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WORKING PAPER NO. 589

LONG TERM ECONOMIC DEVELOPMENT

by

Irma Adelman

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Berkeley, California
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[The present paper analyzes the main features of long term economic performance of developed and developing countries since industrial revolution. It is divided into epochs, distinguished by the global trade and payments regime and by common general characteristics of the process of long term economic growth.]

The Industrial Revolution Period, 1820-1914

Currently Developed Countries.

Prior to the industrial revolution, sustained economic growth was virtually nonexistent. The average annual rate of growth of real per capita GNP in the current OECD countries between 1700 and 1820 was only .2%. Through the application of science to technology, the industrial revolution made sustained long term economic growth possible for the first time in economic history. The industrial revolution was brought about by a sharp increase in the price of timber at the end of the eighteenth century, which necessitated a switch in energy source. Over a period of forty years, the cluster of inventions required to enable a shift to steam-power was introduced. It revolutionized the technology of long distance transport, iron and steel production, and led to an eventual transformation of the domestic and global economy, society and institutions.

The major difference between the period of merchant capitalism up to 1820 and the era of modern economic growth starting in 1820 has been a tremendous acceleration in technical progress. The average rate of increase of labor productivity of the OECD countries for the period 1820 to 1913 was 6.65 times greater than during 1700-1820. It resulted in an average annual rate of economic growth of real per capita GNP six times higher than in the earlier period. From 1820 to 1913, per capita income in the OECD countries more than trebled; the volume of world exports grew more than thirty fold; a global economy and a global financial system were created; substantial intercontinental capital and population movements took place linking overseas territories to the European economy; and international patterns of specialization in production and trade emerged.

Institutions and institutional change were critical to the emergence and diffusion of the industrial revolution. In theory, the application of science to technology was open to all countries. But, in practice, the countries that were able to take advantage of the possibilities for long term economic growth opened up by the industrial revolution were those whose political and economic institutions were either already propitious or those who could adapt their institutions to enable modern economic growth to take place. The few countries with modern factories in 1800 and widespread industrialization by the end of the century started with institutions better equipped for technical change than the overwhelming majority of underdeveloped countries in the 1950s. They started with governments that protected private property, enforced private contracts, and acted to remove legal bottlenecks to the expansion of factor and commodity markets; and with agricultural institutions that gave cultivators reasonable incentives and provided for a wide sharing of the benefits from agricultural improvements. The institutions of modern capitalism were essential to the diffusion of the industrial revolution and to the long term economic growth which it enabled.

A liberal global economic order has always characterized eras of high growth in the world economy. The period 1820-1913 was one of very free international trade, with no quantitative restrictions and low but rising tariffs after 1870, extremely free international movements of labor and capital, and a fixed nominal exchange rate under a gold-sterling-standard. Weak labor unions and the absence of concerns about unemployment permitted changes in the real exchange rate. Similarly, the high growth era between 1950 and 1973 was one of very strong movement towards a free-trade global regime, the introduction of customs unions, a fixed dollar-based nominal exchange rate, international credit arrangements imparting some flexibility, and priority given to the maintenance of full employment, leading to expansionary policies and mild inflationary pressures. By the same token, world recessions have been associated with more inward-looking global international trade and payments regimes. The slow growth period of 1913-1950 was characterized by quantitative restrictions, tariffs and overvalued exchange rates posing substantial barriers to trade, as well as by severe controls on both capital and labor mobility. The slow growth period of 1700-1820 was characterized by beggar-thy-neighbor mercantilist

policies.

Economic policy, especially with regard to international trade, agriculture and investment, has always been important in determining growth patterns within countries. Economic policy explains differences in the pace of development among countries broadly similar in their institutional structure and resources.

In trade policy, appropriate exchange rates and tariff levels were critical; overvalued exchange rates could choke off economic growth. While nominal exchange rates were fixed, through the gold standard, real exchange rates changed over time in response to changes in domestic wages and in the domestic price level. The overall trade regime was liberal, with mostly low or no tariffs on raw material and food imports and varying degrees of industrial protection. It should be noted, however, that nowhere outside Great Britain did initial factory-based industrialization take place without some tariff protection (Bairoch, 1976). The large latecomers to the industrial revolution-- Germany, Italy, Japan and Russia--all adopted an import substitution industrialization strategy. However, the extent of tariffs varied greatly across countries and, during this period, was not systematically associated with the rate of economic growth. For example, Japan had quite low industrial tariffs throughout its industrialization period while Russia had prohibitive tariffs that sheltered it from international competition and combined with unfavorable institutions to prevent sustained industrialization. Germany industrialized with substantial tariff protection, and the periods of highest industrial expansion were also the periods of highest tariffs. Free trade in grains in Switzerland and Denmark, that exposed farmers to competition from the influx of low-priced grain imports from overseas, accelerated the shift to highly productive farming in specialized crops and mixed farming. Eventually, tariff protection had to become negligible for competitive manufacturing to develop.

Agricultural productivity played a critical role in the success of industrialization in Western Europe and Japan (Jones and Woolf, 1969). The industrial revolution in these countries was preceded by three centuries of slow but steady agricultural progress. During the preceding centuries, market-oriented farming had emerged from the disintegration of medieval farming systems; biological innovations, such as crop rotation replacing fallow, were adopted; the growth in agricultural productivity had

exceeded the growth of population, giving rise to a continuing and rising agricultural surplus over subsistence; and a market for simple standardized manufacturing goods had been created. In Great Britain, France, Germany, the United States, Canada and Japan the agricultural sector played an important role in providing raw materials, markets for industrial products, and labor and/or capital as industrialization continued. Nowhere did industrialization proceed without a highly productive agriculture combined with institutions favorable to a wide sharing of the agricultural surplus. Where these conditions did not already exist by 1820, the industrial revolution could not generate sustained economic growth unless they were created.

Policy and institution-induced differences in national investment rates have been closely associated with the rate of diffusion of the industrial revolution technology within and across countries. Among countries with broadly similar institutions, the rate and structure of investment has also been associated with intercountry differences in rates of economic growth. When domestic investment rates in the lead countries slowed down, their technological leadership diminished, and they were eventually taken over by more dynamic countries.

