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World Institute for Development Economics Research

Working Papers No. 162

July 1999

Resource-Led Growth – A Long-Term Perspective

The Relevance of the 1870-1914 Experience for Today's Developing Economies

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(UNU/WIDER)

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This study has been prepared within the UNU/WIDER project on Environmental, Export and Human Development Problems in Natural Resource-Based Growth Models, which is directed by Professor Richard M. Auty, UNU/WIDER and Lancaster University, UK.

UNU/WIDER gratefully acknowledges the financial contribution to the project by the Government of Sweden (Swedish International Development Cooperation Agency-Sida).

Ronald Findlay is affiliated with the Columbia University and Mats Lundahl with the Stockholm School of Economics.

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UNU World Institute for Development Economics Research (UNU/WIDER)
Katajanokanlaituri 6 B
00160 Helsinki, Finland

Camera-ready typescript prepared by Anne Ruohonen at UNU/WIDER
Printed at Pikapaino Paatelainen Oy, Helsinki

ISSN 0782-8233
ISBN 952-9520-97-2 (printed publication)
ISBN 952-455-007-5 (internet publication)

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ACKNOWLEDGEMENTS

Thanks are due to Richard Auty, S. Mansoob Murshed and Moshe Syrquin for generous and constructive criticism of an earlier version of the present essay.

ABSTRACT

Resource-Led Growth – A Long-Term Perspective surveys the 1870-1914 experience of growth in resource-rich economies: the so-called regions of recent settlement, some tropical countries and some mineral-based export economies. First, three contrasting stylized views of resource-led development are presented. Thereafter the picture of international trade in primary products and the migration of production factors between 1870 and 1914 is sketched. The third section presents some models that may be used to analyse trade and factor movements in the context of resource-rich (staples) economies and provides some details of the experience of fifteen countries: Canada, the United States, Australia and Argentina among the regions of recent settlement, Brazil, Costa Rica, Colombia, Ceylon, Malaya, Burma, Siam and the Gold Coast in the tropical group, and Bolivia, Chile and South Africa among the mineral exporters.

The essay concludes that the economies surveyed differ in their experiences, with the regions of recent settlement doing relatively better than the rest, among other things because their relatively larger per capita natural endowments made for higher per capita incomes and larger internal markets conducive to industrialization. It is also argued that the relevance of the 1870-1914 experience for today's developing countries is limited, because the characteristics of the world economy during the former period differ substantially from those of today and because it may be comparatively speaking more difficult for resource-rich countries to industrialize today than under circumstances resembling those of the 1870-1914 period. This problem is further compounded by a series of faulty policy choices in the past.

1 INTRODUCTION

An apparently paradoxical finding of the empirical literature on economic development in the last thirty years is that resource-abundant countries seem to perform more poorly than less well endowed ones. It also does not seem to matter whether the natural resources in question are agricultural or mineral. A number of hypotheses have been put forward to account for this puzzle. Bad growth performance, however, has not always accompanied the efforts of primary producers. On the contrary, during the 'golden age' of resource-led development, from approximately 1870 to the beginning of World War I, a number of primary exporters did exceedingly well. This inevitably raises the question why performance has differed so radically between countries and historical epochs.

In the present essay we will attempt to find out whether the 1870-1914 period was in some sense 'unique', i.e. whether the success of the resource-rich economies during these years built on a configuration of factors that is not likely to be replicated in future dates, or whether the episode contains lessons that are applicable a century later as well. The story of resource-based growth has been told before, but there is no consensus as to the conclusions. On the contrary, there are at least three 'stylized' views: the 'Marxist', the 'Liberal' and the 'Interventionist', that diverge considerably. We therefore begin with a short sketch in general terms of each one of them in the first part of this paper.

The second part provides an account of the world economy as it evolved during the period under consideration. The nineteenth-century story of resource-led growth is simultaneously a story of technological progress, international trade, factor movements and institutional change. Without a firm grasp of these factors no understanding of the experience of the resource-rich nations in this era is possible. The third part of the essay examines the record of fifteen resource-rich economies approximately 1870 to 1914, in the light of some neoclassical theories of trade, factor movements and growth, to find to what extent their experiences resemble each other and where they diverge. The final section makes use of the stylized facts and development trends that emerge to discuss the relevance of the historical experience for today's developing economies and in addition examines the three stories in the light of this experience.

2 THREE STORIES OF RESOURCE-LED DEVELOPMENT

2.1 The Marxist-Dependency story

Perhaps the most widely known story of resource-led economic development is the view of more or less total failure propagated by Marxist and *dependencia* theorists (e.g. Prebisch, 1950, Singer, 1950, Baran, 1957, Frank, 1969, Furtado, 1970, Amin, 1974). According to this view, the world may be divided into an industrialized centre and a primary-producing periphery which interact through international trade and capital movements from the centre to the periphery. The central message is that in this setting it becomes impossible for the periphery to develop. Interaction with the centre will simply serve to perpetuate the position of the periphery as a low-income primary producer.

The centre, which is the engine of the system, can develop by itself. Growth at the centre, however, does not spread to the periphery. The income elasticity of demand for primary products is low, and monopolistic structures in product and factor markets ensure that productivity gains do not translate into lower prices, while such gains in the competitive periphery would simply benefit consumers elsewhere. In the periphery, foreign investment emanating from the centre is concentrated on an export sector producing minerals or agricultural produce which has little contact with the rest of the economy. Management and skilled labour come from abroad, profits and salaries are remitted to the centre and the demand generated in the export enclave is geared mainly towards imports. The only contact with the local economy is through the market for unskilled labour, where, however, wages are low because of high population growth and because imports of manufactures from the centre have wiped out the handicraft sector and reduced the available employment alternatives.

The failure of international trade to increase wage income in the periphery effectively precludes industrialization. The mass market which would make import substitution of manufactured consumer goods possible does not come into existence. The periphery is trapped in a situation where it will go on producing primary products forever, without experiencing any growth of incomes.

2.2 The Liberal story

The second story is almost exactly the opposite of the 'Marxist-Dependency' one. It represents a 'Liberal' view (e.g. Viner, 1953, Bauer and Yamey, 1957, Haberler, 1959, Lal, 1983). According to this, the Marxists and *Dependentistas* are mistaken in stating that specialization according to comparative advantage would be wrong for resource-rich countries and in inferring that international trade would not confer any benefits on primary producers. Squeezing agriculture to promote industry would be wrong, since agricultural incomes provide markets for the manufacturing sector as well as foreign exchange and in economies with small non-agricultural sectors they would also be the only source of capital formation. Also, international trade should be an integral part of the development strategy of resource-rich nations. The traditional arguments for trade apply and trade may also have dynamic effects of various kinds. It may be conducive for example to capital accumulation and technological progress, and this, in turn, may make it possible to move up the ladder of comparative advantage over time, away from resource-based products, via labour-intensive, skill-intensive and capital-intensive manufactures towards sophisticated products resting on 'created' production factors related to R&D activities. The reasons why some primary producers failed to turn the use of natural resources and the participation in trade into growth have to be sought elsewhere - notably in faulty policies that stunted efficiency.

The problem is one of excessive *dirigisme*. The state did not stick to its basic functions (providing law, order, defence, education, health care and the like) but believed that it could interfere systematically with the market mechanism so as to increase efficiency and growth, and even more to increase equality. The outcome was completely different, however. Government intervention created more inefficiencies than it destroyed, and did not necessarily improve the distribution of income and resources. In particular, there was a tendency to get prices more or less systematically wrong. Instead of improving the functioning of the imperfect markets the interventions made the situation worse.

International trade is a case in point. Interventions took the form of protection of the manufacturing sector, drawing resources away from the sectors where the economy had a comparative advantage based on natural resources. Internal trade is also affected. Private middlemen are not trusted but governments frequently undertake to regulate the marketing of agricultural produce by substituting parastatal marketing boards for them,

bureaucratic organizations that usually are both inefficient and corrupt. In this way, producers receive less than the world market price for their goods. Likewise, mineral producers (particularly if they are foreign) are subjected to high taxes which are thereafter spent in a way that does not contribute to increasing the rate of growth. Thus, the failure of resource-rich economies to grow fast is due not to external factors, but to internal, policy-related ones. The remedy is clear: get prices right, remove distortionary interventions and do not discriminate against the export sector. Producers (including producers of primary products) are no fools. They react to incentives, regardless of whether these are 'right' or 'wrong'.

2.3 The Interventionist story

According to the 'Interventionist' view (e.g. Ranis, 1991, Sachs and Warner, 1995, Sachs, 1996, Auty, 1998), a number of factors operate on resource-rich economies which require specific government intervention if they are not to have negative effects on growth. Such factors are found both outside and inside the domestic economy.

Most important, resource-rich economies may be caught in a 'staple trap'. When production expands in the resource-based export sector, this may produce Dutch Disease effects which lead to an increased production of non-traded goods while labour and capital are pulled out of a shrinking manufacturing sector. The tradeables sector of the economy becomes overly specialized on primary products. If manufacturing for example has important backward and forward linkages, learning effects or increasing returns to scale, this could be inimical to growth. Should anything happen to the expansion of primary exports, the economy faces the risk of a growth collapse.

The above points to the importance of policy intervention. The resource-rich economy cannot be left to itself, because that may kill an incipient manufacturing sector. Neither should protectionism be allowed to carry the day, but unfortunately, resource-rich economies easily develop factional states, where rent creation looms large, because rents constitute an important building material for political coalitions. Thus, policy reform may be difficult.

It should be obvious from the above that the views of what impact the existence of natural resources in a country will have on economic growth and development differ sharply between the three schools of thought. We

will come back to them at the end of the essay, in order to find out to what extent each of them stands up in the light of the historical experience. Before we do that, however, we must examine the experience itself: that of the 1870-1914 period. We will then begin with a sketch of the most important - revolutionary - trends in the international economy.

