Chapter 7

Mass Migrations in the Poor Periphery

The global boom between 1820 and World War I involved more than simply the Greater Atlantic economy. The periphery was pulled in to the boom as well, and the central global shock that triggered the periphery's participation was, first and foremost, a massive favorable terms of trade shock that stretched out over more than a half century. Only then, second, did mass migrations respond thus to help the periphery generate the impressive export supply response that followed. The relative price of exportables had to rise dramatically if this process was to be set in motion in the resource-abundant parts of the periphery: Southeast Asia -- Burma, Java, Malaya, the Philippines, Siam, and the Straits Settlements; South Asia – Assam, the Punjab, and Ceylon; tropical and semi-tropical Latin America – the Caribbean, the Brazilian northeast, British and French Guiana, and coastal Peru; north Africa, East Africa and the Indian Ocean – Egypt, Kenya, Mauritius, Natal, and Reunion.[1] And rise they did.

This chapter starts by describing the forces that account for the terms of trade boom, and then goes on to document that boom. With those foundations in place, the chapter then explores the mass migrations that followed: one estimate has it that 48-52 million emigrants left India and China for labor scarce and resource abundant locations elsewhere in the periphery (McKeown 2004: 156), although confirmation of the high return migration rates are hard to come by (Lai 2002: 230). To what extent was there segmentation between labor markets in core and periphery? How important were distance and transport costs in creating big wage gaps between labor scarce and labor abundant regions around the periphery? Was poverty a binding constraint on free migration within the periphery? What were the various institutional solutions to this poverty

constraint? Did the mass migrations produce real wage and relative factor price convergence in the periphery, a convergence that was true of the core (Chapter 4)?

Export Booms in the Resource-Abundant and Labor-Scarce Periphery

Setting the Stage: Thinking about Prices

As Chapter 3 documented, transport costs dropped very fast between 1820 and 1860. Here, we document their continued fall during the rest of the century. These powerful globalization forces were partially offset by a rising tide of protection in the Greater Atlantic economy after mid century, but only partially. Declining transport costs accounted for two-thirds of the integration of world commodity markets over the century following 1820, and for *all* of world commodity market integration in the four decades after 1870, when globalization backlash offset some of it (Lindert and Williamson 2003: Table 1). Note, however, that the late 19th century tariff backlash was absent in Asia, the Middle East and Africa, partly because they were colonies of free traders, partly because of the power of gunboat diplomacy, and partly because of the political influence wielded by natives who controlled the natural resources that were the base of their exports (Lewis 1978a, 1978b; Rogowski 1989; Williamson 2004a, 2004b). Without the Greater Atlantic tariff backlash to mute them, trade-creating, positive external price shocks turn out to have been even bigger and more ubiquitous in the periphery than those which occurred in the Greater Atlantic economy during the first global century.

There are at least two reasons why commodity prices had bigger effects on wages and returns to natural resources in Asia, Africa and the rest of the tropical periphery. First, the commodity price shocks were bigger, for the reasons already given. Second, land and other natural resources were much more important factor endowments in primary-product exporters. The impact of price shocks on relative factor prices are much bigger in economies where

(immobile) land and other natural resources are important: changes in the returns to land, natural resources and plantation labor relative to both "free" labor and industrial capital is far bigger in the specific-factors model[2] than between capital and "free" labor in the more standard two-factor Heckscher-Ohlin model; that is, while specific factors could not escape bad price shocks when they hit their products, they *did* enjoy big gains in wages and rents when the price shocks favored them. Why do we care? Because it's the derived demand for those factors of production that will spill over in to excess demands for unskilled labor in the export sector, and thus create a potential role for mass migrations.

Transport Revolutions, Colonial Administrations and Gunboats in the Periphery

Every historian knows the components of the 19th century world-wide transport revolution, and we have reviewed some of it already in Chapter 3. But it's important to stress that the transport revolution was not limited to the Atlantic economy.

Except for exotic high-value and low-bulk products, distance seems to have almost isolated Asian producers and consumers from Europe until the early 19th century. Transport innovations subsequently changed all that. The Suez Canal (opened in 1869), cost-reducing innovations on sea-going transport, and railroads penetrating the interior began to liberate Asia from the tyranny of distance by 1914.[3] The decline in freight rates between 1870 and 1914 was just as dramatic on routes involving Black Sea and Egyptian ports, and perhaps even more so (Harlaftis and Kardasis 2000). The tramp charter rate for shipping rice from Rangoon to Europe fell from 74 to 18 percent of the Rangoon price between 1882 and 1914, and the freight rate on sugar between Java and Amsterdam fell by 50 or 60 percent (Williamson 2000, 2004b; O'Rourke and Williamson 1999: Chp. 3). Furthermore, there was an equally dramatic decline in transport costs *within* the periphery. The freight rate on coal between Nagasaki and Shanghai fell by 76 percent between 1880 and 1910, and total factor productivity on Japan's tramp freighter routes

serving Asia advanced at 2.5 percent per annum between 1879 and 1909 (Yasuba 1978: Tables 1 and 5).

While the fall in transport costs was dramatic, it was not the most important event opening up 19th century Asia to global forces. Under the persuasion of Commodore Perry's American gun ships, Japan signed the Shimoda and Harris treaties and in so doing switched from autarky to free trade in 1858. It is hard to imagine a more dramatic switch in commercial policy since Japan's foreign trade quickly rose from nil to 7 percent of national income.[4] Other Asian nations followed the same liberal path, most forced to do so by colonial dominance or gunboat diplomacy. Thus, China signed a treaty with Britain in 1842 that opened her ports to trade and set a 5 percent *ad valorem* tariff limit. Siam avoided China's humiliation by going open on its own, and adopting a 3 percent tariff limit in 1855. Korea emerged from its autarkic Hermit Kingdom about the same time, undergoing market integration with Japan long before colonial status became formalized in 1910. India went the way of British free trade in 1846, and Indonesia followed Dutch liberalism. Thus, and in contrast with the Atlantic economy, sharply declining transport costs contributed to commodity price convergence in Asia without any offsetting rise in tariffs.