Since countries differed in their initial conditions and in the speed with which they could adopt the economic and political institutions of modern capitalism, the result of the industrial revolution was a substantial increase in economic differentiation among nations. The current OECD countries include five European and three overseas countries that were then underdeveloped. The lag in the spread of the industrial revolution to some OECD countries (Japan, Italy) was as long as three generations. At the eve of the industrial revolution, the ratio of the per capita income of the average most advanced country to the per capita income of the average least advanced traditional society, in 1960 US dollars adjusted for purchasing power parity differences, was 2.8 to 1. (Bairoch, 1987). By 1913, this ratio had almost quadrupled, to 10.4. By 1950, it had mushroomed to 17.9. This differentiation ultimately led to the bifurcation of the world into a set of developed industrial countries and a set of raw-material, agricultural-staple based, developing countries.

The growth of the world economy has always been fueled by the growth of a lead country that provided the engine of growth. In the commercial capitalist era,

from 1700 to 1820, Netherlands was the lead country. Its per capita income in 1700 was about 50% higher than that of its nearest rival, the United Kingdom. Great Britain became the lead country during the industrial revolution era, between 1820 and 1890. It initiated the industrial revolution, and competition with Great Britain and the diffusion of British technology gave the major impetus to the industrialization efforts of the follower countries. Since 1890, the lead country became the United States (Maddison, 1982). The lead countries were all characterized by favorable institutions, appropriate to their development strategies, good transport enhanced by revolutions in transport technologies, appropriate exchange rates, high rates of change of productivity and, except for Great Britain, high rates of domestic investment for their periods. All lead countries had highly productive agricultures, agrarian institutions favorable to responsiveness to incentives, and parliamentary political systems responsive to the interests of modernizing groups. All lead countries eventually lost their competitive edge. Overvalued exchange rates, slowdown in investment, innovation and technical change, and the emergence of greater dynamism in other economies led to a decline in their dominant position.

Governments have always taken the lead role in generating the conditions for modern economic growth in the countries that were able to achieve it. Governments set the economic policy framework in a country. During the period of the industrial revolution, the governments of the follower countries responded to the economic and political challenges of the early industrializers outside their borders by unifying their countries politically. They created the institutional framework for capitalism by removing the remaining institutional barriers to the growth of market systems. In the latecomers to the industrial revolution, government investment, government demand, and government finance also played a leading role during the early stages of industrialization. During the industrial revolution period, neoclassical models of economic growth were fully appropriate only for the class of early successful industrializers, in which parliamentary governments had seen to it earlier that institutions supporting the effective functioning of markets already existed. Political institutions, particularly those that determine which economic interests the state reflects and the degree of autonomy of the state, have therefore been critical to economic development and to the distribution of its benefits.

Population growth accelerated during the industrial revolution era, to 1%, double the rate between 1700 and 1920, but about half the current rate in developing countries. Its effects varied depending on the character of landholdings, structure of families, productivity and land abundance. Where agricultural productivity or land abundance provided a sufficiently high living standards, population growth expanded markets for manufactured goods, and imparted a positive stimulus to growth. Where land was scarce, population growth could provide a positive stimulus by stimulating agricultural improvements (Netherlands). But it could also diminish the marginal productivity of land, increase food prices, lower the capital/labor ratio, and contribute to mass poverty (Sweden). Emigration provided a vent for surplus population.

Growth since the industrial revolution has been capital and natural-resource intensive. Technological change in industry has been capital displacing and technology has been capital embodied. The technology of the industrial revolution has therefore required high rates of capital formation. Capital stock per person employed was twice as large in Great Britain in 1913 than in 1820; and, on the average, the gross nonresidential capital stock per person employed in those OECD countries for which data for both time periods exists¹ was 4.8 times higher in 1913 than in 1890. In industry, energy and material-input requirements per unit of output have risen steadily. But, since the share of services in GDP has also increased, primary energy consumption per \$1000 of real GDP has fallen².

Development is distinguished from economic growth by being accompanied by structural and institutional change. (Kuznets, 19xx). Between 1850 and 1914, employment in agriculture in the current OECD countries declined, on the average, by 23 percentage points³, from 56.8% to 34%.

There were long time lags before the industrial revolution benefitted the poor.

¹ Germany, Italy, Japan, United States and the United Kingdom.

² Maddison (1982) pg 48 estimates that energy consumption per \$1000 of GDP in 1970 prices stood at 4.63 in 1870 and at 2.38 in 1900 in the United States; the analogous figures for Great Britain were 2.55 and 2.43.

³ The average excludes Austria and Finland, and Australia for 1850. It averages the individual estimates from different sources cited in Morris and Adelman, 1988, Tables A11 and A13 for employment as a percentage of active population.

Throughout most of Europe⁴, the numbers in extreme poverty increased substantially early in the nineteenth century. Starting with the second half of the century, however, most Western European countries experienced substantial poverty reduction. Industrialization significantly reduced poverty in Belgium, France, Germany, Great Britain, and Switzerland. By contrast, in the Scandinavian countries, major emigration abroad, the expansion of high productivity specialized agriculture, and increases in small-scale industry eventually raised the living standards of the poor. But the lags were long, of the order of two to three generations. The critical forces making for eventual poverty reduction were institutions and infrastructure essential to broad based growth: market institutions and transport networks facilitating the mobility of factors across regions and sectors; tenure systems and structure of landholding inducing responsiveness to market incentives and entailing a wide sharing of the agricultural surplus; and political systems reasonably responsive to rising entrepreneurial groups. Other key influences favorable to eventual poverty reduction in Europe were increases in agricultural productivity, and emigration.

The Industrial Revolution Period in Developing Countries

The industrial revolution drastically lowered the cost of long distance transport and enabled importation into Europe of food and raw materials from overseas territories. The invention of the steamship and the introduction of refrigerated shipping, which drastically decreased the cost of bulk transport over long distances, enabled the emergence of a pattern of international division of labor and complementary international specialization in trade and production. Food and raw materials from resource-abundant countries were exchanged for, first European and then European and United States, manufactures. Geographical expansion of international trade, international migration, and capital movements into overseas territories greatly accelerated.

