolonisation, the sterling area gradually disintegrated, but those

newly independent countries not directly connected to the Asia-Pacific were slow to feel intense competition, and failed to exploit the potential gains from international trade. The Soviet-centred communist-bloc trade also failed to generate the dynamics of technological advance and new consumer demand. Thus, the growth of post-war trade was driven by the leadership of the United States and the high-speed growth of Japan and other Asian countries.

Within Asia the fusion between the traditional commercial skills of overseas Chinese and Japanese technology helped the diffusion of industrialisation. This diffusion has been captured in terms of the “flying geese pattern of economic development”. In this scheme, the relatively labour-intensive low-technology industry of a more advanced country (such as Japan) would be very rapidly transferred to the country next in line (such as Taiwan), which in turn, within the space of ten years or less, would transfer it to others (such as Malaysia). The more advanced county would be under constant pressure to restructure its industries by the competition from the low-wage countries. State intervention through the formulation of industrial policy was essential to this process. Yet East Asian countries, particularly Japan, were far more committed to free trade than Europe and the United States, and were willing to let international competition rule the region’s economics and politics. The income gaps that had been successively created, first between Japan and NIEs, then between NIEs and ASEAN, between ASEAN and China, and now between China and other parts of Asia, provided the major opportunities for technological transfer and cultural fusion. By the 1980s the centre of world trade had decisively shifted from the Atlantic to the Pacific.

The economic success of Japan and NIEs prompted the change in Chinese policy in the late 1970s, which vastly enlarged the population and

market of the Asia-Pacific region. In turn, economic forces based on East Asia's industrial strength, rather than the Cold War regime, began to dominate international relations. With the collapse of the Soviet Union in 1989, the United States began to reduce its commitment to military industry, and developed a strong will for financial supremacy (the Wall Street – Treasury Complex), which resembles the relationship that existed between the City of London and the Whitehall, which dominated international relations during the late nineteenth and early twentieth centuries. The new complementarity between the American financial interests and East Asia's industrialisation replaced the old (military/non-military) division of labour, and provided the basis for a continued growth of trade during the 1990s (Sugihara 2001c).

Factor endowments and consumer tastes

The most immediate international economic force that united the economies along the Pacific rim was the "second" transport revolution, involving the introduction of large tankers, the upgrading of port and related facilities, road and railway connections and the containerisation of key industrial goods transport. Suddenly, the biggest ocean on earth began to provide the biggest opportunities for trade, as the reduction of transportation costs connected countries with great diversity in factor endowments and consumer tastes.

How should we explain the explosion of trade growth in the Pacific? Ricardo (and later Hecksher-Ohlin) argued for the "gains from international trade", according to which, if two countries with different factor endowments or productivity begin trading, both would be better off than in the case of no trade. This was the basis on which to explain the rise of the Atlantic economy. But the diversity of factor endowments and productivity, reinforced

by the international order mentioned above, which existed across the Pacific Ocean was much greater. On the one hand, it had densely populated and resource-poor East Asian countries with varying wage rates and technological capabilities. Resource- and capital-intensive industries could not have been easily competitive there. The United States, on the other hand, needed to exploit the advantage of its economies of scale in resource- and capital-intensive industries. At the same time, the United States, Canada and Australia were eagerly looking for customers of their primary products (such as cotton and iron ore), now that Europe lost its capacity for rapid import growth. Within East Asia, a “flying geese pattern of economic development” formed the basis of the rapid growth of intra-Asian trade of high technology industrial goods.

In all of these developments, a simple principle that the greater the diversity, the greater the trade opportunity, ruled. There was a good case for “open regionalism”, which advocated for lower tariff barriers within the region, but, unlike EU, without discriminating against countries outside the region. In spite of economic nationalism, Asian countries enjoyed the presence of Hong Kong, and to a lesser extent, Singapore, as free ports. Most growth economies of Japan, NIEs, ASEAN and China traded heavily via these ports, especially with the United States and intra-regionally. As long as it was believable that the region was the fastest-growing, it would have the most to gain from trade. Open regionalism was thus adopted as the guiding principle for APEC in the late 1980s (Garnout and Drysdale 1994).

Furthermore, there occurred a much more comprehensive technological and cultural fusion between different civilisations than the world had ever seen. Already in the 1960s, East Asia had made a significant contribution to the emergence of the mass consumer market in the United States. For example, the East Asian textile complex, made up of Japanese

man-made fibre manufacturers, Taiwanese weavers, Hong Kong finishers and Japanese general trading companies, were competing well in the lower end of the American market of clothing and apparel (Arpen et al. 1984). During the 1980s and 1990s technological fusion became a two-way process. Not only did Japan absorb a wide range of American technology and culture and produce internationally competitive cars and consumer electronics, but also the American manufacturers in turn responded to the Japanese challenge by adopting some Japanese production methods. In other words, convergence, as well as specialisation through trade, occurred. Under such circumstances, international competition for finding the best input mix became fierce, and the Asia-Pacific economies became used to constant change and rapid growth.