3 THE GOLDEN AGE: 1870-1914

The years between 1870 and 1914 were years of relatively high growth in many countries. Already from the mid-nineteenth century strong growth impulses emanated from those countries in Europe, and later North America, where industrialization was taking place. From 1870 to 1913 GDP grew at 2.1 percent per annum in Western Europe and at 3.9 percent in the United States (Maddison, 1995:60, 182), and between 1880 and 1910 industrial output in Britain, France, Germany and the United States expanded at 3.65 percent a year (Lewis, 1978:136). While these rates, as Arthur Lewis (1978:136) has pointed out, do not appear as extraordinary in a post World War II perspective, they nevertheless were sufficiently high to lay the foundations for an international economic boom.

The participants in this boom were not only the 'core' European and North American countries, but economies in both the European and non-European periphery were drawn into it as well. At the root of the expansion was the industrial, i.e. technological, revolution which had started during the latter half of the eighteenth century in Great Britain but which did not spread very much for the next hundred years. By 1850, basically only France and Belgium had been reached by the new British manufacturing techniques, but as industrialization spread over the next sixty-five years, powerful growth impulses were transmitted from the core to the more peripheral areas.

The mechanism of transmission was the network of international transactions and factor movements that was built up during the latter half of the nineteenth century. Goods began to move in larger quantities and across a wider geographical area than at any time hitherto and huge quantities of both people and capital began to flow from the core to the periphery. On the highest level of aggregation, the world economy behaved very much in the fashion captured by North-South models of trade and capital flows (e.g. Findlay, 1980, Burgstaller and Saavedra-Rivano, 1984) where a growing

industrial North is linked to and transmits growth impulses to a primary-producing South via the terms of trade and international capital mobility.

3.1 The trade machine

Between 1870 and 1914 trade was an 'engine' (Robertson, 1938) or at least 'handmaiden' (Kravis, 1970) of growth - one which was not confined to the developed part of the world. Manufactured goods were increasingly exchanged for primary products (agricultural goods and minerals) in a process driven by industrial growth. Between 1883 and 1913 the elasticity of world trade of primary products with respect to world manufacturing output was 0.86 (Lewis, 1978:175). In value terms, the exports of tropical countries grew at 3.4 percent per annum and in terms of volume the growth rate was slightly higher: 3.6 percent (Stover, 1970:46). During the entire period Europe dominated trade on the world level in quantitative terms (Lamartine Yates, 1959:32-33). The pattern, however, involved drawing non-European economies into a very intimate relation with Europe (Kenwood and Lougheed, 1992:82):

> ... the direction of world trade in the period before 1913 was dominated by Europe's ever-growing demand for foodstuffs and raw materials. Before World War I Europe absorbed more that 80 per cent of the exports of ... Argentina, South Africa and New Zealand; 75-80 per cent of those of ... Australia; over 60 per cent of those of ... the United States; and more than half of Canada's and India's.

There was a movement away from protection, on a most-favoured-nation basis, during some but not all of the period. Britain in particular moved towards free trade. The 1880s saw a return to protectionism, in the wake of the invasion of Europe with cheap American and Russian grain, with only Britain, Holland and Denmark adhering to the canon of free trade (O'Rourke and Williamson, 1997:Ch. 2, 5).

Long-distance trade was more consistently facilitated by progress in transport and communications (O'Rourke and Williamson, 1997:Ch. 2). Drastically falling transport costs brought countries and continents closer to each other. It became easier both to make use of foreign supplies of inputs and to find markets. The steam-driven railway opened up the interior of vast countries and made possible the transportation of export products to ports. The introduction of iron steamships revolutionized maritime

transportation, and the opening of the Suez Canal in 1869 did away with the cumbersome route around the southern tip of Africa, halving the distance between London and Bombay. Between 1873 and 1908 inward ocean freight rates to Britain fell no less than 73 percent (Cairncross, 1953:176), and the cost savings on overland transport as a result of the railways were even more spectacular (Reynolds, 1985:33). The development of refrigeration made the transportation of meat and butter across the oceans possible, and the telegraph facilitated long-distance communication enormously. The result of all this was to turn a number of goods into staples, i.e. primary products with a value per unit of weight or volume high enough to make intercontinental transportation of them profitable.

Changes in institutions also played a significant role for the expansion of trade. The development of a large multilateral payments system, after 1870, which reduced the need for bilateral balancing of trade greased the trade machinery, and so did the extension of the gold standard. In 1870, only Britain, of all the major European and North American countries, was on a gold standard, but thereafter the use of the latter gradually spread across the globe.

3.2 Factor movements

The result of the forces just described was a degree of commodity market integration never experienced before in world history. The world between 1870 and 1914 was, however, not a pure Heckscher-Ohlin world, but one that was fuelled by factor movements as well. Both capital and labour became more mobile than during any previous period.

The degree of capital market integration reached before World War I appears to have been as high as it is today (O'Rourke and Williamson, 1997:Ch. 11). Gross foreign investment rose from some 6 billion US dollars in 1870 to 43 billion in 1914, with Britain accounting for 43 percent of the total in the latter year, outflows having increased until a stunning 9 percent of national income was reached in 1913 (Kenwood and Lougheed, 1992:27, cf. Cairncross, 1953, Hall, 1968, Edelstein, 1982, for details). In the last decade before the war, the share of foreign investment in total net British capital formation reached 53 percent (Landes, 1969:331).

Most of this foreign investment went to Europe, but by 1914 the regions of recent settlement had attracted 40 percent of the total (Kenwood and

Lougheed, 1992:28) and between 1907 and 1913 no less than 92 percent of Britain's overseas investment flowed into non-European areas (Taylor and Williamson, 1994:350). About 80 percent of it went to regions with natural resources but little labour, and there it was used mainly for social overhead investment, like railroads and harbours (O'Rourke and Williamson, 1997:Ch. 11).

Not only capital, but people as well, moved out of the European countries. The nineteenth century and the beginning of the twentieth were an 'age of mass migration' (Hatton and Williamson, 1998), with some 60 million leaving Europe for the New World between 1820 and 1920. The transport revolution in particular made an upward trend possible, with more than 600,000 leaving every year from the mid-1870s, rising to over a million after the turn of the century (Hatton and Williamson, 1998:8). The source shifted, with Britain, and to some extent Germany, dominating before the mid-century, the Scandinavian countries joining the movement around the latter time, Italy, Spain and Portugal rising to prominence in the 1880s and Austria-Hungary, Russia and Poland following suit the next decade (cf. Hatton and Williamson, 1994, for details).

These flows in their majority went to the United States. Between 1851 and 1880 this country received over two-thirds of all international immigrants, and for the period between 1881 and 1915 the figure is only slightly lower, barely below 60 percent (Kenwood and Lougheed, 1992:47). After the mid-1880s Argentina and Brazil began to attract significant numbers of Europeans and so did Canada, after the turn of the century. Smaller numbers were moving from Britain to Australia, New Zealand and South Africa. The reasons varied somewhat, but the relative labour scarcity in the regions of recent settlement resulted in a wage gap between the New and the Old World. This gap was narrowed over time, as migration had its course, but such factors as high population growth, increasing the share of young adults (with good income expectations if they emigrated) in the domestic labour force, the presence of relatives abroad (chain migration) and rising mobility of labour as a consequence of industrialization at home more than compensated for this (O'Rourke and Williamson, 1997:Ch. 7).

The outflow of Europeans to the regions of recent settlement was not the sole component of the history of migration during the 1870-1914 period. There was also a South-South current of Indians and Chinese, mainly indentured, workers. Thus Indians were shipped to the West Indies, Mauritius, Fiji, East and South Africa and South America. In Asia, Burma,

Ceylon and Malaya were the main receiving regions. Altogether close to 16 million left India between 1871 and 1915, around three-fourths eventually returning home. The number of Chinese that emigrated is not known, but in 1880, some 3 million were residing abroad, a figure which in 1922 had increased to 8 million. The vast majority stayed in Asia, notably the Dutch East Indies, Thailand and Malaya (Lewis, 1978:185).

4 RESOURCE-LED GROWTH

The regions of recent settlement and the countries producing tropical goods all had certain features in common (Findlay and Lundahl, 1994). They all participated in the international exchange of commodities, trading their primary staples for manufactures. Staples production everywhere depended on the existence of a land frontier - not necessarily an open range, as in the classic piece by Frederick Jackson Turner (1921) on the westward expansion of the United States; it could as well be a virgin *selva* that needed clearing. This frontier could not be put to productive use unless it was somehow 'developed', commonly by the extension of transportation to the frontier region - a process which required investment. This capital to a notable extent had to be found in the international markets. The exploitation of the frontier also required workers. Both in the regions of recent settlement and in some tropical areas labour scarcity prevailed on the national level, which made international migration necessary. In other cases, scarcity was a regional problem that could be solved by domestic labour flows from surplus regions to the regions where staples were produced.

The mode of functioning of the world economy during the forty-five years preceding World War I produced growth rates of real GDP per capita in the regions of recent settlement and Latin America that exceeded those of Western Europe (1.5 percent per annum against 1.3) (Maddison, 1995:62-63), and by 1913 Australia and New Zealand had reached living standards exceeding those of the European countries, ranking with those of the United States and Britain as the highest in the world, and the figure for a country like Argentina (richest in Latin America) was not only above the one of for example Italy but 9 percent above the average for twelve Western European countries (Maddison, 1995:23-24).