Long cycles in capital formation, migration and institution-building came to

⁴ There is some controversy as to whether Great Britain experienced poverty increases early in the century.

mark the economic history of land-abundant newly-settled areas in the nineteenth century. These cycles linked the rhythm of economic activity in Western Europe, the North Atlantic and the newly-settled areas of Australasia. The export of capital from Europe fueled the economic expansion of the land abundant non-European countries. By 1914, Britain's total foreign assets were 1.5 times as high as its GDP (Maddison, 1982 pg 38) and in some developing countries foreign capital (excluding investment by European settlers) accounted for as much as half of total investment. Migration to overseas territories by European settlers was a major motive force. Between 1830 and the first world war about 50 million Europeans, 30% of Europe's population in 1830, had emigrated to the Americas. By 1914, one eleventh of the world's total population consisted of Europeans living outside Europe. (Thomas 1973, p 244). These settlers brought with them financial capital, technological know-how, political and institutional cultures, and skills.

European trade, investment, and settlement led to a phenomenal expansion of food and raw material exports to Europe. The average rate of growth of real exports of land abundant countries was about 6% per year between 1850 and 1913, about twice that of the OECD countries between 1870 and 1913. But only in some of the non-European societies did export-led growth result, and only in some of those did the export-led growth lead to more general domestic expansion.

As with developed countries, the critical differentiator between those land-abundant countries that eventually developed and those that did not was institutional. Land abundant countries that could evolve the economic and political institutions of modern capitalism (Canada, Australia) eventually became OECD countries. Others (Argentina, Brazil) became semi-industrial countries in the 1960s. Those that could not, remain developing countries today. The speed of economic growth in land-abundant overseas countries depended on the extent of development of market systems, nature of land tenure conditions, and the functioning of (foreign-dominated) institutions that provided capital, labor and entrepreneurship. The extent of diffusion of growth depended on the strength of domestic relative to foreign interests and institutions, the class structure of political power, the distribution of land holdings, and on the government's economic policies. Institutions were major determinants of both the pace and structure of economic growth. Domestic

institutional change was the most potent dynamic factor determining the internal diffusion of growth and its benefits.

The institutions conducive to economic growth were neither immutable nor unique. They varied with development level; institutions appropriate for the initiation of economic growth often were not conducive to its continuation. For example, the early stages of growth in agrarian economies required large scale commercial export-oriented farming; the subsequent diffusion of industrialization required the establishment of a farming system consisting of medium scale, owner-operated farms producing food for the domestic market. The institutions conducive to economic growth varied with development strategy; institutions appropriate for import substitution were inappropriate for export-led growth. Temporary substitutes for missing institutions (such as domestic capital markets, factor mobility, or national domestic commodity markets) could and were found; they were provided by domestic governments, by foreign institutions and by international factor and commodity flows. But, unless the missing domestic institutions could eventually be developed, their absence eventually led to economic stagnation. Institutional flexibility and adaptability were therefore key to the continued long term growth of developing countries, both the OECD follower countries and the overseas territories.

Natural resource abundance was a key differentiator among developing countries. In particular, the rate of economic progress in land-scarce, densely populated, low-agricultural-productivity countries (Burma, India, China, Egypt) was slow, mass rural poverty prevented significant development of a domestic market, the forces accelerating exports and average income growth had a negative impact on agricultural wages, and faster population growth reduced the amount of land per person. By contrast, in land-abundant overseas territories the growth of exports and was rapid, the rate of increase of real per capita GNP was about equal to that of the current OECD countries during that period, and there was some eventual industrialization. Where, as in Australia and New Zealand, small farmers, domestic manufacturers and labor eventually gained political power, the impetus from export expansion also led to positive spread effects to the domestic economy. In land abundant economies in which landed elites continued to be strong (Argentina and Brazil) development was dualistic and had minimal effects on domestic

industrialization.

Economic policies mattered, especially with respect to international trade, international factor movements, agriculture and the structure of investment. In primary exporting countries, export expansion was a major variable accounting for variations in economic growth. Where industrialization was important, it was also associated with export expansion. Policies, investment patterns, and institutions hindering export expansion therefore led to a slowdown in economic growth. But the domestic carryover from export expansion varied greatly. Its extent depended heavily on the institutions that determined land tenure, the degree of foreign dependence, the political power structure, and on government policies with respect to education, transportation and tariffs. The benefits from the expansion of exports were most limited where foreigners owned most industry, provided most commercial services, and dominated government economic policy. The domestic carryover from export expansion was greatest where domestic manufacturers, small farmers and labor gained political power.

Policies favoring export expansion did not, however, imply free trade. In overseas land-abundant countries, tariffs helped the late and modest expansion of industry for the domestic market. Free trade policies of colonial governments in densely settled Asian countries, such as India, Egypt and Burma, destroyed indigenous industry and contributed to increasing poverty. Developing countries that could not establish a certain degree of protection for their initial industrialization efforts did not develop even a modest industrial base.

Agricultural policies and institutions were critical. Where progress in the productivity of agriculture for the domestic market was slow, this impeded the spread of the impetus from primary exports to the domestic economy. In Argentina and New Zealand, the slow growth of agriculture for the domestic market constrained industrial development for several decades during the last half of the nineteenth century because purchases of industrial goods by the agricultural sector were very limited and the food supply expanded slowly. Low agricultural productivity in densely populated agricultural countries (Burma, China, Egypt, and India) choked off industrial development almost entirely. Wherever stagnant food agriculture was combined with expansion of export agriculture, overall economic growth was very

dualistic in nature.

The structure and activities of the state mattered. The state set tariffs, determined immigration policy, and chose the structure of investment in education and infrastructure. It also played a key role in establishing market institutions, and land tenure patterns. Wherever the political power of landed elites continued strong, development was dualistic. Luxury goods were important in imports and production; food was supplied by low-productivity tenant farmers; the domestic market was small; and industrialization was very limited. Wherever foreigners were dominant politically, such as in Argentina, Burma, Egypt, and India, parliamentary systems representing indigenous modernizing interests did not develop. Changes in the structure of production were determined largely by expanding foreign trade and the expansion of primary exports tended to dominate domestic growth. The rules of the economic game were determined largely by expatriates, who dominated trade and banking, and provided most of the technical expertise and finance of domestic investment. Expatriates saw to it that many institutional restrictions on the development of factor markets, especially land markets, were eliminated in the interest of export expansion. As a result, landownership became more concentrated. Immigration policies were unrestricted, so that domestic wages rose, at best, quite slowly. Growth was limited to an export-enclave which did not, on the average, lead to systematic growth in per capita incomes. From the point of economic development, the worst combination was a political alliance between foreigners and domestic landed elites; the best situation arose when domestic urban interests and small farmers attained political power.