The Asian market of mass consumer goods has also seen an unprecedented degree of fusion of consumer tastes. Part of the dynamism of the American mass consumer market during the 1950s and the 1960s came from the fact that a variety of European cultures and tastes were freely blended to form a new mass consumer culture. In East and Southeast Asia in the 1980s and the 1990s, a much wider range of cultures and tastes came to be actively blended, to create diverse patterns of food, clothing and housing. And, with the rapid rise of per capita income, the routine household expenditure began to include a variety of consumer electronics, cars and computers. While this meant a greater demand for relatively culture-neutral goods (including intermediate goods), much of it coming from the machinery industry, it by no means pointed to the “universalisation” of consumer tastes. For example, a piece of simple computer software in a local language (but the size of the Chinese population could make it a potentially huge market) may need a design which would match the “feel” of Chinese characters and culture. And it is usually those East Asian entrepreneurs who have inherited

the skills of translating local cultural codes to economic values that could respond to these needs. Meanwhile, technology could flow from the United States, and Western merchants could secure a fair share from the long-distance trade relating to it. The point is that if two or more different civilisations develop slightly different types of mass consumer markets based on different languages and cultures while at the same time a strong tendency for technological and cultural convergence is at work, business opportunities are greater than in the mono-cultural situation. Here too the principle that the greater the diversity, the greater the trade opportunity, ruled (Sugihara 2001c).

All of these developments provided East and Southeast Asian economies with a route from labour-intensive industrialisation to the more comprehensive industrialisation. Relatively simple segments of labour-intensive industries were progressively assigned to low wage economies, while relatively labour-intensive segments of capital-intensive industries (part of machinery, automobile and computer industries) were progressively transferred from the United States and Western Europe to East and Southeast Asian countries. The exploitation of diverse consumer culture also gave local and regional suppliers, of usually labour-intensive goods and services, an additional advantage. As long as the quality of labour improved to respond to this rapid upgrading of the industrial structure, labour-intensive industrialisation naturally led to the more comprehensive industrialisation, incorporating larger and larger segments of capita-intensive industries into its structure, while remaining relatively capital- and land-scarce, hence with a tendency towards resource-saving technology. Meanwhile, the liberal trade regime continued, with a much greater level of international contacts of trade and capital flows.

The route to the improvement of the quality of labour

By the early 1950s Japan regained the position of the world's largest exporter of cotton textiles, and was replaced in this position by China in the early 1970s. The chain of development of labour-intensive industries across other Asian countries has been impressive, starting from Hong Kong and spreading on to Pakistan, Taiwan, South Korea, Thailand and Indonesia, and has by now reached many other countries, including those with the lowest levels of per capita income. Much of this was rural-based.

> The evidence indicates that rural non-farm activities carried out mainly in small-scale enterprises (including farm household enterprises) are a very important source of employment and income in developing countries. As much as 30 to 50 per cent of the rural labour force is either primarily or secondarily engaged in a wide range of non-farm activities, which generate 20 to 40 per cent of rural household income. Particularly significant is rural manufacturing. Employment in this sector often exceeds that in urban manufacturing establishments; rural-based, small-scale industries are generally not only more labour-intensive, but also more productive per unit of scarce capital than their large-scale counterparts (Yujiro Hayami 1998, p.2).

At the same time, the labour market was gradually enlarged to include higher-skilled, better paid jobs. The flying geese pattern of economic development suggests the growth of such a hierarchical structure of the regional labour market where high-wage economies possessed labour force of a high quality with high level of education, while low-wage economies depended on cheap labour without education and training. The point about the Asian labour market was that, while the amount of migration was small relative to the total population (national boundaries were relatively strictly observed and large countries such as India and China heavily regulated internal migration), people were extremely keen to be educated and trained

because there was a rapid rise in wages accompanied by the growth of demand for highly skilled jobs. Heavy investment in education is partly a result of the relative lack of investment opportunities at home, but it also reflects the awareness of the need to improve the quality of labour, by both government and society. In some important respects technology and commercial and managerial skills crossed national borders rather freely. American and Japanese direct investment and the overseas Chinese networks played an important part in these transmissions. As the wage rose and labour shortage intensified in Japan and NIEs in the late 1980s, there was an increasing pressure for imports of labour (Godfrey 1992, p.39). In the 1990s unskilled labour was imported to some high-wage economies in the region.