No reliable national income figures for tropical countries exist for the 1870-1914 period, but it seems very likely that export-led growth which was strong enough to raise income per head took place also in this group. Food supply expanded as quickly as the population for the tropics as a whole and exports increased by 3.5-4 percent per annum in terms of real purchasing power, if we are to believe Arthur Lewis, who furthermore adds (1978:216):

> In the tropical countries at the top of the growth list, national income must have been growing as fast or faster than in Britain or France per head of population at this time (1.0 to 1.5 per cent per annum) and faster than in much of Central and South-East Europe. This must have been the case for say Ceylon, Burma, Thailand, Malaya or Gold Coast, and was certainly true of the developing regions of many other countries, such as Colombia or Mexico. Celso Furtado reaches the same conclusions for Brazil, and although this is in dispute for the country as a whole, it cannot be disputed for southern Brazil. Even India as a whole seems to have grown by an annual average of about one per cent per head over the fifteen years before the First World War, after a bad patch in the 1890s, and the growth rate was naturally much higher in those regions of the country where the response was concentrated …

Thus, while the response of the tropical economies to the challenge posed by growth at the industrial core of Europe and North America was not uniform, there were some definite success stories that merit exploration. This was even more true for the regions of recent settlement. In the present section we will examine fifteen such stories in some more detail. We have chosen to divide our cases into three main groups: regions of recent settlement (Canada, United States, Australia and Argentina), tropical countries, either dominated by plantations (Brazil), peasant family farms (Burma, Siam, Gold Coast), or a mixture of the two (Colombia, Costa Rica, Ceylon, Malaya), and, finally, mineral economies (Bolivia, Chile, South Africa). We begin with the experience of the regions of recent settlement.

4.1 The regions of recent settlement: theory

What Folke Hilgerdt called the 'regions of recent settlement' (League of Nations, 1945) are basically offshoots of Europe projected into the 'empty' continents of America and Australia by the export of population and capital. The factor 'land', however, had to be created by a process of

investment that extended the 'frontier' further and further but at an increasing marginal cost. The whole process is explained in stylized terms by the 'Christopher Columbus' general equilibrium model (Findlay: 1993, 1995 Ch. 5) and the integrated staples and vent for surplus model (Findlay and Lundahl, 1994).

In the Christopher Columbus model 'Europe' has a fixed endowment of land and population with which she can produce two goods, food and manufactures. The supply of capital is perfectly elastic at a fixed interest rate in the long run. Manufactures require a raw material (e.g. cotton), that can only be supplied from overseas, say 'America'. Land in America can be obtained at increasing marginal cost by the investment of capital (e.g. railroads to the West). Food and the raw material can be produced with land and labour at different factor intensities, the labour being provided by migration from 'Europe'. In equilibrium, the value of the marginal product of land in food production is equal to the marginal cost (in terms of capital) of clearing land. The model thus has three factors - capital, land and labour - and three goods - food and manufactures which are final consumer goods and the raw material, which is an input into manufactures. Given constant returns to scale technology for the three goods and consumer preferences for food and manufactures the model determines the distribution of population between 'Europe' and 'America', the output of the three goods, the prices of all the goods and factors, the extent of the land frontier and the endogenous supply of capital.

The implications of population growth, technological change in manufactures or an exogenous shift in the cost of frontier extension can all be ascertained by the appropriate comparative statics exercise for the model. The nineteenth-century experience of the United States, Canada, Australia and Argentina can all be accounted for in terms of the predictions of this model.

The Christopher Columbus model does not allow for industrial production in the regions of recent settlement. This feature can, however, be introduced in a model of staples production (Findlay and Lundahl, 1994). The (agricultural) staple is produced with the aid of labour and land. The latter has to be developed with the aid of capital before it can be used. Manufactures are in turn produced with the aid of labour and a capital stock consisting of the very manufactured good itself. As before, manufactures can be both consumed and invested and capital is in perfectly elastic supply, at a given interest rate.

The given rate of interest determines the marginal product of capital and hence the capital-labour ratio in manufacturing as well as the wage rate. The marginal product of labour in agriculture depends on the land-labour ratio. Using manufactures as the numéraire, the wage rate then provides us with unique ratio for each relative price of agricultural goods and hence also with unique marginal products of labour and land in the sector. Exactly as in the Christopher Columbus model, the value of the marginal product of land in agriculture must be equal to the marginal cost (in terms of capital) of developing land in equilibrium.

When the relative price of agricultural goods increases, labour is pulled into agriculture from manufacturing. The land-labour ratio falls and the marginal product of land increases. If equilibrium is to be preserved the marginal cost of land must then increase, i.e. the price rise must lead to increased development of land (an extension of the frontier). This, in turn leads to further migration of labour from industry to agriculture.

Trade is opened by an increase in the relative price of the agricultural staple, above the autarky price. Then the agricultural frontier will be extended, labour moves into agriculture from manufacturing and agricultural production increases, whereas in manufacturing the opposite sequence takes place, with a reduction of the capital stock and falling output as labour leaves.

Staples production also entails movements of capital and labour. Assuming that the rate of interest above was the one that prevailed in a closed economy, the opening up of the capital market to international conditions can be expected to make the interest rate fall. The capital intensity of the manufacturing sector will increase and labour will be pulled into that sector from agriculture. Possibly the land frontier will also be extended. This happens if (as a result of the loss of labour) the value of the marginal product of land in agriculture falls proportionally less than the rate of interest, so that the marginal cost of land will have to rise again, to preserve the equality of marginal product value and marginal cost of land. Thus, an inflow of capital will lead to an expansion of industrial production and possibly - if the rate of interest falls enough - also to increased agricultural output, i.e. to a general expansion of the economy.

The opening of staples trade may also be connected with an inflow of labour. As stated above, the initial effect of a rise in the relative price of agricultural goods is that labour will leave manufacturing for agriculture. In

sparsely populated countries the manufacturing labour force may be very small, so small that the increased demand emanating from agricultural expansion may empty the sector completely at the given wage rate. This is likely to result in immigration. Labour will then flow into agriculture until output has risen there to the extent required by the relative world market price of agricultural goods. Any inflow in excess of this level will go into manufacturing, where it will trigger a corresponding increase of the capital stock, so as to maintain the factor proportions in that sector that are compatible with the given rate of interest and wage rate. This, in turn, increases the national income and with that the domestic demand for the agricultural staple so that the exportable excess supply of the latter will shrink.

4.2 The empirical picture

The traditional view of the growth process in the regions of recent settlement is that countries like the United States and Canada managed to extend growth across a wider spectrum of sectors than just the primary export ones, in a manner reminiscent of Walt Rostow's (1960) takeoff stage while, for example, Australia and Argentina failed to do so. Beginning with Canada, the economy for which the staples theory of growth was originally developed (Innis, 1930, 1940), linkages were created from the numerous staples, notably from wheat production which made the westward extension of railroads across the prairies necessary and furthermore stimulated the manufacture of agricultural inputs. Warehousing, processing, construction, housing and public utilities received strong impulses, staples production provided raw materials for flour mills, saw mills and paper mills, and the incomes generated in the West were spent on manufactures in the East.

The growth rate of the Canadian manufacturing industry was surpassed only by that of the Japanese (Meier, 1953:5-6, Stovel, 1959:123-24, Bertram, 1963). Possibly, tariff protection had something to do with this, but it does not seem to have been responsible for the establishment of any of the major branches (Stovel, 1959:96, 102). The impetus from staples production carried over into later periods as well. Not only between 1900 and 1913, but also 1920-29 and 1946-56, the Canadian manufacturing sector grew as domestic markets developed around the export raw material base, replacing imports (Watkins, 1963:158). Pulp and paper production, as well as mining and natural gas, led to the development of forward linkage and in addition turned out to stimulate each other (Caves and Holton, 1959:46).

The United States constitutes an even better example of how trade in staples created extensive linkages across a wide territory (North, 1966). The first impulses were generated in the cotton kingdom of the South before the Civil War. A growing international demand for cotton raised incomes and also created a demand for inputs not produced in the region. The South provided neither the food it needed nor the manufactured consumer goods, so linkages were established both with the wheat-growing West and the industrialized North-East. The western frontier could, however, not be developed without previous extension of the canal and railroad network, pulling migrants as well as international capital (North, 1956) along in the process. Staple-induced growth was at work.

The process continued after the Civil War, however, with slightly different protagonists. Now, wheat itself, together with livestock and minerals, notably coal, was a staple, with migrants pushing the frontier westwards, along with the transportation network, in a movement that would not cease until the West had been settled, around 1890. Simultaneously a widening of the market for northeastern manufactures took place (Perloff et al., 1960:Ch. 12-14).

To what extent the staples theory applies to the case of Australia has been subject to some controversy. As a minimum, however, it appears to apply to the 1850s, the 1870s, part of the 1880s and the years immediately before World War I (Lougheed, 1968). However, even though growth took place in rushes and booms, the entire period beginning in the 1830s and extending up to World War I was characterized by a substantial extension of the resource base. Gold and wool provided the stimulus (McLean, 1989), and immigrants (Pope and Withers, 1994, Taylor, 1994) and capital (Pope, 1990) flowed in to help with the extension of the frontier on the outback and the extraction of the precious metal.

The overwhelming majority of the immigrants were British. (Australia maintained a 'whites only' policy.) Most of these ended up in urban-based jobs (Pope and Withers, 1994:243). A diversified industrial sector was built up, under the natural protection of distance. At certain points this sector came under strain. Thus, the gold rush in the 1850s produced Dutch Disease effects for a full decade. It stimulated imports of a number of manufactured consumer goods, to the detriment of domestic producers, but spurred the output of industries related to construction that were producing non-tradeables (Maddock and McLean, 1984:1059-60). At any rate, between 1860 and 1890 the industrial sector picked up again. In 1891, one

out of every three Australians lived in an urban centre and less than one-third of the wage earners worked in mining or rural production (Denoon, 1983:147). This trend was to continue during the next decade. Although most urban pursuits were related to exports, each of the Australian colonies in 1899 could boast a range of industrial activities as well, and in 1910 almost one-fifth of the labour force was employed in manufacturing (Denoon, 1983:153).

It was, however, still the primary sector that was most important economically, being the only exporter. When World War I broke out, the Australian economy continued to be dominated by pastoral, agricultural and mining production, although a diversification had taken place, with mutton, butter, wheat and sugar having been added to wool and gold (and other minerals) on the export list (Denoon, 1983:100-04).