Government investment patterns, especially in inland transport and education, had a critical impact on the diffusion of economic growth. Where the structure of investment in transportation gave priority to linking the countryside to major population centers, it was likely to promote the development of food agriculture, particularly if land tenure, human resources, and political institutions were favorable. The spread of literacy was consistently associated with improvements in agricultural productivity, though it is not clear how literacy contributed to this effect. In land abundant countries, countries that had attained 50% literacy rates by 1850 also made strongly above average agricultural progress. By contrast, in overwhelmingly

agricultural, mainly subsistence economies, such as Burma, Egypt, India and China, literacy had no positive effects on agriculture and was negatively correlated with commercialization.

In the non-European developing countries other than Japan, this was a period of quite limited structural change. The structure of production was mostly dominated by the primary export sector. In some of these countries⁵, rapid industrialization starting from a very narrow base took place after 1870. However, for the average non-European land-abundant developing country⁶, agriculture still accounted for 37% of total employment by 1913, with Australia, the least agricultural, accounting for about 27%. This average was about the same as that for Holland in 1700 or the United Kingdom in 1820.⁷ None of these countries attained more than modest degrees of late industrialization centered on the domestic processing of exports: wool and meat in Australia, Argentina and New Zealand; wheat in Argentina, and later Canada; dairy products in New Zealand; and coffee in Brazil. Production of intermediate goods was limited to tools for export production and consumer goods were produced locally, with power spinning of cotton not predominating over hand spinning⁸ and cotton weaving generally done by hand. The land scarce, low agricultural productivity countries attained very little modern industrial growth, with, at best, a few factories using inanimate, low-horsepower in one or two sectors.

The benefits from growth were distributed unequally within developing countries and the growth of exports and average incomes did little for reductions in poverty, except where appropriate institutions, especially land tenure and labor, eventually emerged as political power shifted away from export interests and large landowners. In the land abundant countries settled by Europeans, and dominated by

⁵ Australia, Brazil, Canada, Japan and New Zealand.

⁶The average includes Argentina, Australia, Brazil, Canada, and New Zealand. The sources for the estimates are given in Morris and Adelman 1988, Table A13.

⁷ Maddison, 1982, pg 35. The primary sources for the estimates are presented there.

⁸ Australia after 1870 and Canada and Japan after 1890 are exceptions to this statement.

export interests,⁹ poverty was cyclical. The extent of poverty followed long swings in the demand for staples, waves in immigration, and cycles in the international terms of trade. The worst poverty in this group occurred in urban areas, when waves of immigration coincided with a downturn in the demand for staples. Large landholdings were predominant¹⁰ and large landowners dominated the political process throughout most of the nineteenth century. Where independent family farming systems spread, as in Canada and Australia at the end of the century, poverty was eventually reduced as a domestic market for the growth of small industry emerged. In the densely settled low-productivity overwhelmingly agricultural economies¹¹ there was no marked change in the massive proportion of population in extreme poverty over the century. Extreme poverty was associated with inadequate land, primitive agricultural technology, and decline in supplementary employment. Landholdings and tenure systems were unfavorable to improvements in agricultural productivity, and transport systems were poor. Uneven commercialization and indebtedness, due partially to recurrent income crises arising from harvest failures as dependence on markets for both food and income increased, led to loss of land and extreme poverty among cultivators.

Wars and Cycles, 1913-1950

This period included two world wars, a strong cyclical upswing in the nineteenthcenties, and the Great Depression. Averages are therefore more than usually suspect. On the average over the period, in the average OECD country the growth momentum of the previous period seems to have been reduced somewhat: the rate of growth of real GDP per capita dropped by 15% compared to 1870-1913; the rate of growth of the capital stock and of population both dropped to 60% of their previous average; nevertheless, productivity growth continued at a somewhat higher rate than during the industrial revolution.

⁹ The countries in this group are Canada, Australia, New Zealand and Argentina.

¹⁰ The exception to this statement is Canada.

¹¹ These countries include Burma, China, Egypt, India and Russia.

The most glaring difference between this and the industrial revolution period was not in average growth rates. Rather, it was in much greater economic instability, leading to severe curtailment of transmission mechanisms for the generalization of growth to other countries. The global payments and trade regime became restrictive, both due to the two wars and the major depression. High tariffs and strong quantitative restrictions were introduced. There were severe constraints to capital and labor mobility. Currencies were generally overvalued. There was a period of collapse of the international payments regime, followed by galloping inflation in some countries, and leading to extreme policy concern with price and exchange rate stability at the cost of high unemployment rates till the start of the second world war. The rate of growth of real exports fell to 1.5%, one fourth of its average during the previous period.

For developing countries, total GDP continued to expand at about the same average rate as it had during the industrial revolution era. (2%). But population growth accelerated steadily, so that the rate of growth of GDP per capita fell from 1.2% between 1900 and 1913, to .9% between 1913 and 1929, and to .6% between 1929 and 1952-54.¹², averaging .8% over 1913-50. ¹³ Much of this growth was due to increases in output of extractive industries, whose real product grew 5.5 times¹⁴ during this period. The extractive industries were foreign owned and managed, and generated almost no domestic spread effects except through wages. There was some industrialization: output in manufacturing increased almost twice as fast as GNP between 1938 and 1950 ¹⁵. Structural change in employment proceeded slowly, however--the share of manufacturing employment¹⁶ actually declined somewhat¹⁷,

¹² P. Bairoch The Economic Development of the Third World Since 1900 (London: Methuen) 1975 pg 184.

¹³ Morawetz, pg 14.

¹⁴ Bairoch, op cit, pg 59.

¹⁵ The average rate of growth in developing countries was 3.5% between 1938-1950. Bairoch, op cit pg 65.