What was the impact of these transport innovations on the cost of moving goods between markets? Liverpool wheat prices exceeded Chicago prices by 58 percent in 1870, by 18 percent in 1895, and by 16 percent in 1912. Overall price convergence was even greater when account is taken of the collapse in price gaps between mid-western farm gates and Chicago markets, as well as between Liverpool and British consumers. This price convergence in Anglo-American wheat markets was repeated for other foodstuffs, like meat, butter and cheese, although these three had to wait for the advances in refrigeration made towards the end of the century. These Anglo-American trends can also be documented for price gaps between London and Buenos Aires,

Montevideo and Rio de Janeiro. The Ukraine and the rest of the east European periphery was also part of this world-wide price convergence: wheat price gaps between Odessa and Liverpool of about 40 percent in 1870 had just about evaporated by 1906. Commodity price convergence involving the eastern Mediterranean was just as powerful. The price spread on Egyptian cotton between Liverpool and Alexandria plunged off a high plateau after the 1860s. Liverpool price quotes exceeded those in Alexandria by 63 percent in 1837-1846, by 41 percent in 1863-1867, and by 5 percent in 1890-1899 (Issawi 1966: 447-8).

Transport cost declines from interior to port and from port to Europe ensured that Asian and African export-oriented enclaves became more integrated into world markets. The raw cotton price spread between Liverpool and Bombay fell from 57 percent in 1873 to 20 percent in 1913, and the jute price spread between London and Calcutta fell from 35 to 4 percent. The same events were taking place even farther east, involving Burma and the rest of Southeast Asia: the rice price spread between London and Rangoon fell from 93 to 26 percent in the four decades prior to 1913. These events had a profound impact on the creation of an Asian market for wheat and rice, as well as a truly global market for grains (Latham and Neal 1983; Brandt 1985; Kang and Cha 1996).

This narrative is summarized in Table 7.1 where we add an attempt to quantify the magnitudes of the transport revolution over the century or so between 1870 and 1990. The evidence there confirms the assertion that the spectacular pre-World War I decline in transport costs was biggest in Asia. It also confirms that the decline slowed down a bit during the interwar decades, and that transport costs have declined only modestly since 1950, thus pointing to the 19th century as a special globalization episode.[5]

The Terms of Trade Facing Export Enclaves in the Periphery

What happened to the relative price of the primary products exported by the periphery to the booming industrial markets of Europe and North America during the first half of the 19th century? The way to answer that question is to look at what happened to the terms of trade facing the world's industrial leader (and colonist), Britain. Figure 7.1 plots Britain's net barter terms of trade, the ratio of its export (manufactures) to import (primary products) prices, and what we see is a spectacular fall in the index: it fell by half over the four decades between 1820 and 1860. Therefore, the terms of trade facing Britain's Asian, African and Latin American trading partners, the primary product exporters, must, on average, have at least doubled. It probably increased even more, since, as we argued above, the world transport revolution ensured that the relative price of primary product exports increased by even more at the source. Of course, it wasn't just a transport revolution that explains this terms of trade behavior, since very rapid productivity advance in the core's export sector (manufactures, especially textiles) probably made the greater contribution. Whatever the case, this huge improvement in the terms of trade facing primary product exporters in the periphery is illustrated by Latin America in Figure 7.2, where it is apparent that the boom continued until the early-mid 1890s. Furthermore, it appears that the terms of trade in this part of the periphery doubled over the seven decades following 1820. Things were pretty much the same elsewhere, except that the secular terms of trade bubble burst somewhat earlier. Thus, the Egyptian terms of trade rose by 2.5 times between the early 1820s and its secular peak in the early 1860s, while the Ottoman terms of trade rose the same amount between the late 1810s and its peak in the early 1860s (Williamson 2004b: Figures 2.7 and 2.8). Meanwhile, the Indonesian terms of trade rose by 2.7 times between the late 1820s and the late 1860s (Korthals Altes 1994: 159-60).

The terms of trade boomed everywhere in the tropical and semi-tropical periphery up to the 1860s and 1870s, it sputtered around high levels over the next two decades, and then it fell everywhere thereafter. The terms of trade collapse across the 20th century is, of course, well known and has been central to debate over policy in what we now call the Third World. Indeed, it provoked Raoul Prebisch (1950), Hans Singer (1950) and W. Arthur Lewis (1978a, 1978b) to infer that the primary product boom was over and that an epoch of deterioration had set in, an event that they thought warranted pro-industry intervention. Our interest at present, however, is the 19th century.

Impact in the Periphery: Theory

What were the effects of the soaring terms of trade facing the tropical periphery over the half century after 1820 and the steep decent over the half century after 1890? W. Arthur Lewis (1954, 1978a, 1978b) pioneered exploration of this question, looking at factor market responses in the primary-product exporting economies. Lewis composed a long list of effects that included what is central to this chapter -- international labor migration, real wages and income distribution. Since the factor inputs that mattered most in the tropical economies were land and labor, the best way to explore the income distribution impact there is to focus on the wage-rent ratio -- the returns to labor relative to land. Ever since Eli Heckscher and Bertil Ohlin wrote about the problem almost a century ago, we have learned that primary-product export price booms raise the relative demand for land and other natural resources. Note that we have been talking about *relative* factor prices, not *absolute* factor prices. We have said nothing so far about real wages and living standards for common labor. Positive terms of trade shocks of the magnitude observed for the tropical periphery across most of the 19th century must have raised real wages and living

standards there, at least in the short run and medium term. But in the long run, living standards are also driven up when technological advance, capital-deepening and human capital improvement surpass population growth. In the tropical periphery before 1914, these forces were pretty modest. After all, this is the period during which growth in the center far outstripped that of the periphery, one during which the gap between the west and the rest became very large (Maddison 1995; Pritchett 1997; Landes 1998).