Argentina attracted both capital (Taylor, 1992) and large numbers of immigrants (Taylor, 1994) who peopled the Pampa (Jefferson, 1926) as the agricultural frontier was extended. Between 1890 and 1913 half the population growth of the country was due to immigration (Taylor, 1994:97). From the 1860s a number of staples appeared on the scene: hides, wool, salted meat, wheat (notably in the 1890s), corn, linseed and frozen meat. Linkages were not missing. Extending the frontier required railroads (Cuccorese, 1969), and exportation required *frigoríficos*, packing facilities etc. Forward and backward linkages were developed from livestock and agricultural products (Denoon, 1983:157-59), and domestic manufacturers began to compete with imports in the market for consumer goods (Díaz-Alejandro, 1970, 1984).

The conventional wisdom in the Argentine case is that by 1913 there was not much industry to speak of in the country and that the industrialization process dates from the 1930s (e.g. Ferrer, 1963). This has, however, been questioned by a number of authors (cf. the references in Cortés Conde, 1992) who have argued that an import-substitution process was at work already before World War I. High growth rates of manufacturing output were obtained as domestic production of consumer goods replaced imports, in the face of increasing and diversifying demand (Cortés Conde, 1985:349-51) and linkages to primary production were exploited (Denoon, 1983:157-59). While the industrial sector remained small in absolute terms in 1913, a beginning had been made.

Our four examples of regions of recent settlement present a relatively uniform pattern. All of them based their export activities on the existence of an unexploited land frontier, all of them received both capital and labour from abroad and all of them were in the process of industrializing as World War I broke out. Primary exports had provided an impulse that was not confined to the resource-intensive sectors themselves but spread to other sectors as well through linkage effects of various kinds. Thus these four case studies exemplify the benign scenario of the 'Liberal' story, with perhaps some further 'Interventionist' stimulus.

4.3 Tropical countries: theory

For our tropical case studies the most useful theoretical framework will be the classical dual economy formulation of Arthur Lewis (1954), but extended and formalized to explicitly account for international trade in primary products and manufactures in Findlay (1973:Ch. 5). The model has a 'peasant hinterland' that plays the role of a source for a perfectly elastic supply of labour at a fixed real wage. The 'modern' sector consists of profit-maximizing entities such as plantations, mines or commercial farms that use capital and labour to produce an output that can be sold on the world market. The economy is too 'small' to affect the relative price of imported manufactured consumer or capital goods but is assumed to be a significant supplier of its primary export (e.g. Brazilian coffee or Malayan rubber). There is thus a world demand curve for the export staple that is assumed to shift over time at some exogenous rate λ. Given the initial capital stock profits are maximized when the marginal value (or revenue) product of labour is equal to the given real wage. Profits are the sole source of capital accumulation. Denoting the profit rate by π and the propensity to save out of profits by s, the growth rate of capital, g, will be equal to $s\pi$. The profit rate π is endogenous and depends upon the terms of trade, the relative price of the primary exportable in terms of manufactures.

It is readily demonstrated that if g is greater than λ, i.e. supply of the primary export grows more rapidly than world demand its relative prices will fall, thus pulling down π and hence g until it is equal to λ. Increasing g through a higher rate of saving or π through technical progress does no good in the long run since the economy is permanently constrained by the growth of world demand. When this is brisk, as it was for most tropical products in the 1870-1914 period, trade is truly an 'engine of growth'. When it sputters, however, as in the inter-war period, the prospects are bleak. This situation then corresponds to the pessimistic 'Marxist' story.

The possibility of labour-intensive manufactured exports has, however, to be introduced. Here any developing country by itself would be 'small', so the growth prospects of an open dual economy are still given by $g=s\pi$ as before but π is now constant (given the technology and the real wage) since the relative price of the labour-intensive exports and capital goods imports is given. Higher rates of saving or technical progress can now *permanently* raise g since they no longer induce declining terms of trade.

If we denote the rate of growth of a 'pure' manufacturing dual economy (i.e. an economy where the modern sector produces only manufactures) by μ an interesting case to consider is when the economy has both a profitable primary sector and the possibility of manufactured exports. Thus suppose that g is greater than μ which is in turn greater than λ. Primary production may initially be very profitable if demand is very high. These high initial primary sector profits make g greater than μ and so the economy can initially grow even faster than if it were completely specialized on manufactured exports. Even though initially high, however, the world demand for the primary export grows relatively slowly at the rate λ (less than μ). Manufacturing production, however, now starts to become increasingly important and the primary exports, though growing in absolute volume at the rate λ, become less and less important relative to manufactured exports. The limiting growth rate is μ (greater than λ) and so the economy can successfully escape the 'trap' of slowly growing world demand for primary exports.

The foregoing assumes that the staple economy has at least some degree of monopoly power in world trade. If the economy is truly 'small', however, the relative price of the staple would be exogenous and so the growth rate would depend only on supply-side factors such as capital accumulation and the rate at which the frontier can be extended.

Here, the staples model (Findlay and Lundahl, 1994) is also of relevance. Tropical staples production in the context of a peasant economy, however, differs from staples production in the regions of recent settlement. In the tropics, there was no specialized manufacturing sector but just subsistence agriculture combined with handicrafts during the dead season. Assuming that the economy has abundant land, we may model this sector simply as one where the peasants can obtain a given wage (real income) along the lines of Bent Hansen (1979) and Arthur Lewis (1954).

When international trade is opened this economy can export a staple in return for imports of manufactures and besides gets access to capital at a given rate of interest. Again, the staple has to be grown on land that must be cleared, and for the latter the peasants have to be fed out of the subsistence sector, i.e. the cost of clearing land is measured in terms of subsistence goods (a wage fund or a kind of circulating capital). The value of the marginal product of labour in staples production must then be equal to the given subsistence wage, and the value of the marginal product of land must equal the marginal cost (in terms of the wage fund that has to be borrowed) of clearing it. This determines the agricultural frontier and, hence also the number of workers producing staples, since once the world market price of staples is known so is the land-labour ratio.

In the peasant setting, the rent created by clearing land for staples production will simply be equal to the interest cost of the wage fund that has to be borrowed in order to make it possible for the peasants to clear the land, since land is in infinitely elastic supply. Thus, the real income of a cash crop cultivator and a subsistence cultivator will be equal. If instead, the farm producing staples is a plantation there is no real difference in the mechanism through which the land is cleared. However, instead of peasants we will have agricultural workers recruited from the subsistence sector earning the fixed wage, and instead of the wage fund we have the plantation owner borrowing the funds necessary for the clearing.

4.4 Tropical countries I: plantation economies

The experience of the tropical exporters is less uniform than that of the regimes of recent settlement. This should not come as any surprise, since both the structure of their economies and the export crops differed widely from country to country. We begin with the plantation economies.

In Brazil, coffee exports began to take a rapid upward turn in the 1830s, as coffee drinking spread throughout North American society. In the 1880s the centre of production shifted from Rio to São Paulo, and from the beginning of that decade to the outbreak of World War I, export volumes almost tripled, expanding to the point where Brazil could wield considerable monopoly power in the world market, supplying more than half the internationally marketed coffee (Dean, 1986:694). The coffee plantations rapidly attracted around 1.5 million immigrants between 1880 and 1913 (Coes, 1970:102-03). Smallholders participated in production, since land was more easily available in São Paulo than in general in a

country dominated by large estates. 'The coffee frontier swept forward like a bush fire' (Dean, 1986:701), clearing the forest, towards the western part of the state of São Paulo.

The coffee industry received support from the government in various ways. Much of the migration was subsidized by the federal or the state government (Dean, 1986:704). The railroad network was expanded from the coastal ports into the coffee-growing areas in the interior, with the aid of foreign capital, but also with considerable government support, and the state also intervened first by devaluing the currency, and later by supporting large-scale price stabilization efforts, when downward price movements threatened incomes (Cardoso de Mello and Tavares, 1985: 95-105).

During the 1870-1914 period Brazil also saw the rise and fall of another primary export crop, rubber, which grew wild in the Amazonas and could simply be tapped by collectors who were drawn into the area. Between 1872 and 1900, the population of the Amazonas grew by 5 percent per annum, far faster than in any other region of the country. Once rubber seeds had been smuggled out of Brazil in 1876, it was just a matter of time before prices began to fall precipitously (in 1910) and the rubber boom came to a rapid end (Coes, 1970:117-18).

The coffee boom brought incipient industrialization to Brazil (Dean, 1969), notably in the non-tradeables sector (Catão, 1992:36-43). Coffee bags were needed on the plantations and clothes were demanded by the coffee workers (Stein, 1957). This made for the beginning of a local textile industry which in 1913 was able to supply over 75 percent of the total Brazilian consumption of cotton textiles. Gradually, markets widened, as a result of export incomes and improved transportation. Coffee growers diversified their assets by investing in manufacturing as well, and the foreign exchange generated by coffee made it possible to import the needed capital goods (Cardoso de Mello and Tavares, 1985:114-17). Chemicals, food preparation and metal working were early starters (Coes, 1970:119-20).

The results of the coffee and rubber booms in terms of growth were uneven. The rate of growth of real GDP per capita appears to have been below 1 percent (Catão, 1992:1), with the coffee producing regions reaching 1.5 percent, and the Amazonas no less than 4 percent - a figure that, however, quickly became mere history (Coes, 1970:123-25).

4.5 Tropical countries II: mixed economies

Another coffee-producing country is Costa Rica, the first Central American country to export - as early as in the 1830s. The staple phase of coffee growing, dominated by smallholders, began in the early 1840s, with exports to Britain, and less than fifty years later less than ten percent of Costa Rican exports did not consist of coffee (Bulmer-Thomas, 1987:3). In the meantime, a second (plantation) staple had made its appearance: bananas, which had been grown along the railroad for coffee exports that was being built from Puerto Limón to San José, to contribute to cover the cost of the latter (Gaspar, 1979:21-32).