¹⁶ excluding construction

the share of employment in primary fell (from 77.7 in 1913 to 73.9 in 1950), and the share of employment in services rose (from 12.2% to 16.7%). There was little new institutional development, except in support of the export sector. Exports of developing countries rose significantly (in current dollars, the value of developing country exports rose fivefold, and their share of world exports increased from 19% to 31%¹⁸) but so did their imports. Nevertheless, their balance of trade was generally positive (by 8% of imports in 1950). The exports of developing countries consisted virtually entirely of primary products and the growth they generated was dualistic, with limited spread effects and limited institutional carryover, except for institutions required to promote exports.

The Golden Era of Economic Development, 1950-1973

Developed Countries

This was an era of unprecedented sustained economic growth in both developed and developing countries. World War two had generated a period of pent-up demand and had destroyed capital and infrastructure in Europe and Japan. The institutional framework of capitalism, which had been temporarily abrogated by the command economies of the second world war, was restored quickly. The Marshall Plan helped rebuild the capital stock, and generated an investment boom in Europe. Recovery from the devastation of the war was quick.

From 1950 on, progress in the OECD countries proceeded at a breakneck speed by historical standards. The compounded annual rate of growth of real per capita GDP in the OECD countries¹⁹ escalated to approximately 2.6 times (4.9% annually as compared to 1.9%) that of the interwar period, and became almost precisely double the previous peak growth rate of the industrial revolution period. Productivity growth in the OECD countries was more than triple (3.75 times) that of the

¹⁷ by about one percentage point or about 11 % over the period 1913-1950.

¹⁸ Bairoch, op cit, pg 93. Based partly on UN Yearbook of International Trade Statistics.

¹⁹ The numbers cited in this paragraph refer to all OECD countries taken together. They exclude Greece, Iceland, Portugal Spain and Turkey.

industrial revolution era. Investment rates were high, rising from single digit prior to 1950 to double digit percentages to GDP, and, for all OECD countries taken together, the rate of growth of the capital stock more than tripled compared to the interwar period (5.5 % annually as compared to 1.7%); labor force growth remained low (about 1% annually), and the rate of increase of hours worked tripled (to .3% annually). The average stock of formal education rose, from 8.2 years per person in 1950 to 9.6 years in 1973, at an annual growth rate of about .7% per working age population ²⁰. The amplitude of business cycles was small, both absolutely and by historical standards. The volume of exports grew by 8.6%, almost nine times as fast as between 1914 and 1950, more than twice (2.15 times) the previous peak rate, and about 50% faster than real GDP. Denison estimates that, between 1950-62, the contribution of trade-barrier removal to economic growth was about .15 percentage points, while Maddison estimates that it was about twice as high²¹ The international economic order was liberal, with low non-agricultural tariffs and few quantitative restrictions in the OECD countries, and with a fixed but flexible exchange rate and a flexible international currency supply for most of the period, permitting smooth functioning of international commodity and capital markets. Institutions for international regional economic integration were formed.

Since, by 1950, the institutions for capitalist growth and their malleability had been firmly established in the OECD countries, this unprecedentedly rapid economic expansion was based on conventional economic forces: fast productivity growth, supported by a new routinization of the innovation process through commercial R&D, especially in the United States; rapid capital accumulation and well functioning capital markets, permitting capital-embodied productivity growth, structural change and continual reallocation of capital and labor to more productive uses; stable and fast growing demand, permitting high rates of resource utilization; employment and labor force increases but only at almost a sixth (18%) of the rate of growth of the capital stock and at slightly more than a fifth (22%) of the rate of growth of

²⁰ Based on OECD sources, as cited in Maddison, 1982, pg 112.

²¹ Denison Why Growth Rates Differ Brookings 1967 and Maddison "Explaining Economic Growth" Banca Nazionale del Lavoro Sept 1972, pp 37-49.

productivity, permitting continuing increases in capital per employee and wage increases without inflation; high rates of growth of human capital, permitting growth in productivity; high rates of structural change, permitting continuing good resource allocation; and cheap energy and raw material prices, permitting, together with the growth of productivity, the combination of high growth with low inflation rates. Governments became committed to demand management policies aimed primarily at maintaining high employment. There was relative peace. The result was a stable, mildly expansionary, national and global policy framework. Never before had there been such a (fortuitous?) concatenation of favorable economic and institutional circumstances.

Developing Countries

The impetus from this unprecedented growth in the OECD countries was transmitted to developing countries as well. The very rapid growth in world trade was the primary transmission mechanism and exports the primary engine of growth. But capital flows in the form of aid, foreign investment and loans helped as well. By historical standards, the growth rate of developing countries was nothing short of breathtaking. The average rate of growth of real per capita GNP for all developing countries rose to 3.3%²², more than triple (3.3 times) the rate of growth of the early industrializers between 1820 and 1914. While this growth rate of per capita income was well below that of developed countries, the major difference was in rates of growth of population. The rates of growth of total GNP were almost the same as in developed countries (5.5 as compared to 5.9% per year).

As during the industrial revolution era in the OECD countries, it is those developing countries with more developed economic and political institutions in 1950 that were the major beneficiaries from the strong growth-impetus originating in developed countries. During this period, the developing countries with the highest

²² This figure is an unweighted average, based on Morawetz, 1977 and is for 1950-1975, with per capita incomes in 1974 U.S dollars converted at official exchange rates. It needs to be recalculated for 1950-73. It includes the oil countries.

rates of institutional development²³ had an average rate of growth of per capita GNP of 3.3 %; the average growth rate of the non-oil countries at intermediate levels of socio-institutional development was 2.2%; and the average rate of growth of the non-oil countries at the lowest level of development was only 1.5. Furthermore, by 1973, in the group of countries with the highest level of institutional development, the overwhelming majority had become semi-industrial countries, and four countries that had been developing in 1950 (Israel, Japan, South Korea, and Taiwan) had joined the group of developed nations. By contrast, no country at a lower level of institutional and socio-economic development attained the status of semi-industrial country by 1973. Some countries at lower levels of socio-institutional development experienced high rates of growth of per capita GNP. But their economic growth was almost entirely oil and resource based, was not self sustaining, fluctuated with external terms of trade, and, except arguably for Iran, did not spread significantly to the rest of the economy, and did not result in much social and institutional development. Thus, as in earlier periods, institutional readiness was critical to economic development.