We will document below the wage-rent (w/r) evidence, but first we need to elaborate a bit on the theory. If the price of primary products (here called 'agriculture', and thus Pa for its price) rises, the isoprice curve for primary products shifts outwards, land rents rise, and the rent-wage ratio rises still more. In this example of a favorable price shock to the country specializing in agriculture, there is a magnification effect since the rise in rents exceeds the rise in Pa. By symmetry, when Pa/Pm (where Pm is the price of manufactures) falls, the wage-rent ratio rises, again by a magnification effect.

How big is the magnification effect? In his classic paper on the specific-factor model, Ronald Jones (1971) showed exactly what determines the size of the magnification effect. Suppose the agricultural sector uses mobile labor, earning the wage w as before, and immobile land, earning the rent r as before. Suppose further that the manufacturing sector that uses mobile labor and immobile capital, the latter earning an interest rate i. Now, introduce a shock to this economy by an improvement in its terms of trade, Pa/Pm. It must follow that

$$\Delta r > \Delta Pa > \Delta w > \Delta Pm > \Delta i,$$

where the Δ refers to rates of change, and where it is clear that changes in the returns to the specific factors, land and capital, are more pronounced than the return to the mobile factor, labor: after all, while labor can flee the sector absorbing an unfavorable price shock and race to the sector absorbing a favorable price shock, an immobile factor cannot. If instead plantation labor

and "free" labor do not move between sectors smoothly, then the wage on plantation labor should rise even more. What happens to the real wage is determined by what the workers consume. If they do not consume much of the export good (tea, sugar, rubber, guano, coffee, cotton, spices, jute, hemp, tin), but rather consume a lot of the import good (textiles, grains), then real wages will rise ($\Delta w > \Delta Pm$) and there will be a spillover demand for immigrants. Furthermore, the rent-wage ratio responds as

$$(\Delta r - \Delta w) = \lambda(\Delta Pa - \Delta Pm)$$

where $\lambda > 1$ denotes the magnification effect. Thus, globalization-induced terms of trade shocks can have different effects on wage-rent ratios depending on the size of the shock and the structure of the tropical economy in question, but the expectation is that $\lambda > 1$ everywhere. Typically, then, a positive terms of trade shock favoring the tropical periphery's export sector should have raised real wages but created more inequality.

These are likely to be the essentials driving factor demand, inequality, real wages and mass migration in the tropical periphery across the first global century.

Wage Gaps and Costs of Moving in the 19th Century Periphery

The relative price boom for the exports of tropical products certainly increased the demand for unskilled labor in those parts of the periphery after about 1820, but there was already plenty of incentive to move from labor abundant to labor scarce areas.

Recall from the previous three chapters the size of the wage gaps between emigration and immigration regions in the Greater Atlantic economy. In the 1850s, the biggest gap between the west European emigrant's home wage option and what he could get abroad was for Norway, where home wages were only 27 percent of the New World (Table 4.2); that is, the average

Norwegian unskilled male could increase his real earnings by 3.7 times by emigrating across

the Atlantic. The figures for the richer west European countries ranged from 44 percent (Ireland)

to 59 percent (Britain). In short, at the end of the transition to mass migration in the Atlantic

economy, the ratio of wages in labor scarce regions abroad to those at home ranged from 3.7 for

Norway to 1.7 for Britain. The gains to a move were immense, although, as we have seen, the

poorest could not scrape up the funds to make the costly investment.

Were things any different in the periphery? No. The average Indian indentured immigrant

in British Guiana, the famous sugar-growing area in the northeast shoulder of Latin America,

earned a monthly wage of $4.45 in 1869 (Northrup 1995: 129). If he had stayed home in the

Madras Presidency to work as a rural laborer, he would have made about $1.50 per month, for a

ratio of 3 to 1. But the wage received by the indentured worker in Guiana was over and above the

lodging, board, medical care and some clothing furnished by his employer. For a poor unskilled

"coolie" in those times, expenses on food, clothing and lodging would have almost exhausted his

income back home in Madras. Thus, it seems fair to say that when income in kind is added to his

wage income in Guiana, his monthly wage would have been more like $8 or more, and the ratio

to monthly wages back home in India would have been 5 or more. According to this Guiana-

Madras example from 1869, these wage gaps – measures of relative labor scarcity between the

export enclaves and one of the two main the labor surplus sources of the estate and plantation

workers -- were far higher around the periphery than they were around the Greater Atlantic

economy.[6]

Perhaps this huge 1869 Guiana-Madras wage gap exaggerates the incentive for mass

migration within the periphery in the 19th century. After all, it could have been that Guiana had

the highest wages (partly to compensate for high malaria-induced mortality risk there), or 1869

might have been a date of peak disequilibrium in this south-south labor market. However,

applying the same rules to other regions yields similar, or even more spectacular, results: wages in the West Indies in 1870 implied a ratio of 4.8; Trinidad in 1870, 7.8; Hawaii in 1870, 9 (Northrup 1995: 130; Tinker 1974: 186). There is additional evidence supporting the big wage gap characterization: indentured Indian migrants returning from Mauritius in late 1870s brought back cash equal to, on average, about four years of income at home, a figure that must understate the accumulated gains from the move since so many used postal savings to remit earnings while there in Mauritius and brought home (unreported) gold, silver and jewelry (Northrup 1995: 137).