In the first stages of expansion, until the 1880s, coffee benefited from the fact that Costa Rica was a sparsely populated country, with much waste land (Cardoso, 1977). Bananas, in turn, were grown in swamps and jungles that had no alternative commercial use, all the way into the 1920s (Bulmer-Thomas, 1987:38). Labour was a far worse problem. Coffee could expand only by bidding the wage level up (Cardoso, 1977:179), and bananas were grown in such an unhealthy climate that the white population refused to work there. Black workers from the West Indies had to be brought in (Gaspar, 1979:111-24). British commercial houses financed Costa Rican coffee exporters (Cardoso, 1986:204) and external finance was completely necessary for the banana venture as well, which had to build an infrastructure from scratch in an uninhabited area (Bulmer-Thomas, 1987:7).

Linkages were created, not only from coffee to the Atlantic railroad and from there to bananas, but also to banking (while the financial requirements of bananas were such that North American banks had to be involved). Against this, however, we must set the fact that the banana industry required mainly import-intensive inputs and tended to form an enclave in the domestic economy, that coffee production drove food production out in the areas where it expanded, and that no industry to speak of had developed by the 1920s (Bulmer-Thomas, 1987:40). In the absence of production linkages, the demand generated by incomes from staples production was directed mainly towards imports and was not large enough to make domestic production in a country the size of Costa Rica viable.

Coffee dominated the exports of Colombia as well. Production began to surge in the Antioquia province in the 1880s, where it became a smallholder crop which could fit into the already existing pattern of peasant

agriculture without problems and without replacing food crops in the process (Harbison, 1970:79). The land, which was easily available, in the relative absence of pre-existing large estates, was uniquely suited to its inclusion, and the volume of coffee exports increased eighteen-fold between 1878 and 1914 (Harbison, 1970:83).

Colombia was not one of the main recipients of European labour in Latin America, but the hands needed for coffee growing could be secured via internal migration, both permanent and seasonal. Some of the capital was foreign but essentially, the coffee industry remained a Colombian undertaking (Deas, 1986:655). As late as 1914 foreigners owned a mere 4 percent of the Colombian capital stock. Most of this investment was in the transport sector (Harbison, 1970:96). Railroads began to be developed (see Horna, 1992, for a fascinating case story), however, on a small scale only, mainly to serve coffee exports, and were combined with steamboats for further transportation on the Magdalena river.

Since the Colombian coffee growers were mostly smallholders, the fruits of growth were spread across many hands and this in turn helped to create linkage effects, through increased demand for products 'which could be produced most economically in increasing quantities at home' (Harbison, 1970:84), like textiles. At first, crafts and cottage industries dominated (Ocampo, 1991:216-17), but factories were established in Medellín immediately after the turn of the century (Reynolds, 1985:114). The simple technology employed in turn made for backward linkage in the form of sacks and simple implements that could also be produced locally. Only Medellín, however, managed to develop a significant industrial sector before World War I (Harbison, 1970:87). On the national level manufacturing remained relatively undeveloped.

What the effects of coffee exports were in terms of growth rates is impossible to say, since no GDP estimates are available for the period. Besides, some traditional exports, like tobacco and straw hats, were having problems, so that export trade as a whole may have been in decline until 1902, when the so-called War of the Thousand Days (a civil war, 1899-1902) ended (McGreevey, 1985:27). However, the most likely picture resembles the one given by Lloyd Reynolds (1985:115) for 1885-1930:

> It is almost certain that per capita income was rising, though with fluctuations associated with the varying fortunes of exports ... It is certain also that growth was uneven regionally, with Antioquia

> enjoying a rate well above the national average. Further, a considerable part of the population - small subsistence farmers in the interior of the country - was largely left out of the growth process.

Coffee was the staple crop of Ceylon as well from the 1840s to the 1880s, when the industry was ruined by a fungus disease from which it never recovered (Corea, 1975:58-64). The next three decades instead saw the rise of a trio of new staples: tea, coconut products and rubber. Rising per capita consumption, together with a growing preference in Britain for the Ceylonese product over its Chinese competitor, provided a stimulus for the extension of the area under tea cultivation, notably after 1884, up to 1906, with continued growth of output up to the outbreak of the Great War (Corea, 1975:71-75). Rubber, benefiting from strongly rising prices, as the automobile industry expanded, joined tea as an important export product in the 1890s and the cultivated area grew rapidly up to 1910, when prices began to drop. Coconut products, finally, had begun their expansion in the 1870s. Together these three crops made for a rapid growth of exports. Between 1880 and 1913 the dollar value of exports rose at 5.4 percent per annum on average (Craig, 1970:221).

Two of the new staples were excellently suited to smallholder production. Capital requirements were low in both rubber and coconut production, and relatively little labour was needed. Tea required both more labour and more capital per unit of land (Craig, 1970:228). Capital had to come from abroad and the plantations absorbed large numbers of Indian (Tamil) immigrants who had begun to come into the country already during the days of coffee exports. In the 1880s an estimated 200,000 workers had settled together with their families (Snodgrass, 1966:25) and in 1911, their number had increased to 366,000 (Craig, 1970:230). The native Sinhalese avoided plantation work, as it seems because they had better options remaining in their villages. As elsewhere, the government was active in the extension of railroads, roads, irrigation facilities and port facilities (Reynolds, 1985:137, Bruton et al., 1992:21).

The Ceylonese plantation sector has often been pointed to as a classic example of enclave development, importing even the food for its workers. However, as Lloyd Reynolds (1985:137-38) has emphasized, the export sector as a whole is likely to have had important spread effects, since it made it possible for smallholders to increase their incomes, and it led to the creation of a domestic planter class in the coconut and rubber sectors. This,

in turn, may have widened the domestic market, and some industrial development in fact took place, with employment in manufacturing increasing at 2.8 percent per annum between 1881 and 1911, until a figure of 170,000 workers (10 percent of the workforce) was reached (Craig, 1970:245). Altogether, GDP per capita may have increased at some 2 percent per annum (Reynolds, 1985:137).

Rubber was introduced into another colony in South East Asia as well: Malaya. Exports began in 1906, and expanded extremely fast until the beginning of the 1920s (Gunnarsson, 1983:6). The initial expansion was fuelled by plantation development. British capital combined with cheap Tamil labour from India to make use of virgin lands, mainly on the west coast where a good infrastructure, in the form of roads, railroads and ports, had already been established to serve tin exports (Bruton et al., 1992:178). With time, Chinese and Indian growers became involved as well, both on plantations and on small farms, where rubber could easily be fitted into the existing growing pattern. After 1910, output in the smallholder segment, which by then also included Malays, grew exceedingly fast (up to World War II) in spite of government measures to the contrary (Gunnarsson, 1983:21).

Malaya had a second staple, tin, which had been mined mainly by Chinese entrepreneurs who managed to take advantage of rising demand and a changing technology in the mid-nineteenth century, aided by government railroad construction from 1885. Large numbers of Chinese workers were brought in. In 1911, when Malaya accounted for half the world production, the Chinese composed over 95 percent of the tin mining community (Bruton et al., 1992:177). After 1912, however, when yet another, capital-using, technological change, which furthermore required skilled workers, took place, the British began to take over. When World War I broke out, the Chinese, however, still accounted for three-fourths of the output (Reynolds, 1985:151).

With the exceptions already mentioned, neither rubber production nor tin mining did much to establish linkages. Chinese and Indian workers ate imported rice (which differed from the domestic variety consumed by the Malays) and manufacturing failed to develop. As late as 1947, less than 7 percent of the labour force was employed in 'industry', which actually consisted mainly of handicraft operations and small establishments (Reynolds, 1985:152).

4.6 Tropical countries III: peasant economies

An agricultural staple does not have to be a product that is introduced from the outside. On the contrary, some of the most successful Asian staple exporters grew by simply expanding the output of their main food crop. Such was the case for example with Burma (Furnivall, 1957, Hlaing, 1964, Adas, 1974). In the mid-nineteenth century, Lower Burma was nothing but a sparsely populated, but potentially fertile, area. Things changed, however, as the British occupied the territory in 1852 and even more after the opening of the Suez Canal in 1869. The availability of European manufactures increased. An upward pressure on the price of rice ensued, rice turned into a commercial crop and the British administration began a conscious policy of boosting its cultivation in Lower Burma. Cultivators from Central and Upper Burma were induced to move southwards, and labourers (both permanent and temporary) were imported from southern India (from the 1880s) with the aid of subsidies. Transportation facilities (railroads, canals, etc.) were improved (Hlaing, 1964:32-36).

The expansion process quickly reached the point where it fed on itself without any further need for intervention. Indian Chettyars (moneylenders) and reinvested profits provided the capital for cultivation and European trading houses financed the steam-powered rice mills. The area under rice cultivation grew eight-fold between 1852 and 1915 (Hlaing, 1964:6) and Burma become the leading rice exporter in the world. With the exception of rice milling and sawing of logs, rice production failed to produce any substantial linkages, however. Handicrafts and cottage industries failed to meet the competition from imported manufactures (Furnivall, 1957:161-62). Still, it has been estimated that during the first three decades of the twentieth century per capita income grew at 0.8 percent per annum (Hlaing, 1964:51, Appendix A). To what extent this increase was widely shared is in some doubt, since a process of land concentration was operating (Furnivall, 1957:Ch. 6) and real wages may have stagnated or even fallen (Hlaing, 1964:Ch. 2).

A second rice exporting economy was that of Siam. There, exactly as in Burma, around 1850 rice was the main subsistence crop. In 1851 the country saw the ascendance of a modernizing king to the throne who four years later signed the so-called Bowring treaty with Britain, followed by similar treaties with other European nations, opening Siam for international trade. The road lay open for a fast increase of rice exports, fifteen-fold from the late 1850s to World War I, after the opening of the Suez Canal and the

concomitant cheapening of European manufactures. The main demand for Siamese rice came from Malaya and China and the share of exports in total output rose from about 5 percent in 1850 to 50 percent at the turn of the century (Reynolds, 1985:158). Tin and teak wood supplemented rice on the export list, both with upward trends that were as steep as the one for rice exports.