The developing countries in the institutionally most developed group were still heterogeneous in their institutional features, and, by 1960, had not attained the degrees of institutional development of the early industrializers by 1820. In institutional development, they were somewhere in between the late European industrializers and the firstcomers to the industrial revolution in 1820. In 1960, the representative developing country in this group had well developed market institutions, with functioning land markets, labor markets and more developed capital markets than in countries at lower levels of development, though agricultural credit institutions and equity markets were still limited; the overwhelming majority of the population of all of these countries was significantly involved in the market economy; the very marked socio-economic dualism typical of countries at earlier phases of socio-institutional development had, for the most part disappeared, and the

²³ The numbers in this sentence were computed by using the classification by level of socio economic development computed in Adelman and Morris 1967, pg 170 and the growth rates between 1950 and 1975 given in Morawetz pg 19-21. The oil countries were excluded from the lower levels of development in this comparison.

significant disequilibria among different aspects of socio-institutional development characteristic of earlier phases of development had been greatly reduced. Land tenure was heterogenous, with a significant portion of land farmed by economically viable, owner-operated farms, but also significant subsistence farming, and, in some countries, a predominance of large, absentee-owned commercial farms and plantations; the cultural and national integration of the population had proceeded quite far, though somewhat attenuated ethnic and religious cleavages continued to persist in some countries. The political hegemony of the traditional agrarian land-owning elite had been significantly weakened or even destroyed. An expanding, literate, urban middle class consisting of businessmen, industrialists, modern sector employees, and upper echelon bureaucrats, including more than 20% of the active male population, had come to share in political power in almost all countries in this group. The political institutions in this group of countries were, on the whole, more effective and stable than in countries at lower levels of development, despite a tendency towards praetorianism.²⁴ Some, but by no means all, countries in this group had two or more political parties operating for most of the period and some had broadly based parliamentary institutions in which political parties effectively articulate economic and ideological interests. Governments in this group had attained a degree of autonomy, with some form of permanent civil service, and, effective leadership commitment to development in about a third of these countries. Marked social stratification still persisted, but, under the impact of urbanization, westernization, and school enrollment ratios close to 50% in 1960, prohibitive sociocultural impediments to mobility had been much reduced despite persisting religious and ethnic differences. There were no unique institutional prerequisites, but, on the average, a significantly higher level of institutional development, more institutional concordance among different aspects of socio-institutional development and greater institutional malleability characterized the major beneficiaries from the growth impetus emanating from the unprecedentedly rapid expansion of the OECD countries.

²⁴ See Huntington and Nelson for a discussion of praetorianism in Latin America and Adelman and Morris 1973 for an analysis of political participation in developing countries.

Once certain levels of socio-economic and institutional development were attained, economic policies, especially trade policies, mattered greatly. All developing countries pursued import-substitution policies in the fifties; most continued to pursue import-substitution policies throughout the period, shifting, towards the mid-to late sixties, from import substitution in labor-intensive consumer goods to import-substitution in intermediates and machinery, as domestic markets for wage goods were exhausted. A handful of successful industrializers, mostly East Asian, but including Brazil and ? ___towards the end of the period, shifted, in the early to mid-sixties, to export-led growth in labor intensive products instead of proceeding to the second phase of import substitution . The countries that did, had the most successful development experience. Where agricultural systems consisted of small or medium-size commercial, owner-operated, high-productivity farms, and primary education was universal and secondary education widespread, the shift to export-led growth combined high growth with non-deteriorating income distributions.

Since, by 1960, about two thirds of developing countries had not attained levels of socio-institutional readiness sufficient for self-sustained development, and since among countries that had, policy regimes were not uniformly propitious, differentiation among developing countries as a group, and between developing and developed countries continued to increase. While in 1950 the ratio of the per capita income of the ten richest industrialized countries to the ten poorest countries stood at 47.6 (at official exchange rates) this ratio had become 71 ²⁵ by 1975. The Gini coefficients among average per capita national incomes (in Kravis dollars) within each group of developing countries also rose dramatically over the same period: from .0096 to .113 in the group of low-income countries and from .273 to .311 in all middle-income countries (or from .264 to .294 in middle-income non-oil countries).²⁶

Development was marked by substantial structural change in the economy. The typical process of structural change, described by Chenery and Syrquin (1975) based

²⁵ Computed from Morawetz. It should be recomputed in Kravis dollars.

²⁶ Summers, R., I.B. Kravis, and A.Heston " Inequality among Nations: 1950 and 1975" in P. Bairoch and M. Levy-Leboyer eds Disparities in Economic Development since the Industrial Revolution (London: Macmillan 1981) pp 18-28.

on a combination of cross-country and time series regressions fitted to data for this period, proceeded as follows²⁷. In the average developing country with a population of 10 million, the earliest phases of development, occurring at per capita incomes of about \$200 in 1964 prices, involved a significant rise in total, mostly primary, exports accompanied by a substantial increase in investment in human and physical capital (in that order). A gradual shift in export structure towards manufacturing and a sharp drop in the share of primary production in total output also began in the early phases of structural change. Next, as per capita incomes increase, came shifts in the composition of consumption, from food to non-food, which generated an expansion in demand for manufactured consumer goods. The share of manufacturing in total domestic output rose as a result, reaching the midpoint of its eventual value at a per capita income of \$300. After that income, value added in manufacturing started to exceed value added in primary activities. The structure of exports changed more slowly. Manufacturing exports become gradually more important; they overtook service exports in value at a per capita income of about \$300. But, in the process typical of the average developing country in this period, they came to equal primary exports only at a per capita income of \$1000. In the typical developing country, the shift of labor out of agriculture lagged significantly behind the transformation in production structure, so that the productivity gap between agriculture and industry increased. Partly as a result of the ensuing dualistic structure of growth, the distribution of income, which started deteriorating as soon as development began, became increasingly unequal. The regression analysis indicates that inequality reached its peak at per capita income of \$500, though other estimates of the turning point for inequality suggest that the precise location of the peak is sensitive to the sample of countries included and the inequality curve tends to be very flat in the middle ranges. The economic structure of the average non-oil developing country starts resembling that of a developed country in most respects, when its per capita income reaches \$800. At this point, industrial output rises to about three times primary output; relative productivities in manufacturing and primary almost converge; employment in industry becomes about the same as primary employment

²⁷ This and the next paragraph are based on Chenery-Syrquin 1975.

and about three quarters of that in services; and, for the typical country, the distribution of income, while still more unequal than before development started, was on its way to recovery.