Of course, not all industrial employment in labour-intensive industries has been encouraged by the government, nor has it been possible to make it internationally competitive. Taking the case of independent India, it was the import-substitution industrialisation strategy that made it very difficult to pursue labour-intensive industrialisation. First, there was a heritage of the nationalist movement, which advocated the protection and development of traditional cottage industries, including economically inefficient sectors like khadi and handloom segments. Partly inheriting the Gandhian tradition and partly in the more explicit effort of creating employment, these sectors had been isolated from international competition. Meanwhile, the government protected the large-scale modern cotton textile industry, which in turn provided the traditional weaving industries with cheap machine-made yarn. Labour in the organised sector was legally protected, which made it very difficult for any factory to lay off its workforce. Furthermore, because of the virtual prohibition of the imports of textile machinery and the installation of new machinery in the factory, there was very little chance of the rise in

productivity or improvement of the quality of yarn. As a result, the Indian cotton textile industry went through a long period of isolation from rapid technological advance in Asian countries, led by Japan (Itoh ed. 1988; Leadbeater 1993).

The ideology for the political and economic autonomy remains powerful in India to this day. After 1965 several attempts were made to liberalise the economy without much success. The policy shift of 1991 realised a degree of liberalisation of trade and capital flows, and was a step towards deregulation, but it does not represent a major ideological change in economic policy among the Indian elites. In particular, there is no sign of significant increase in the expenditure on education and welfare for the ordinary people. Yet a high level of capability based on education (especially literacy rate) and hygiene (especially low infant mortality) is clearly a necessary, though not sufficient, condition for economic development. In this respect the Chinese achievement during the pre-reform period (1949 to 1979) was far more impressive (Dreze and Sen 1995 and 1997).

Nevertheless, the economic reforms of 1991 sharply corrected India's bias towards strong economic ties with the Middle East and the former socialist countries. Export growth in the 1990s mainly came from labour-intensive industrial goods, including woven cloth, knitwear, garments, leather, machine components and software. Primarily through exports of textiles and apparel, India became progressively integrated into the international economy during the 1990s (Sugihara 2001b).

By the end of the twentieth century, therefore, most of Asian labour employed in the industrial sector came to be in touch with, if not fully became integrated into, a competitive international economy. It is worth recording that in 1994-95 over 14 million people were employed in the textile sector in India alone (Roy 1998). And, there was a route which each country

could follow, from the low-wage economy based on unskilled labour to the high wage economy with skilled labour. Slowly but steadily, this route expanded, as the old-fashioned idea of capital-intensive industrialisation faded. The labour-intensive route proved to be the main route to industrialisation in Asia during the second half of the twentieth century.

While the effects of this chain of diffusion cannot be seen as comparable to those of the global diffusion of high technology in a number of other respects (such as the effects on capital accumulation or on the international political and military order), it has surely been significant in terms of the creation of global industrial employment. In fact the majority of the world's industrial population must now be primarily influenced by this diffusion.

5. Concluding remarks

The central proposition of this paper has been that labour-intensive industrialisation constitutes one of the two major routes to global diffusion of industrialisation. This position has some further implications. First, it not only implies that the “Western path” of economic development is not the only route to industrialisation, but, it is not an independent route either. The pattern of global division of labour since the second half of the nineteenth century suggests that the capital-intensive and resource-intensive technology developed, by the use of a disproportionate amount of global resources available to mankind at each stage of development. There was no prospect towards a global equalisation of income through the direct diffusion of such a technology to the rest of the world. The global diffusion of industrialisation was made possible by the development of labour-intensive and resource-saving technology, which provided the majority of world’s

industrial employment. This labour-intensive route combined cheap labour and Western technology to produce a capitalism aimed at a fuller exploitation of human potential as labour. If we are interested in understanding the potential, reality and consequences of capitalism, we need to capture this aspect of industrialisation by placing the improvement of the quality of labour in the centre of our discussion. Only by so doing will we be able to assess the achievements and limits of the “Western path”, which, by the efficient use of large amounts of capital and resources, brought about several technological breakthroughs, accompanied by the managerial revolution and the scientific management of labour.

Second, the connection between labour-intensive industrialisation and demographic patterns, which had been taken up in the proto-industry literature but not fully developed with regard to the diffusion of industrialisation, must be explored further. An implication of this paper is that we need to discuss the possibility that the employment opportunities created by labour-intensive industrialisation encouraged population growth in a major way. Not only did this stimulus release severe resource constraints arising from the shortage of land, but it supported a slow but steady rise of labour productivity in agriculture by offering additional work opportunities in the countryside and beyond. Improved agriculture in turn fed more people. This familiar linkage must be applied not only to the country-level analysis but to the understanding of economic development at regional and global levels, since international trade, migration and the flows of capital increasingly helped the more efficient global resource utilisation during the last two centuries. In so far as labour-intensive industrialisation embraced the gradual improvement of the quality of labour, this was the main route by which mankind escaped the Malthusian trap of overpopulation and the Ricardian trap of rising food prices. In the end, it was this virtuous circle, not

the sudden availability of vast resources in the New World, that sustained the global diffusion of industrialisation.

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