The distances from south India to the Caribbean or Hawaii were, of course, very large, while those for the Chinese coolie trade connecting the South China provinces of Fukien (Fujian) and Kwangtung (Guangdong) to Southeast Asia were much shorter. So, what were wage gaps like for these great Chinese emigrations? In the 1870s, the unskilled labor wage ratios between Siam and China were almost 3 (Williamson 2000: Table 1.1, assuming no change in Chinese real wages 1873-1909).

This benign description of the gains from migration as an indentured or contract worker should not imply that we reject the abundant evidence documenting poverty and hard times for these migrants, as well as abuse of their contracts (Lewis 1978a: 187; Tinker 1974: Chp. 6; Northrup 1995: Chp. 5). First, mortality rates on ships transporting indentured Chinese and Indian migrants were much higher than for those carrying non-indentured passengers on the same routes and at the same time (McDonald and Shlomowitz 1990, 1992; Northrup 1995: Chp. 4). On the other hand, non-indentured passengers were financially much better off and thus had much lower mortality rates back home too. Furthermore, ship mortality rates declined sharply between mid century and the 1870s (Northrup 2002: 219), and while health and working conditions were certainly very bad in the estates and plantations abroad, they may well have been even worse at home. While the authorities and reformers pointed to examples of physical cruelty, restricted

freedom, arbitrary wage deductions and penal sanctions, they scrutinized the "coolie trade" far more critically than they did the abject conditions in the regions from whence the migrants came.

Given wage differentials like those cited above, "the miracle," in Kingsley Davis' words, "is that there was not an even greater exodus" (Davis 1951: 102). True, 30.2 million left India, but 23.9 million returned, so that 'only' 6.3 million left India for good between 1834 and 1937. Most of these headed south, east or southeast: about 42.2 percent of these went to Burma, another 24.9 percent to Ceylon, and another 19.3 percent to British Malaya (Davis 1951: 99, 101). The Caribbean, the Pacific and Africa got the rest, 13.6 percent. But all of these net migrations over the century between the 1830s and the 1930s added up to only 9.4 percent of India's 1900 population (Davis 1951: Table 34, 98), while the comparable percents for European emigration ranged from the British Isles 43.3, Portugal 33.3, Italy 31.1, Austria-Hungary 19.8 and Germany 9.7. Of course, there were very significant migrations taking place *within* India that were driven by much the same forces: migration to the tea, coffee and rubber estates in Mysore and Assam; and migration to the Punjab and Sind where government irrigation investment created an enormous addition to hectarage. The movements to Assam were the biggest and the most similar to the international migrations,[7] and they were also driven by big wage gaps.

In summary, India was and is a huge country, so small percentages imply big numbers, but 6.3 million making permanent moves abroad is surprisingly small *especially* given the enormous incentive to move.

The mass migration data for the other main labor surplus area, China, are not as good – perhaps because so much more of it was not contract labor, but we are told that 19 million Chinese moved to southeast Asia, the Indian Ocean and the Pacific in the first global century (McKeown 2004: 157), although "only" 8.2 million were residing abroad in 1922 (Ferenczi and Willcox 1929: 149). Like India, most of China's emigrants were in Asia: Formosa, Hong Kong

and Macao 32.4 percent; Java, the Straits Settlements and the Philippines 28.3 percent; Siam

18.3 percent; Annam, Burma and Ceylon 16.6 percent; and the rest 4.4 percent. While 8.2 million

is a big number, it was less than 2 percent of China's 1910 population, implying a very small

emigration rate compared with European experience. Yet, it was a bigger share of the *male*

population since few women moved: in 1900-1903, almost 89 percent of the Chinese immigrants

entering Singapore were men (Huff 1994: 154, 402-3), and the share of Chinese immigrants to

the US that were male in the century before 1928 was 96 percent (Gabaccia 1996: 92).

Furthermore, the emigration rates were much higher in the *coastal regions* from whence most of

the Chinese emigrants originated.[8] Still, these emigrations were small compared to the sending

country populations.

Why was south-south migration over the century after 1820 so low compared with north-

north migration? We must at the start dispatch any notion that this migration was shut off by

policy at the origin. Here stated policy and implemented policy are two quite different things.

Long before the height of the coolie trade involving China, "Imperial edicts … forbade

[e]migration over two dynasties," but they were ignored (Hui 1995: 52). Thus, new emigration

was prohibited in 1718, and all Chinese residents abroad were recalled. A decade later, a sentence

of banishment was pronounced on those who failed to return, and those who did return were

viewed as having committed a capital offence (Ferenczi and Willcox 1929: 149-50). Port

authorities and other officials could not and did not implement any of these decrees, but, on the

contrary, became implicit facilitators for the trade. By 1860, what had been a reality was codified

by legalizing the coolie trade in China (Ching-Hwang 1985: Chp. 3). It is fair to stay, therefore,

that the Chinese migrations went largely unrestricted during the period of great south-south

migrations.

The same is true of India, although in this case there was some active intervention to subsidize the migrations. For example, Trinidad tried to stem return migration and encourage immigrants to stay by economic incentives. In 1851, the government started to pay Indian immigrants at the end of their contract $50 to stay, a financial incentive replaced by even more lucrative free land in 1869, and then both in 1873 (Northrup 1995: 134). No doubt partially as a result, Trinidad became the most popular West African destination and the Indian return migration rates were the lowest. Thus, 40 percent of the population of Trinidad and Tobago was Indian or of Indian descent in 1938 (Davis 1951: 102).