The demographic transition started earlier than the economic transition, with death rates falling significantly from the very beginning of the development process and reaching the midpoint of their fall at per capita incomes of \$150. Birth rates decline systematically with development, education and urbanization. But, in the typical process, they declined more slowly, reaching the midpoint of their eventual value only at incomes of about \$350. As a result, a population explosion marked the earlier phases of the development process of a typical developing countries during this period. The gap between birth rates and death rates was largest at a per capita income of \$100, but it continued to exceed 2% till per capita incomes of \$450 were attained, and did not equal that in developed countries till after per capita incomes in excess of \$1000. Urbanization reached the midpoint of its transition at a per capita income of 250, and rural-urban migration proceeded rapidly, with about half the population becoming urban at per capita incomes of \$350. School enrollment ratios attained 50% quite early, at a per capita income of \$150, and 75% at a per capita income of \$550. On the whole, the characteristics of the demographic transition made development more difficult: a population explosion accompanied the early and middle phases of the development process, urbanization proceeded in advance of modern job creation in most developing countries, and education raised status and living style expectations before the economy could deliver on these expectations. Young, educated unemployment, of as much as 20% in some countries, became a common, and persistent, feature of the urban landscape. The middle phases of the development process were therefore marked by significant social and political tensions, fueled by the unevenness of the development process, educated unemployment, and by increases in inequality.

The inability of the rapid growth of modern industry to absorb the new additions to the urban labor force was aggravated by the capital intensity of the development process. Development in this period was capital and resource intensive. Marginal capital-output ratios have been high, especially in the poorest countries,

where infrastructure investment has dominated most investment....²⁸. Chenery, Robinson and Syrquin (1986) estimate that, during this period, 70 percent of the growth of total GNP in the average semi industrial developing country came from increases in factor supplies and that capital accumulation accounted for 60 of the contribution of factor growth to GDP. Innovations, structural change, and international trade accounted for only 30% of the growth of total factor productivity, with resource reallocation from low-to high-productivity sectors associated with structural change accounting for about 15%. In manufacturing, technology has been imported, has been capital embodied, and has fitted the pattern of innovations in developed countries. Endogenous technological innovation has played a very small role in the overwhelming majority of developing countries during this period, even in the industrial sectors of the miracle-growth developing countries.

Agricultural development was neglected in most developing countries during this period. Developing countries were bent on industrializing, and cheap cereal and feed imports (largely from developed countries) provided substitutes for the expansion of domestic grain food-agriculture. The Green Revolution technology became available for adoption towards the middle of the period and was disseminated to some medium-to-large commercial farmers in some regions of some developing countries.

However, on the average, productivity growth in food-agriculture was slow prior to 1973. Incentives to farmers were minimal. Agricultural terms of trade were kept low in most developing countries, to provide low-priced food for the cities and enable the maintenance of low wages in manufacturing. Export agriculture was "taxed" through parastatals paying below world-market prices with the aim (not generally realized) of financing industrialization. Public investment in agricultural infrastructure was generally below 15% of total investment, and tended to favor large commercial farms and export agriculture. Despite rapid economic growth, poverty in developing countries continued to be massive. The forces responsible for the continuation of massive poverty were a combination of: lack of attention to rural development, capital-intensity of growth, urban bias in the provision of education and social

²⁸ Insert computations of marginal capital-output ratios by income level and compare them with those of the OECD countries.

services, rapid population growth, institutions biased against the poor, and deteriorating income distribution in the early to middle phases of development.

Crisis, Slow Growth in the OECD countries, and Debt-Led Growth in Developing Countries, 1973-1981

Clouds were brewing in the horizon towards the end of the period of accelerated growth in the OECD countries. The Bretton Woods international monetary system became increasingly inadequate to the liquidity needs of the world economy and, when it broke down, the stable, fixed exchange rate system was replaced with a fluctuating exchange rate regime. There was an effective devaluation of currencies against the dollar, contributing to inflationary pressures in Europe and Japan. The climate of wage bargaining, that had been rather mild, was replaced by wage settlements that were starting to outrun the now slower increases in productivity. Productivity growth slowed down, as the gap between actual technology and best practice technology narrowed in most of the OECD countries, and as structural change towards the service economy²⁹ was taking place. Population growth was slowing down and the population was aging. These long run fundamentals combined with a series of bunched short-term price shocks: a strong cyclical upturn in 1972-73, leading to an increase in the world price of manufactured goods; a doubling in the price of cereals in 1973; a tripling in oil prices in 1974; and a doubling in the price of gold between 1971 and 1973. Strong upward pressures on commodity prices and strong inflationary expectations were the result. Balance of payments constraints became binding. Governments made containment of inflation their major policy goal, moderated their countercyclical budgetary policies, adopted cautious macroeconomic policies and a stance of fiscal restraint. In the late seventies, the primary thrust of economic policy in the OECD countries was aimed at braking the inflationary momentum and restoring balance of payments equilibrium.

The result was a drastic slow-down in growth rates in the OECD countries, to about one fourth of the previous per capita annual real rate on the average. GNP per

²⁹ The measured rate of productivity growth in the service sector, while greatly understated by accounting conventions, is about half of that in manufacturing.

capita in constant prices rose at a rate of only about ____ for all OECD countries taken together. The growth in real world trade fell ____, but relatively less than GNP. Non-oil imports of developed countries grew by _____. Inflation rates became double digit, rising from ____ to _____. Government deficits were reduced or eliminated (Please check), and balance of payments considerations became important.