Siam could draw on unused land in the expansion process, first in the central plain and thereafter east of Bangkok. The Crown freed the agrarian population from forced labour services for the nobility and facilitated access to these lands for smallholders, refusing to create a landed aristocracy (Phongpaichit and Baker, 1995:3, 23-25). Canals, mainly for drainage, were dug and railroads constructed, financed by bond issues in London. Migration played a comparatively smaller role in Siam than in Burma. Migrant workers from the northeast were used mainly to meet seasonal peaks, but the main labour input came from a reduction of the leisure of the peasant families themselves. (Chinese workers, however, were drawn into urban areas, since the success of rice contributed to keeping wages high.) Also, capital requirements were comparatively small, in the main limited to a plough and a bullock, which could usually be financed by a local merchant (Phongpaichit and Baker, 1995:32).

The rice producing economy failed to develop any linkages into manufacturing (Akira, 1996:33-39). On the contrary, hand in hand with the expansion of exports went an expansion of imports of European manufactures. Domestic industries, like sugar refining and cotton weaving, went into decline. European goods proved much cheaper. In 1919, Bangkok could boast of a mere seven modern factories. As in the Burmese case, the only offshoots of rice production were saw milling and rice milling. The Siamese economy grew by absorbing the growing population into rice cultivation, not by diversifying into manufacturing (Ingram, 1971).

Peasant economies, however, also managed to develop export crops that were not originally part of their agricultural tradition. One of the best examples of this is cocoa in the Gold Coast. Cocoa was introduced there in the 1860s, and when the price of palm oil (the main export product) fell in the 1880s cocoa production rapidly took off, until in 1913 the Gold Coast had become the world's leading cocoa exporter (Hill, 1963). Between 1891 and 1913 the export volume increased from 50 pounds to 50,600 tons (Holmes, 1970:151) and real income per head may have grown at 1.8-1.9 percent per annum (Szereszewski, 1965:111,127), driven by cocoa (and to

some extent gold, the production of which, however, was very enclave-like) (Holmes, 1970:151-52).

Cocoa was easy to integrate into the already existing agricultural systems. Traditional food crops and the new export products could coexist without problems (Szereszewski, 1965). Labour was secured by a migration of the enterprising Akwapim to the southern cocoa producing region where forest land that could be cleared was plentiful (Hill, 1963). In the beginning, little capital was needed, but as the industry expanded, European merchant houses gradually moved in and provided credit for investment and consumption during the months preceding the harvest (Gunnarsson, 1978:51-53). Transportation was no problem, since the production areas remained within about fifty miles from the coast (Holmes, 1970:152). By the same token, however, few linkages developed. Railroads did not arrive in the Gold Coast until after 1900 and then only to serve the needs of gold mining (Holmes, 1970:163-65).

The patterns characterizing the tropical producers are not as easy to sum up as those of the regions of recent settlement, because of the greater variety of economic structures. Still, a few common themes emerge. The most salient one is the failure to industrialize (with the exception of Brazil). Exportation of tropical crops created fewer and weaker linkages of the type necessary for industrialization. Growth thus tended to be concentrated on the export sectors themselves. Secondly, the character of migration differed. Some countries relied mainly on internal movements and those who did not received Indians and Chinese, not Europeans. Thirdly, crops were often easy to graft on to the existing systems of production and required relatively little capital. Hence, capital movements played a lesser role than for the regions of recent settlement. When larger injections were necessary, however, they came from foreign sources.

4.7 Mineral producers

We now turn to the three mineral exporters. For the most part our models will apply in this instance as well. The 'frontier' now will extend vertically downwards rather than be horizontally extensive as in the case of land and agriculture. With this modification the framework of the staples model (Findlay and Lundahl, 1994) can be used here as well.

A country which switched from one mineral to another in the 1870-1914 period was Bolivia. In the late 1840s the silver mining, once so important

for the Spanish empire, was in a state of crisis, employing a mere 9,000 miners (Klein, 1986:554). However, in the decades following 1850 a revitalization took place. Cheap steam engines made it possible to reopen old closed and flooded mines, and a lowering of the cost of mercury cheapened silver extraction. Mining expertise was available from Chile and Peru and profits made on grain production in the Cochabamba valley were partly reinvested in silver mining. In the 1870s new mines were producing on the Pacific coast, with the aid of foreign capital. At the end of that decade Bolivia was once more a leading producer of refined silver. From the 1850s to the 1890s output increased almost nine times (Klein, 1986:554-57).

Silver mining created two important backward linkages. One was to agriculture. The Bolivian *haciendas* had been more or less dormant for half a century. The increased demand for foodstuffs that resulted from the expansion of silver mining, however, changed this. Production increased, unfortunately to the point where the large estates began to encroach on the lands of the Indian communities. The second backward linkage consisted in the stimulus offered to the construction of railroads which made exports a great deal easier and which furthermore contributed to the widening of markets, not least for agricultural products (Klein, 1986:557-59).

Railroad construction, in turn, played an important role in developing the second mineral. In the mid-nineteenth century, a number of events took place that made tin exports possible (Hillman, 1994). Smelting techniques improved in Britain. The use of tin plate, notably for cans, increased. The expansion of silver mining created skills and knowledge that could easily be transplanted to the tin sector. Above all, the high internal transportation costs (an almost insurmountable obstacle to exports) were gradually lowered by a series of railroad constructions, pursued by successive Bolivian governments (Contreras, 1993:2-3).

When the silver market collapsed (Hillman, 1994:414), tin entered an extremely expansive phase, with exports more than doubling between 1900 and 1910 and employment increasing from 3,000 to 15,000 in 1915, backed by the entrance of foreign (British, Chilean and US) capital (Contreras, 1993:32-5). Exports grew at 5.9 percent per annum up to 1919 (Klein, 1986:566).

Silver and tin failed to transform the Bolivian economy. Mining as such employed relatively few people, and the harsh working conditions in the

high altitude mines in combination with the seasonal demand emanating from agriculture made labour scarce, which in turn fostered mechanization in many places as early as 1912-15 (Contreras, 1993:4). Also, no industrialization to speak of had taken place as late as the beginning of the 1950s Klein (1986:585-86).

Bolivia's neighbour, Chile, experienced a boom in nitrate production between 1880 and 1919 (Mamalakis, 1971, Monteón, 1982, O'Brien, 1982, Cariola and Sunkel, 1985). The 'Nitrate Age' began with an exceptional event. No nitrate deposits existed within Chile's borders. They were acquired from Peru and Bolivia through the victory in the War of the Pacific (1879-83). Hereby Chile obtained a virtual world monopoly of nitrate production which permitted a twelve-fold expansion of exports between 1880 and 1913 (Mamalakis, 1971:184), with employment in the nitrate industry increasing from 2,800 to 53,200 (Cariola and Sunkel, 1985:186). During the war, British interests had started buying into the nitrate industry (with the aid of loans from a Chilean bank) and in 1890 they controlled 70 percent of the industry, a figure which, however, was to fall to 39 percent in 1914 (Blakemore, 1974:22, Centner, 1942:81).

Nitrate exports generated growth of per capita income, at an estimated rate somewhere between 1 and 2 percent per annum (Mamalakis, 1976:4-6). This growth was the result not least of linkages. In the 1860s and 1870s Chile had been a wheat exporter, but thereafter the extensive grain producers in North and South America, Russia and Australia took over the international market. However, since the nitrate fields were located in the desert areas of the Norte Grande, where agriculture was impossible, a domestic market could be found among the workers and their families who had migrated there (Bauer, 1975:Ch.3). For this, and for the development of nitrate production, extension of the railroad system was necessary. From 1860 to 1887 its total length was expanded ten times (Kirsch, 1973:17-20). The Chilean government, which had become totally dependent on nitrate taxes for revenue, also devoted some of the revenue to the expansion of the educational system. Between 1860 and 1915 the numbers of students enrolled in the public education system increased from 20,500 in 1860 to 368,000 in 1915 (Cariola and Sunkel, 1985:208).

Nitrate mining and agricultural production helped creating an industrial sector in Chile. In 1875 a mere 1-1.5 percent of the labour force was employed in manufacturing (García, 1989:146,150). Between 1880 and 1913, however, the sector began to grow. Agricultural products were

processed and processing equipment was manufactured in Chile. Nitrate production, in turn, provided the foreign exchange necessary to bring in industrial inputs and also provided an expanding market for industrial goods (Kirsch, 1973:23-29; Cariola and Sunkel, 1985:165-70). Altogether, industrial output almost doubled in Chile between 1880 and 1913 (Kirsch, 1973:49). Henry Kirsch (1973:80) concludes:

> …during the period stretching from 1880 to 1914, judged by the criteria of rate of growth, product diversification, systematic linkages with its own sector, integration to the rest of the economy and technological advance, Chilean industry experienced considerable expansion and progress. The common belief that a real process of industrialization did not exist before the outbreak of World War I may be considered nothing more than an unsubstantiated myth.

South Africa became a mining economy during the last quarter of the nineteenth century, after the discoveries of diamonds in Kimberley in 1867 and gold on the Witwatersrand in 1886. These discoveries, which resulted in a spectacular growth of output and exports, in particular of gold (Hobart Houghton, 1971:18), were supported by an inflow of both people and capital from abroad. From 1860 to 1920 the white population grew at over 3 percent per annum, on average (Nattrass, 1981:130). This was far from enough, however, since 'an almost insatiable demand for labour' (Hobart Houghton, 1976:12) arose. The mines began to exert pressure on the government to provide Africans at low wages. Thus, through a series of laws, culminating in the 1913 Natives Land Act, the Africans were confined to a mere 7 percent of the South African territory (Bundy 1972:384-86; Horwitz, 1967:134). In addition, various attempts were made by the Chamber of Mines to monopsonize labour recruitment. After various failures these finally succeeded in 1911. Finally, the borders were opened for an inflow of workers from the neighbouring territories (Jeeves, 1975). The end result was stunning. Wages in gold mining were no higher in 1971 than in 1911 (Lipton, 1985:388). Willing hands were not lacking, however. While at the beginning of the 1860s mining employment was virtually nil, in 1912 it had risen to 325,000 (Hobart Houghton, 1971:19).