Government policy was even more immigrant-friendly in Burma. In the early 1870s, lower Burma was sparsely populated (31 persons per square mile, while Bengal was 269 per square mile) and the British government moved to reclaim swamp and jungle thus increasing acreage for rice production. The movement of Burmese from Upper Burma into the new acreage was too slow, so in 1874 the government turned to direct recruitment of Indian workers for settlement in Lower Burma (Siok-Hwa 1968; 117-20). The scheme died two years later as the recruits from Calcutta were found to be unfamiliar with farm tasks or simply preferred urban employment. The subsidy and recruiting was tried again in 1877, this time with Madras workers, another scheme of direct recruiting which was soon abandoned. Finally, in 1882 the British government switched from direct recruitment to transport subsidy, and it worked; the subsidy served to reduce the fares on "deck-passengers" (immigrant workers taking the cheapest passage) by a third on routes from Calcutta, Ganjam and Madras. The subsidy was removed in 1884 since "the government decided that enough labourers could be obtained without a subsidy" (Siok-Hwa 1968: 121-2).

If policy was benign and wage gaps huge in the 19th century, what, then, explains the low south-south migration rates? The answer is clear, and it is certainly consistent with the European

mass emigrations: the cost of the move was very big, and the living standards in India and China were very low, that no unskilled worker could, on his own, possibly secure the funds to invest in the move, thus to reap those high returns abroad. Recall Table 3.3 where the ratio of passenger fare to income per capita at home was given for European emigrants heading for the United States. The biggest ratio reported there was for the British emigrant in 1821 and before, ranging from about 0.4 to about 0.6. With the subsequent transport revolution, those British ratios fell to 0.1 by the end of the century. The ratios of passage fare to home per capita income were *much* higher for workers pondering emigration from India and China (Galenson 1984: Table 1): for indentured Chinese to the West Indies 1859-1880, 5.3 to 9.9; for indentured Chinese to Hawaii 1877-1880, 6.8; for contract Chinese labor to California 1877-1880, 5.5 to 6.8; and for indentured Indian labor to the West Indies 1859-1901, 3.6 to 11.8. These figures are at minimum *ten times* those for the Atlantic economy.

No poor Indian or Chinese laborer would have made the move under those cost conditions given their inability to get loans to finance the move. However, estates in the export enclaves, or their recruiters, were happy to make the investment, especially as transport costs fell after 1820 and as the soaring terms of trade raised labor costs facing these estates and plantations. Indeed, an index of the ratio of moving costs for an indentured migrant (recruitment, board on route and passenger fare) to the wage at the export enclave fell from 4 to 1 between 1852-1874 and 1881-1909.[9]

Government and Private Assisted Passage in the Periphery

As we noted in Chapter 2, this problem of high moving costs, poverty constraints, and 'capital market failure' had in the previous centuries been solved in the most obscene way -- by

African slavery. That option began to disappear in 1807 when Parliament banned all British subjects from engaging in the slave trade. Other, less squeamish European colonialists took up some of the slack left by the British, but in 1834 slavery was abolished in the British colonies, and the rest of the world followed suit over subsequent decades. The alternative to slavery was to seek something between it and free labor, contracts whereby the investor would fund the cost of passage, but the migrant would agree to work for that investor (or whomever he or she represented) for a number of years and at some below market wage. In theory, the agreement allowed the investor to recoup, and get a market return on, his investment while the migrant was allowed to collect the remaining (big) wage gains from the move.

The most famous contract was indentured servitude, but there were a variety of other arrangements in which the most important condition was contract length (Northrup 1995: 115-16). Given their distance from source, Chinese recruits were expensive in Cuba and Peru, thus generating arrangements early in the century where passage and recruiting costs covered by the recruiter could be recouped over a contract length of eight years. Since they were a little closer and passage cheaper, contracts in the Caribbean colonies were for five years. Hawaii was closer still, where contracts were typically three years. Clearly, the higher the cost of passage and recruitment, the longer the time necessary to recoup the investment with an adequate market return. By the 1850s, "five-year contracts became the norm in … British colonies … with migrants … closer to their homelands having the right to a free return passage after five years" (Northrup 1995: 116). Since political rhetoric in the mid 19th century viewed long contracts as too close to slavery and a source of abuse, progressive legislation constantly pushed for shorter contracts. The progressives met with less and less resistance as steerage costs fell across the century.

As Ferenczi and Willcox (1929: 153) noted seventy-five years ago, "Chinese emigration was often assisted, [but] compared with free emigration, this type of emigration was of minor importance." The assistance took the form of what became known as the credit ticket system, a system that was in operation at least as early as 1823 and by 1887 it accounted for 27 percent of the Chinese arriving in Singapore (Northrup 1995: 59). Under the credit ticket system,

> the cost of the passage was advanced to the coolie by brokers acting as agents for large European trading houses, or for coolie ships recruiting on contract to planters and others …. Repayment through earnings gave the coolie more control over the period during which he provided his labour. (Hui 1995: 52)

The vast majority of Indian emigrants were assisted under contracts that varied by length, but the really short term arrangements were typical of moves within south and Southeast Asia. These were called *kangani*, and they were common for emigration to nearby areas like Burma and Ceylon (two-thirds of the Indian emigration). The *kangani*, or head man, was the professional recruiter, and often he recruited whole gangs from a given village (Davis 1951: 104). This system started in Ceylon, but it had become common in British Malaya by 1890. In the case of the Burmese migrations, the professional recruiter was called a *maistry*, but the system was similar to the *kangani* (Siok-Hwa 1968: 123).