Developing countries responded to the change in the world environment by an unwillingness to accept the drastic decline in their development momentum implied by this change. Faced with severe balance of payments pressures stemming from the drastic increase in oil prices combined with lower rates of growth of export demand for their products and with generally declining terms of trade³⁰, the non-oil exporting developing countries borrowed heavily so as to maintain their growth rates. Banks in developed countries, especially the United States, were willing lenders since they were attracting an influx of petro-dollars on which they had to pay high interest rates and the slowdown in domestic growth rates in the OECD countries did not generate sufficient low-risk lending opportunities at these rates. Loans to developing countries seemed a safe bet, since no developing countries had defaulted on its foreign debts since the second world war and the number of reschedulings had been small. The result was a massive buildup of foreign debt, and growth rates of per capita GNP that, for the average non-oil developing country, were ____ percentage points above that of developed countries. Between 1973 and 1982 the foreign debt of developing countries escalated. For the average non-oil developing country, foreign debt increased by a factor of ____, to ____ of GDP, and ____ of exports. In the heavily indebted countries, the debt service ratios became ____ of exports, and were mounting at clearly unsustainable rates.

At the same time, growth and industrialization continued to proceed and, while performance was mixed, there was some favorable structural change taking place in the average developing country. Developing countries started penetrating the export markets of developed countries despite increasing protection. Some of the growth impetus for developing countries started to come from other developing countries, especially the oil-exporters: South-South trade increased (to ____% of developing

³⁰ The group of low-income Asian countries is an exception.

country exports), and so did migration to oil-countries and remittances from them. In some labor-exporting developing countries, worker-remittances accounted for as much as half of total export revenues. Agriculture received new policy attention, largely as a result of the food crisis in 1973-4, when the world price of wheat and rice trebled and the price of fertilizer quintupled. The previously accomplished technological breakthrough of the Green Revolution provided a technology to be disseminated to non-tropical agricultural zones. Investment in agricultural infrastructure, extension, agricultural research expanded and so did international lending for rural development. Agricultural marketing institutions and agricultural terms of trade policies received some policy attention. As a result, the rate of increase in food production in developing countries started exceeding that in developed countries. But the least developed countries were increasingly left behind. The manufacturing exports to developed countries came from only a handful of semi-industrial countries. And, with a few notable exceptions, in the great majority of developing countries, overall policy reform was rather limited during this period, despite mounting pressures from international lenders.

Debt Crisis, Structural Adjustment, and Reform, 1982-1990.

The debt crisis was brought to a head by the inability of Brazil to meet its debt service obligations. As a result, banks in developed countries became unwilling to extend further loans to all developing countries. Out of necessity, priorities in developing countries shifted from economic growth to achieving external balance. Adjustment patterns varied. Some developing countries adopted restrictive import regimes, deflationary government expenditure and macroeconomic policies, and restrictive wage policies. Others, attempted to export their way out of the crisis. They shifted to export-promotion, devalued to promote expenditure switching, and curtailed their growth rates only very temporarily. The latter adjustment pattern was considerably more successful. Most developing countries, however, adopted combinations of these policies, and shifted among policy regimes. Rampant inflations, capital flight, low investment rates, drastic declines in living standards and substantial increases in urban and rural poverty have marked this period in some countries, especially Latin American and African ones. About a third (please check)

of the countries achieved a current balance surplus sufficient to service their debts with little extra borrowing. Over all developing countries, there has been a net export of capital to the developed world during the last few years. For most countries, the adjustment cost has been quite substantial. The average Latin American country has transferred as much as __% of its GDP abroad annually, for debt service. The least developed countries, that benefitted least from previous expansionary regimes, have also been the hardest hit in the 1990s.

While the growth performance of most developing countries during this period has been poor, the East Asian and South Asian countries have continued, if not improved, their previous developmental performance. Poverty in some of these countries has diminished substantially (China, India and Indonesia) and a few (Thailand and Indonesia) even look as though they may join the rank of semi-industrial countries. Perhaps most importantly, this period has also been an era of significant institutional adjustment and policy reform in most developing countries. Many Latin American countries have adopted at least some features of open-trade regimes, and market institutions, in African countries, in particular, but also elsewhere, have generally been strengthened. All developing country governments have become convinced of the priority of good economic policy, though they may or may not adopt it.

Conclusion

The major driving force for the growth of developing countries has been exports. But whether exports resulted in development and whether the benefits of development became widespread has depended on the country's economic institutions and political structure. The countries with more developed market institutions and with political systems that were more responsive to the interests of modernizing elites developed, while the growth of the other countries remained cyclical and narrow based.

Development has always been associated with greater inequality among nations, as those countries that were institutionally ready for development were the first to profit from the impetus imparted by exports and those that were not were left behind. Within countries, the early and middle stages of the transition to developed

state greatly increased inequality as individuals that had the financial, real, and personal resources to benefit from the opportunities opened up by economic expansion became richer while those with few or inappropriate resource endowments were either displaced or left behind by progress. In a few countries with exceptionally favorable initial distributions of endowments, with well developed institutions, and with policies leading to rapid labor-intensive growth, development was egalitarian almost from the very start. In others, whether the eventual decrease in inequality occurs at late stages of development is a matter of policy and institutional choice. The critical policy choices relate to educational policies, the labor-intensity of growth, agricultural tenurial institutions, agricultural productivity, and agricultural terms of trade.

Policies, particularly with respect to international trade and agriculture, mattered greatly to economic development. Countries that were unable to adopt infant-industry protection policies in the early stages of their industrialization could not get a start. By the same token, countries that failed to switch from import-substitution to outward-oriented policies once the first phase of import substitution was completed grew more slowly and weathered the shocks of the seventies and eighties with greater difficulty. But, experience indicates that, to be successful, the promotion of outward-oriented policies must be accompanied not only by changes in commercial policy but also by institutional reform--the dismantling of unfavorable institutions and the liberalization of factor and commodity markets.

Progressive agriculture was essential to sustained industrialization and to broad-based development historically. No countries became developed and few countries attained the semi-industrial state without at least moderately productive agricultures, and at least moderate increases in the productivity of food agriculture. The overwhelming majority of semi-industrial countries had a significant, economically viable, surplus producing, family-farming system, though this system could be combined with large commercial farms providing most of the food for cities, on the one hand, and substantial subsistence farming on the other.

Finally, investment patterns, particularly in education, agricultural infrastructure, and transport, especially internal transport, were critical in enabling broad-based development. In their absence, growth was narrow based.

The development process is complex and successful development policy requires complementary, coordinated, institutional reform, investment and price policies, and trade strategies. Piecemeal change is less effective than coordinated change. Policy change without institutional reform can have perverse long run effects, especially if existing institutions do not provide for broad-based economic growth with a relatively widespread sharing of benefits from growth.

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