Capital came from different sources. High returns to diamond mining made it easy to expand on the basis of reinvested profits during the early years and it was not until the concentration that ended with the creation of a monopoly in 1889 began to take place that foreign loans were resorted to

(Nattrass, 1981:132-33). Gold was a different matter, with low-grade ore bodies at deep levels. Here, foreign capital entered the picture virtually from the outset (Frankel, 1938).

The diamond and gold fields were located in an area without modern communications. From 1860-69 to 1900-10 the railroad network was expanded no less than a hundred times, with the mining districts as the hub of the system. This was complemented by road construction which furthermore contributed to bringing agricultural districts in closer contact with the mines where 'fantastic prices' were being paid for food (Hobart Houghton, 1971:19-20). The huge concentrations of people in the mine districts also provided the demand that was necessary for the beginning of manufacturing. Mining equipment, dynamite and other inputs (like miners' boots) needed for the extraction of the precious metals were soon produced locally, but since competition from the mines for skilled labour and entrepreneurship was very keen, it was not until World War I forced import substitution on South Africa that industry began to grow (Hobart Houghton, 1976:121). Thereafter, however, the pattern would be one of very intimate relations between mining and manufacturing. Jill Nattrass (1981:164) summarizes:

> The foreign exchange earned from the sale of minerals financed the extensive importation of both capital goods and essential intermediate inputs that were needed by the growing industrial sector. The new sector also drew on the pool of skilled labour and the financial and business know-how that had developed as the mining industry expanded. Mining houses started to diversify their activities and moved into the industrial field, both directly and indirectly, allowing capital accumulated in the mining enterprises to be used to expand South African industrial capacity.

The patterns prevailing among the mineral exporters resemble those of the agricultural producers of the regions of recent settlement. In mining the frontier is vertical, not horizontal. The mineral, however, resembles land in the agricultural societies. Both have the character of an intermediate good that has to be produced before it can enter as an input in the production of other goods. Also, transportation costs loomed large in all three cases. A second common characteristic of the three mineral economies was that all of them were large actors in the world market, notably Chile with its virtual monopoly on nitrates, but also South Africa and Bolivia. Thirdly, internal migration played an important role. Only in the South African case did

large numbers of workers come in from abroad. It was only for skilled manpower that the other two countries relied on immigration. Finally, the experience with respect to industrialization differed. Only Chile managed to push ahead before World War I, while Bolivia failed completely. In South Africa the war provided the impetus, but thereafter the minerals sector and manufacturing developed a strong relationship.

5 CONCLUSIONS

The 1870-1914 years were a period of high growth rates in resource-rich economies. Through their incorporation in the international economic network these economies were able to make use of not only trade with the industrialized regions of the world but also of flows of capital and labour from abroad. All of them were producing and exporting staples, i.e. resource-based products in high, frequently increasing, demand in international markets.

However, not all resource-rich economies succeeded in spreading the growth impulses emanating from their primary sectors. As we have seen in the foregoing, in a number of instances the staples sector turned out to be an enclave with little contact with the rest of the economy. This fact is not the result of a single configuration of circumstances but may be due to a number of factors. The staples approach to growth and development is 'rich' in the sense that it allows for different outcomes. It points clearly to the interplay between international commodity trade, international factor movements and the existence of a land frontier. This does, however, not mean that a given combination of factors would always result in identical growth effects, even when the commodity produced happens to be the same. The staples theory does not proceed beyond the analysis of how various sectors interact with each other, i.e. like other neoclassically inspired approaches it points out signs and directions, not magnitudes.

If we are to explain magnitudes, like growth rates, empirical examination is necessary. Robert Baldwin (1956), over forty-five years ago, pointed to the importance of the characteristics of the production function (capital intensity, elasticity of substitution between labour and capital, use of skilled labour etc.) and its relation to the institutional setting in which the staples sector has to operate. Thus, if we are to arrive at a complete understanding of why some primary exporters managed to industrialize and others not, the

formalized general equilibrium staples analysis must be combined with an investigation of how a particular institutional setting shapes the parameters of the economy. The technological characteristics of the production function provide just one example of such parameters. Path dependence created by the initial conditions prevailing during the period under investigation also looms large here, and so do political considerations. The linkage concept is simply a catch phrase which may contain a very mixed bag of interacting factors, combining to produce identical or diverse results, according to the circumstances. Thus, it is highly doubtful whether one should attempt any far-reaching generalizations on this point.

This has at least not been the intention behind the present essay. Rather, as we emphasized at the beginning, we have attempted to pinpoint some of the most important characteristics of the world economy during the 1870-1914 period in order to contrast these with the present-day situation. To these contrasts the concluding section will be devoted.

One of the main lessons of the world economic history of the past two hundred years is that the road to sustained growth goes via industrialization. The classic works of Allan Fisher (1939) and Colin Clark (1940) pointed out that increasing levels of per capita income go hand in hand with an increasing share of secondary activities in GDP. Their findings were later confirmed by Simon Kuznets (1966) and Hollis Chenery and his associates (e.g. Chenery, 1979; Chenery et al., 1986). Structural change is one of the most important features of the development process. The staples theory of growth stresses the development of linkages between the export sector and an incipient manufacturing sector. However, as should be obvious from our fifteen cases, far from all the primary exporters managed to develop a viable industrial sector. By and large, the regions of recent settlement succeeded and the rest failed.

Why was this the case? In one sense they all had the same starting point: their natural resource base. Thereafter, however, their paths diverged. On one level, this result may have been expected. Hollis Chenery (1979:34) summarizes the historical modern growth experience: 'Virtually all countries start to develop by specializing in exports based directly on their natural resources; only later do they develop exportable manufactured goods and services.' Thus, it is possible to argue that in any given time period we should expect the early starters to industrialize before the others. This is very much the position taken by Arthur Lewis (1970, 1978) who argues that a market economy had been created in Europe and North

America as a result of canals and railroads a century before modern transportation began to unite the hitherto isolated areas in the tropics. Had it not been for the two world wars and the Great Depression, 'the leading tropical countries would now [1970] be unrecognizable' (Lewis, 1970:44). They were simply not given enough time during the 1870-1914 period.

Clearly the time element was important. The per capita resource endowment of the regions of recent settlement, despite large inflows of migrants, was much higher on average than in the tropical countries, most of which had already fairly dense populations. The necessary internal market for domestic manufacturing was thus available much earlier in the temperate zone than in the tropical primary exporter countries. Real wages did not grow substantially either, in the latter, with cash crops drawing their labour supplies from the peasant sector, on very favourable terms, with Indian and Chinese migration providing a further check on upward wage pressure. Thus, it can be argued that the majority of the tropical countries did not have enough time to develop a domestic market for manufactures before World War I.

What they did manage, however, Lewis argues, was to lay the foundations of future growth: 'to give themselves railways, roads, harbours, water supplies; to build towns, schools, hospitals; to sprout a professional and trading middle class; to improve their economic, legal and political institutions, and to establish new ones,' (Lewis, 1970:44). Had it not been for the three anomalous events that took place from 1914 to 1945, this would sooner or later have born fruit:

> In the thirty years since the Second World War we have become accustomed to seeing some tropical countries growing by 2 to 3 per cent per head, thus matching European and North American performance. This took the world by surprise, and was therefore assumed to be quite new. But it was only the resumption of a phenomenon which had already begun in the 1880s, and had lasted until the outbreak of war in 1914. With that war, the tropics went into hibernation. The terms of trade moved against them in the twenties, the great depression impoverished them, and in the forties they were isolated by the Second World War. Thirty-five years of slow or zero growth is long enough for the world to forget what has happened before, and to take it for granted that nothing has happened before (Lewis, 1978:223-24).

It is, however, doubtful that the sequence envisaged by Lewis would have materialized even in the absence of the wars and the depression. There are at least two reasons for this.

The first is that some features of the 1870-1914 period were unique, and three of these features are central in the staples theory of growth. This was the case with the 'frontier'. Today, 'frontiers' exist only in mining, in the sense that the level where the mining operations have to take place tends to get deeper over time. It is much more difficult to find an agrarian frontier, with virgin land waiting to be developed. In the regions of recent settlement the latter type of frontier began to be closed already towards the end of the nineteenth century or during the first or second decades of the twentieth (O'Rourke and Williamson, 1997:Ch. 12). Today, land is no more in 'unlimited' supply.

The second unique feature was that the 1870-1914 years form part of the 'age of mass migration'. Millions of people, the vast majority of whom were unskilled, moved out of Europe, India and China to find jobs. Again, today we are in a completely different situation. Mass migration is no longer possible, other than under very special circumstances, usually some kind of disaster, and definitely not for economic reasons. Borders are open for people possessing scarce skills, not for the rest. The closing of borders is not a feature of the post World War II period either. On the contrary, this as well began during the period under investigation here. After the 1880s, up to 1930, the regions of recent settlement (including southern Brazil) were gradually shut to immigrants (O'Rourke and Williamson, 1997:Ch. 10).

The third unique feature of the 1870-1914 period is the drastic reduction of transport costs that followed such innovations as the steamship, the railroad and the building of the Suez Canal (followed by the completion of the Panama Canal in 1914). Even in the era of supersonic intercontinental flights it is difficult to think of any technological advances in the transportation area in the foreseeable future that would have such a large *economic* impact as the changes that took place in the nineteenth century.