Plantation employment requirements were driven by demand. As the terms of trade of tropical economies improved, the quest for contract labor gained in intensity; when export prices declined, so did recruitment of contract labor for the estates and plantations. These migrations offer a classic example of elastic labor supplies that goes back to the writings of W. Arthur Lewis. While the employer-recruitment-driven approach to migration (Piore 1979) has gone out of fashion, it still seems an appropriate characterization of these 19th century migrations. Since the numbers migrating were small in relation to the stock of potential emigrants, labor supply at

home was highly elastic, as in Figure 7.3. However, the labor supply facing the plantation abroad included the fixed transport cost (C: returned to the investor) and some 'hedonic' compensation to the worker (H) who preferred to be home, had to forego family formation, and got exposed to high mortality risk. While it seems plausible to expect this hedonic compensation to rise as the search for willing recruits gets harder, the underlying supply curve at the origin (S_H) is horizontal. Thus, a booming terms of trade shifts demand outward (from D to D') increasing migrant recruitment without appreciably raising labor costs.

Figure 7.3 highlights several other things too. One is that the decline in recruitment costs, especially transportation, must have reduced labor costs facing plantation owners and increased the demand for contract labor. Another is that, even though supply was elastic at home, plantation employers' labor costs must have increased when favorable demand shocks raised the compensation premium at the destination. The third is that the wage paid to contract labor was a recruitment-cost-plus-hedonic-premium markup over the real wage at the origin. The hedonic premium must have risen as contract labor requirements increased (at least in the short and medium term), since the marginal indentured migrant needed to be compensated for leaving home, for tolerating oppressive work regimes, and for exposing himself to cholera and other mortality risks. Clearly, the low disamenities-adjusted estate wage (w_P), much lamented by the critics, largely reflected conditions at the origin (w_H). Finally, this simple framework says nothing about who paid for the transport costs, C. But cheap Asian contract labor meant recruiting poor people; the poverty constraint was binding and hence employers or their representatives had to pay the up-front cost in return for a labor contract.

Compared with Indian migrations, Chinese migrations appear to pose a paradox. While the vast majority of Indian migrants were indentured and otherwise assisted, the vast majority of the Chinese migration was free (Northrup 1995: 52). True, free migration for the Chinese migrant

"was often another form of the credit-ticket system, the difference being that the sponsors might be kinfolk or clan associates" (Hui 1995: 52). Still, the Chinese emigrations appear to have taken the same form as the European emigrations: late in the first global century, a very large share of Chinese migrations were voluntary and unassisted, involving family, clan, and village networks (Lai 2002: 235). This was not true of the indentured Indian migrants. Why the difference? Perhaps the explanation lies with the fact that Chinese workers had been migrating to Southeast Asia for centuries, and thus new emigrants could get funding from previous pioneer emigrants established abroad. Or, perhaps the Chinese coolie market was sufficiently old to have gotten much more professional and efficient compared with the newer Indian market, illustrated by the ubiquitous 'lodging house' system. Or, perhaps the explanation lies with the fact that the move from the South China provinces of Fukien and Kwangtung to Southeast Asia was much shorter in time and distance and thus less costly than from major Indian sending regions.

The Impact of Immigration and Emigration Around the Periphery

The flows from labor surplus to labor scarce parts of the periphery seemed to obey many of the same laws of motion as those recorded by the European mass migrations. Is it plausible to expect, therefore, that they had the same impact on wage and relative factor price convergence? Perhaps not. While the immigration rates for booming resource abundant regions in Southeast Asia, East and South Africa, and tropical parts of Latin America seem large enough to have left a mark on relative labor scarcity, it seems far less likely to have been true of China and India, the huge labor surplus regions where the emigration *rates* were so small. In addition, it is difficult to sort out the role of the terms of trade, labor migration and other factors, as we shall see in a moment.

Early in this chapter, we predicted that globalization should have fostered *relative* factor price convergence within the periphery, manifested mainly by falling wage-rent ratios in the labor scarce areas and rising wage-rent ratios in the labor abundant areas. That is, labor migration and favorable terms of trade shocks should have worked together towards relative factor price convergence. The terms of trade boom for each region's exportable should have served *ceteris paribus* to raise the relative price of the region's abundant and cheap factor: thus, it should have raised the relative price of cheap arable hectares in Burma and Siam (relative to labor), while it should have lowered the relative price of expensive arable hectares in South China and Madras (relative to labor). Initial relative scarcities should have been at least partially dissipated by the terms of trade boom. At the same time, migration also served to raise the price of the abundant and cheap factor: emigration from China and India should have served to raise the relative price of labor and lower the relative price of land at home, while immigration into Burma and Siam should have had the opposite effect. From 1820 to the terms of trade peak in the late 19th century, mass migration and the terms of trade boom should have worked together to create relative factor price convergence within the periphery.

So much for theory. What about fact? Table 7.2 documents the predicted behavior, although it can only be documented starting 1870 and only for four land abundant regions in Asia (Burma, Siam, Egypt and the Punjab) and three land-scarce regions (Japan, Korea and Taiwan). Wage-rent ratios fell dramatically in land-abundant, immigrant regions (Siam being the most spectacular case), and rose dramatically in land-scarce regions (Japan being the best documented case).

But how much of this predicted wage-rent convergence can be attributed to trade and how much to migration? Here we are on shakier ground since we simply do not know whether migration or the terms of trade mattered most, but our best guess would be the terms of trade. We

are pushed to that conclusion by two facts: first, the migrations were, as we have seen, very

small shares of total population and labor force in the sending, and perhaps even some receiving,

regions;[10] and second, it was changing land rents, not wages, that was driving those wage-rent

ratios. Indeed, while migration should have served to raise real wages in emigration areas and

lower them in the immigration areas, it did not do so, or at least the influence was not sufficiently

big to offset other forces. The other force that mattered most was the terms of trade boom,

producing the $\Delta w > \Delta Pm$ result in labor scarce estate and plantation locations. The best way to

see this is to compare real wage trends reported in Table 7.3 for India and Japan with Siam and

Indonesia. The data are limited, but they certainly do not confirm real wage convergence in the

periphery during the first global century. On the contrary, there appears to be *divergence*. Either

the terms of trade shocks were simply too big and favored the land and resource abundant

regions, or the net migrations were too small, or both.[11]

        The proponents of the migration-was-too-small view are many (Davis 1951: 98), but they

all appeal to the small share that *net* emigration or even *net* immigration was in the population

and labor force of the participating regions. We do not disagree, but this view needs far greater

support before the case is clinched. And when future research makes the sharper assessment, it

should pay attention to the impact of remittances on living standards in the sending regions of

China and India, the average length of time that the migrant stayed overseas, and to the age-sex

selection (young adult males) that resulted in a far bigger impact on the labor force in sending and

receiving regions (which is rarely measured) than on population. It should also pay more attention

to the issue of regional labor market segmentation *within* sending regions. If labor markets in

Madras were poorly integrated with other regional labor markets across India, then the relevant

denominator for the emigration rate is population or labor force in Madras, not India. The same

applies to Fukien and Kwangtung provinces in China.

Race, Prejudice and Labor Market Segmentation Involving the Periphery

Immigrants from the less developed parts of the world were effectively shut out of the Greater Atlantic economy. Several countries of European settlement began in mid-century to introduce Indian and Chinese labor -- New South Wales in the 1840s, Victoria in the early 1850s and Queensland and Natal a few years later. But as the forces of resistance gathered strength, restrictive legislation escalated in response to the perceived threat of 'colored' immigrants (Huttenback 1976: 75). The restrictive legislation culminated in the total exclusion of Chinese and Indian migrant workers. Victoria led the way in 1857 with a residence tax and in the 1880s all the Australian colonies moved to increase the ratio of shipping tonnage to colored immigrants that was allowed to land, backed up with heavy fines. Similarly, small flows of Chinese immigration into California produced the Chinese Exclusion Act of 1882. The response in British Columbia was similar although the Ottawa government first used the tonnage ratio rule with heavy fines imposed for violations until complete Chinese exclusion was enacted in 1903.

These pre-emptive policies in the immigration regions of the Greater Atlantic economy ensured that contract labor was cut off and Chinese and Indian immigration suppressed to no more than a trickle. But it produced tensions in the British Empire where British subjects were all equal under the crown—at least in principle, if not in fact. Nowhere were these tensions higher than in Natal where Indian contract labor had been introduced in 1859 and where by 1891 there were nearly as many Indians as Europeans. The key issue there was not contract labor *per se* (although that attracted criticism too) but the fact that post-indentured Indians and their descendants were denied the right to live and work on equal terms with whites. The 'solution' was the Natal Act 14 of 1897, which introduced a dictation test in a European language that was designed to stop further Indian immigration. This same formula became the basis of the White

Australia Policy (Act 17 of 1901) introduced by the newly federated Australia, by New Zealand

in 1899 and by British Columbia in 1907.[12]

Even though the costs were high and few free Asian migrants would or could move to the

distant American west coast or to Australasia, they were never allowed to gain more than a

toehold in the Greater Atlantic economy. Thus, the currents of European and non-European

international migration were strictly segmented. Where contract labor could be restricted to

plantation economies distant from white settlement -- particularly on island economies like the

West Indies, Mauritius, Reunion and Fiji -- it flourished. Where there was potential for Asian

contract laborers to seep into settler economies and to compete head on with workers of European

origin, it was fiercely, and for the most part, successfully resisted.

But even in the plantation enclaves, indentured laborers worked under harsh restrictions.

Policy towards Indian immigrants in Natal was hardly friendly. In an effort to make the

previously indentured immigrants re-contract, they were taxed £3 annually until they did (but 69

percent did not: Northrup 1995: 133). Further discriminatory restrictions on Indian immigrants

provoked protests, including those led by the young Mohandas K. Ghandi, and some violence, so

much so that many left for home after 1908. Things might have been even worse in Mauritius

where, in addition to a tax of £2 18s imposed on the "free" Indian immigrant, they were harassed

by vagrancy laws and licenses which were intended to reduce economic alternatives facing them

upon the termination of their indentured contracts (Thiara 1995: 66).

Race and prejudice is even easier to document, as is conflict. Immigrant labor's

resistance to poor treatment was given frequent illustration by demonstrations: "Mass worker

protests … took place in Mauritius in 1872 …, but the most significant occurred in Natal …. In

Fiji, the most serious strike took place in 1886 [when workers] marched to the agent general of

immigration in Suva" (Thiara 1995: 67). Kingsley Davis reports all of this as 'the Indian

problem abroad':

> In every country to which they went, [the Indians] found themselves a minority differing
>
> both culturally and racially from the native population, and under European masters. In
>
> these four elements – racial difference, cultural difference, European domination, and
>
> government ambivalence – are to be found the main ingredients giving rise to 'the Indian
>
> problem abroad' .… there was unmistakeable evidence of a rising prejudice against
>
> Indians in such areas as South and East Africa, Burma, and Fiji. (Davis 1951: 103-4)

In the Caribbean, Indians were often looked upon by whites as heathen and by Africans as scab

labor, and "in Trinidad, British Guiana … and Surinam, ethnic tensions eventually manifested in

political confrontations" (Vertovec 1995: 61). Indeed, violent race riots broke out in Burma in

1930 and 1938, resulting in dramatic fall in Indian immigration and a surge in emigration (Siok-

Hwa 1968: 136).