International capital flows are a different matter. These dried up in the 1920s and 1930s, and it was not until the 1970s and 1980s that capital flows began to pick up again, from the bottom levels reached in the 1950s and 1960s, without, however, producing quite the same degree of capital market integration as during the pre World War I period (Taylor, 1996; O'Rourke and Williamson, 1997:Ch. 11). Still, this proves that the early

experience is likely to be replicated and presumably more than so in the future. On the other hand, it may be argued that without additional land and additional labour the return to increasing stocks of capital will decrease, but that amounts to limiting the attention to the three 'traditional' production factors. Today's industrial patterns build more on human capital and R&D-related activities which may both boost the return to capital.

A similar argument may be brought to bear on demand. The prime mover of growth between 1870 and 1914 was expansion at the core of the international economy, an expansion that expressed itself among other things in an increased demand for primary products produced by other regions, and there are of course no principal reasons why this could not happen again. On the other hand, the inputs demanded are likely to be different in today's setting. Most importantly, the production pattern will probably require far less raw material per unit of output. The secular upward shifts in the production functions of most manufactures have changed input-output relationships significantly.

Another limitation may come from the fact that some of the staples of the 1870-1914 period were crops that were new to the areas where they were produced. This was the case of coffee, tea, rubber, cocoa and bananas. Part of the success story consisted in matching crops and climates. This took place during an era when our knowledge of the geography of the Earth was much more incomplete than it is today, which, in turn, means that the scope for matching was much larger than at present. This does of course not mean that new crops will not be introduced both here and there, but they are hardly likely to be of the staple variety. Also, some of the staple crops were successful because they did not disturb the existing production patterns in the peasant economy but could simply be 'grafted' on to these, non-specialized, patterns. Since then, however, monocultures have spread, especially as far as export crops are concerned. Economies of scale in agricultural production are much more important today than a century ago.

The second reason why the Lewis pattern may be illusory builds on a finding by Chenery (1979:34): 'Primary specialization can also be characterized as a strategy of deferred industrialization.' Primary producers tend to industrialize and diversify their export patterns accordingly at a higher level of per capita income than resource-poor countries. 'This lag in transforming the export pattern is so common that it may be considered a typical feature of the SP [small primary-oriented country] pattern of development although it can be avoided by suitable policies' (Chenery,

1979:102-03). As long as the change does take place, the lag may be a minor problem, but there is also the possibility that under certain circumstances pursuing a pattern of primary specialization makes it difficult to switch at all.

The period from the industrial revolution to World War I can be viewed as the period when the fundamental characteristics of the present international division of labour were cemented. A new era was dawning. The industrial revolution spread. Economic tasks were divided between regions according to comparative advantage. Labour and capital moved from areas of comparatively low to areas of comparatively high returns. An industrial core was created which traded with primary producers in other parts of the world. What has taken place thereafter has only been a modification of the fundamental pattern. Resource-poor economies have been forced to opt for industrialization and some primary producers have managed as well. In the light of the experience of the last couple of decades it, however, seems as if the former have been far more successful (Auty, 1998). Natural resources as such may delay the emergence of labour-intensive manufactured exports, for some of the 'political economy' reasons discussed in Findlay and Wellisz (1993). The rents generated by the natural resource sectors divert policy-making into competition between interest groups for the spoils, whereas economies such as Hong Kong and Singapore had no alternative but to concentrate on manufactured exports from the beginning.

The question then is whether being a latecomer to the industrial table means that you have to be content with the remains from a party that is over. Hla Myint (1954-55) has suggested that staple economies run the risk of 'fossilization', i.e. they may push the specialization on primary exports beyond the point where their marginal returns begin to fall short of their marginal cost. They fail to transform (Kindleberger, 1962:Ch. 7). Seen in a historical perspective, transformation may have been easier for those countries that managed to become successful exporters relatively early during the period before World War I, because comparative advantage in industrial production is not stiffly defined by physical resource endowment. It also has a lot to do with the accumulation of knowledge and human capital, and in a situation where such advantage has not yet become 'entrenched' it is presumably easier to enter, while once the territory has been divided up, as it were, latecomers have to face stiff competition from efficient producers who have been around for some time. We then have a situation which is almost exactly the opposite of the one suggested by Alexander Gerschenkron (1952), where the more 'backward' a country is

the easier it is for it to draw on the knowledge and experience accumulated by other nations. This would explain why the regions of recent settlement made the transformation while the tropical countries had problems - and presumably would have continued to have problems even in the absence of the troublesome years 1914-45.

It is also possible that industrialization becomes more difficult as the years go by. In our own time per capita income tends to be highest at the top of the ladder of comparative advantage, i.e. when manufacturing is based on 'created' production factors that are heavily research-intensive. Simple assembly operations, on the other hand, near the lower end, characterized by intensive use of unskilled labour, have comparatively little to offer a primary producer who is trying to break the dependence of resource-based products. Markets tend to be of the low income elasticity of demand type: sluggish and stagnant, but they may be the only ones available. Moving up the ladder requires more sophisticated techniques, but R&D activities are unlikely to profitable in a situation where cheaper, differentiated, imports are available, especially for countries where the existing R&D capacity is low (Bardhan, 1993:24). Participation in international trade locks the resource-led country into a situation where the alternatives to fossilization are few and not particularly attractive. Wages tend to be higher in land-abundant countries than in countries with high man-land ratios, but this is true only for unskilled workers and would only serve to increase the capital intensity of their manufacturing sectors, not to push them on to the upper part of the ladder of comparative advantage.

Being earlier starters, notably in the sense that their higher per capita resource endowment made for a larger internal market, the regions of recent settlement developed products with higher skill requirements than the tropical countries. Over time, wage levels were pushed up and the regions of recent settlement attracted European immigrants with a better educational background, and more experience of manufacturing, than what the tropics could do, and in addition stimulated the development of the domestic educational system. This advantage is likely to have been reinforced in a cumulative fashion as industrialization had its course, and that, in turn made recurrent transformation easier. In the tropics both skill requirements and wage levels were lower, so low that European migrants were not interested, just Chinese and Indians who, being less skilled, were prepared to move at lower wage levels in the recipient countries.

Up to now we have taken a critical stance towards the optimistic hypothesis of Arthur Lewis that the tropical countries were on a promising development path but for the adverse shocks of the two world wars punctuated by the Great Depression. If we 'fast forward' to the last thirty years, however, it is possible to defend the Lewis thesis. Two of our tropical countries in South East Asia, Siam (now Thailand) and Malaya (now Malaysia), enjoyed impressive growth rates from about 1960 to the early years of the 1990s. They continued to expand traditional primary exports but also diversified their natural resource base to include new crops, such as soybeans and kenaf in the case of Thailand. More importantly, however, they both industrialized substantially, not only for the home market but also for export in labour-intensive areas such as apparel and electronic assembly.

Our two other South East Asian countries, Ceylon (now Sri Lanka) and Burma (now Myanmar), have stagnated miserably. In both cases, however, the explanation has to be sought in drastic policy failures and bitter internal ethnic and political conflict. There was no reason why Myanmar could not have followed Thailand or Sri Lanka have followed Malaysia. Hla Myint (1967) long ago pointed out the difference in success between the 'outward looking' and the 'inward looking' countries of South East Asia. The relevance of policy is brought out further in the extensive comparative study synthesized in Lal and Myint (1996). Ghana also missed the bus by her strangulation of cocoa exports through misguided policies of the marketing board.

The three Latin American tropical countries do not present a common picture. Brazil, the giant of the southern hemisphere, has had a notable and uneven but on the whole highly successful last thirty or forty years. Industrialization has been deep and pervasive despite many inefficiencies and imbalances. The unstable macroeconomic framework has undoubtedly hindered the progress of industrialization and export diversification. Costa Rica has had a high initial level of per capita income but import substitution based on the small Central American Common Market had its inherent limitations and a rapid expansion of the public sector (in combination with an unfavourable external environment) led to a crisis in the 1980s with the result that growth was held back. Colombia, finally, has suffered from chronic internal violence and instability caused by the drug trade but has still managed a fairly impressive growth performance.

Argentina wasted her early golden years as a result of the distortionary policies of the Perón era and the aftermath of macroeconomic instability. In the 1990s, however, growth has been rapid and sustained in the context of monetary and exchange rate stability. Once again, we see the importance of the right policy choices.

Among the mineral economies Chile has clearly been the biggest success, once again as a consequence of the market-oriented policies undertaken by the military regime and continued by its democratic successors. Bolivia has had spurts of growth and reform but does not seem to be on a sustained path to stability and prosperity. South Africa has suffered from the tensions of apartheid, sanctions and the transition to majority rule. The future remains uncertain, with strong pressures for redistribution towards the vast poor black majority – a redistribution which can, however, not be carried out unless the economy manages to break out of its present deadlock and raise the growth rate.

Finally, let us return to the three stories with which we started. Despite many disappointments in the performance of resource-abundant countries outside of the 'regions of recent settlement' we believe it is clear that the pessimism of the 'Marxist-Dependency' story is firmly refuted by the historical record that we have outlined. Even if growth is 'dependant' the stable growth of the 'North' has meant that the 'South', at least until recently, had the opportunity to grow as a consequence. The performance of the laggards is clearly due more to internal problems and policy failures rather than lack of opportunities in the world market. We therefore feel that the 'Liberal' framework, with a dose of interventionism, has on the whole been vindicated. International trade and factor movements were instrumental when it came to raising the rate of growth in resource-abundant economies during the late nineteenth and early twentieth century, albeit under circumstances that may have been fairly unique for the period. That some countries performed badly later is a different story. They made the wrong policy choices and either failed to industrialize or industrialized on an inefficient basis, i.e. they failed to make the transition that has been critical for making the best use of trade in the second half of the twentieth century when international exchange of goods and services has indeed been an engine of growth again – perhaps even more so than it was during the 'golden age' of 1870-1914 that has been the subject of this essay.

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