Why Did Assisted Migration Come to an End in the Periphery?

In the 1870s, China moved first to regulate then to abolish the indentured migrant trade.

Portuguese officials in Macao agreed to join the movement, and stopped the trade from that port

in 1874. Cuba, Peru and the United States supported the move. British officials continually

intervened to shut down the indentured migrant trade from India where abuses were reported. All

of this culminated with the government decision to end the Indian trade as of March 1916

(Northrup 1995: 144-45).

Why did 'assisted' migration come to an end? Was it ideals or economics? We think it

was economics, and we think the economics had two parts. First, net emigration of all Indian

workers – assisted and unassisted -- fell off very sharply from the early 1890s to War World I, from 790,000 in 1891-95 to 383,000 in 1906-10, and by 1936-37 it was 59,000 (Davis 1951: 99). It appears to us that this sharp drop was induced by poor economic conditions in the estates and plantations, manifested by the secular decline in their terms of trade after a peak somewhere between the 1860s and the 1890s – when, depending on the export staple. They fell sharply thereafter. Second, the migration of indentured labor fell off much earlier and even steeper than did total migration. Indian indentured migration reached its peak in the 1850s, and Chinese indentured migration reached its peak in the 1860s. The decade totals of indentured immigration from all sources – African, Chinese, Indian, Japanese and others -- rose from about 34,000 in the 1830s to almost 420,000 in the 1850s. It never came close to regaining that level thereafter, dropping to 212,000 in the 1880s. It peaked in the 1850s in Mauritius and Reunion, and in the 1860s in Cuba, Peru and the Caribbean. Only in Africa and the Pacific did the peaks come late enough to have been cut off by policy. In short, the share of the Indians and Chinese migrating under indentured contracts fell sharply after the 1850s and 1860s, *long* before restrictive legislation was passed and implemented.

Although some vestiges of contract labor survived into the interwar period, it was largely abolished during or immediately after the First World War. Sharp declines in the price of sugar in the 1880s cut the pace of recruitment to the sugar plantations. Other primary-product producing plantations elsewhere in the tropics followed suit. In addition, from the turn of the century the level of protest increased in India and throughout the British Empire.[13] If the political tide was moving against indentured labor and the demand for it was ebbing, the war-induced shipping shortage was the event that ultimately brought it to a halt by 1917. High wartime transport costs coincided with demonstrations in India, both stopping recruitment on the supply side. The Indian

government invoked the formal abolition of recruitment for British Guiana in 1919, Fiji in 1920, and Mauritius in 1921.

Economics and idealism combined, through interest group politics, to bring an end to the indentured labor system in the poor periphery. Economics and backlash combined to reduce the mass migrations there. The underlying fundamental forces often cumulated over long periods before sudden shocks caused a radical change in policy, just as was true of New World immigration policy regarding European mass migrations. Declining derived labor demand was the underlying fundamental at work, but it was helped by rising backlash manifested by a discriminatory reaction to post-indentured laborers in the poor periphery, and by their outright exclusion from most of the Greater Atlantic economy. As the next chapter will confirm, it appears that late 19th century immigrant backlash was on the rise in both center and periphery.

Endnotes Chapter 7

[1] To keep the chapter within bounds, it ignores the Russian migrations to Siberia and the east, as well as the Chinese migrations to Mongolia and the north, but see Chapter 2.

[2] Here, we refer to models where factors are specific to given sectors. In this example, 'land' is used only in 'agriculture' and capital is used only in manufacturing. Labor is mobile between them. A summary of these models can be found in O'Rourke and Williamson (1999: Appendix, 289-94) and Williamson (2004a, 2004b).

[3] The "tyranny of distance" was the apt phrase that Geoffrey Blainey used to describe its importance to Australian development in his wonderful book *Tyranny of Distance*.

[4] This rise is computed over the fifteen years following 1858 (Huber 1971).

[5] See also Shah Mohammed and Williamson (2004) for more details on these long run trends.

[6] In contrast with the Atlantic economy real wage data (Williamson 1995), these wage comparisons around the periphery must assume that living costs were comparable since we do not have the price information needed for purchasing-power-parity adjustments. Still, we doubt that such adjustments would change the central conclusion: wage gaps were *much* bigger around the periphery than around the Atlantic economy core.

[7] Davis (1951: Chp. 14). It has been estimated that some 20 million Indians were involved in long distance migration *within* British India (Lai 2002: 241).

[8] The average emigration rate from Kwangtung province (about the size of Italy) was at least 9.6 per thousand in the peak years of the 1920s (McKeown 2004: 160).

[9] Calculated from Northrup (1995: Table 5,1), using four relevant observations: China to Hawaii 1852 to 1881-1889; Japan to Hawaii 1868 to 1885-1893; India to British Guiana 1874 to 1907-1908; and India to British West Indies 1847-73 to 1909.

[10] In the case of Japan, the net emigration rate was close to zero until late in the century.

[11] Similarly, what accounts for the real wage fall from the 1880s to WWI in Indonesia and Siam (as well as Burma: Furnival 1938: 93)? Was it the cumulative impact of immigration, or the fall in the terms of trade? We think it was the latter.

[12] Although the Australia-wide policy was introduced in 1901, it was preceded by similar legislation in some of the constituent colonies: Western Australia in 1897, New South Wales and Tasmania both in 1898 (Huttenback 1976: 166).

[13] This was less so in Britain itself. Indeed, the Committee on Indian Emigration chaired by Lord Sanderson reported in 1910 in favor of maintaining the system with only minor adaptations.