PART III

The strategy of failure: late twentieth-century deindustrialization and the economics of retrogression

5. Natural resources, industrialization and fluctuating standards of living in Peru, 1950–97: a case study of activity-specific economic growth*

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Peru's recent economic policy, like that of most Latin American countries,[1] has followed the so-called Washington Consensus. This set of policies precludes the implementation of strategic industrial policies or any active, deliberate construction of competitive advantages by promoting particular sectors or economic activities. In the Washington Consensus, all economic activities are seen as qualitatively alike. Indiscriminately opening any nation to the 'magic of the market' will allow that nation to acquire the necessary long-term external competitiveness, promote economic growth and enhance its standard of living, regardless of the country's productive specialization.

This chapter evaluates whether the type of productive specialization and trade in specific products has affected economic growth and standards of living in Peru. It seeks to determine if the prevalence of producing or trading goods from specific sectors – whether natural resources, industrial or service – has an impact, positive or negative, on the people's standard of living and well-being. To this end, we analyse Peruvian data for the last 50 years of the twentieth century, paying special attention to expansion and recession cycles and to industrialization policies implemented in Peru's economy since the end of the 1950s.

Our two core hypotheses, which are strongly related, are as follows. (1) In Peru during the last 50 years of the twentieth century, the standard of living was inversely related to the weight of the primary sector in the total economy. In other words, the standard of living of the population declines as raw materials and extractive activities grow at the expense of the manufacturing sector. We have named the combination of a shrinking manufacturing sector and a growing primary sector 'deindustrialization'. (2) The economy becomes increasingly fragile if, as a result of international specialization, the nation sells increasing amounts of simple raw materials in

exchange for foreign goods which require greater manufacturing skill and more advanced technology.

The first section provides a brief overview of the theoretical framework that explains how economic activities are differentiated and why countries that specialize in producing and trading goods of 'lower quality' eventually erode their standards of living. The second section presents quantitative data on standards of living and the major types of activities that dominated in the Peruvian economy over the last half of the twentieth century. The third section presents our main findings concerning the relationship between deindustrialization, industrialization and real wages, and the fourth section provides an evaluation of the increasing gap of quality and value between Peruvian exports and imports. And finally, we offer some recommendations on how Peru can benefit from the era of globalization.

1.   THEORETICAL CONSIDERATIONS

Most classical literature about economic growth holds that a nation's choice of economic activities is not the critical element; rather, theory holds that economic growth depends on the abundance and best use of capital, labour or natural resources. In more complicated models factors such as technology, infrastructure, free trade, government's efficiency, savings and investment, education, individual effort and the driving force of the people are included as well. However, little or no attention has been paid to economists who underscore the type of products a country turns out as a major factor in economic growth. Reinert (1995, 1996, 1998) has explored more than 500 years of economic history to show that economic growth and real wages to a large extent have been determined by the type of activities nations pursue. Graham (1923) presents the essence of the extremely important nineteenth-century argument for a nation to specialize in economic activities subject to increasing rather than diminishing returns to scale. Graham shows that the standard of living and income level of two countries that specialize in production and engage in trade on the basis of their comparative advantages will improve if, and only if, both countries can produce similar returns.

If one country specializes in producing goods with increasing returns while the other specializes in producing goods with diminishing returns, the income of the world at large will increase, but revenues in the country that produces goods at diminishing returns will decrease while revenues in the country with increasing returns will rise. This means that one country will be wealthier and the other poorer although the world as a whole will

become wealthier.[2] We have further elaborated on Graham's initial exercise to show that trade between countries with similar returns favours both countries, but if one country has growing or constant returns and the other has diminishing returns, the former will prosper to the disadvantage of the latter (Appendix).

Another argument underscoring the influence of the type of productive activity on economic growth was advanced in the 1950s and 1960s by authors such as Hirschman (1961), Prebisch (1970), Singer (1981), Seers and Leonard (1975) and Myrdal (1963). Prebisch holds that countries specializing in raw materials and natural resources are harmed because the prices of raw materials grow relatively less rapidly than prices of manufactured products. Hirschman believes that agriculture lacks the upstream and downstream linkages and the complex division of labour that characterize manufacturing. Myrdal mentions the 'cumulative causation' present in manufacturing but not found in natural resources development. Others point to higher income elasticity and increased growth of demand for manufacturing goods compared to primary products.

In the 1990s, Matsuyama (1992) and others pointed to the fact that manufacturing shows positive growth effects that are absent in agriculture and stem from higher induced learning. This means there are a number of learning externalities that neither agriculture nor the service sector – in the absence of a healthy manufacturing base – can provide.

Sachs and Warner (1995) present an empirical, comparative world survey showing that countries richly endowed with natural resources grow less than countries specializing in tradable manufactured products. Yet they fail to explain the reasons underlying those differences and then argue that free trade is beneficial for all parties involved.

Within the theory of trade, Krugman (1991) and Krugman and Obstfeld (1995) maintain that one economic activity may be better than another only if there are market imperfections that include positive externalities originating in technological innovation or the existence of rents in highly concentrated oligopolistic industries.[3]

Graham's 1923 paper shows how the choice of economic activity will determine wealth or poverty in a world with important scale effects but without technical change. Reinert (1980) discusses the intrinsic difficulty of separating increasing returns and technical change during nineteenth- and twentieth-century industrialization. Although clearly separable in theory, increasing returns and technical change are often inseparable in reality. Previous technologies are most often not available in the new scale of operations. For this reason Schumpeter coined the term 'historical increasing returns', which includes the combined effect of increasing returns and technical change over time.

Reinert (1996, 1998) takes a more dynamic, encompassing and integrating viewpoint of economic history that addresses and complements theories about competitiveness and corporate strategy by authors including Porter (1990), Marrus (1984) and David (1986). Reinert argues that economic activities are different from a qualitative vantage point and that they determine economic growth and income disparities among nations. He proposes a 'quality index' for economic activities, in which countries that grow are those that focus on producing 'high-quality' goods while nations that engage in 'low-quality' activities grow less or retrogress.

High-quality goods typically feature increasing returns and are produced under conditions of imperfect competition with steeply sloping learning curves, rapid technological changes, large-scale R&D and investment, high growth and income demand elasticity rates, economies of scale, numerous linkages, a high and complex division of labour, a significant need to 'learn by doing', high industrial concentration, imperfect yet extremely dynamic information flows, high barriers to market entry and exit, and high salaries. All of these industries closely follow the assumptions of Schumpeter's theory of imperfect though dynamic and changing competition.

Low-quality goods are characterized by precisely the opposite conditions – that is, all of those activities that closely reflect the traditional assumptions of the neoclassical theory of production, trade and growth.

According to Reinert (1996), trade among industrial and non-industrial nations is characterized by asymmetrical exchanges between industries that on the one hand feature rapid technological change and large economies of scale, competing under conditions of imperfect competition, and on the other hand industries characterized by diminishing returns and perfect competition. Moreover, he holds that present-day industrial economies historically chose to follow an active and deliberate path to 'high-quality' goods production by enforcing highly successful industrial and commercial strategies. Having established themselves firmly in high-quality activities, wealthy nations subsequently do not permit developing nations to copy the strategy they used to make the transition from poor to wealthy nations. This was the accusation that the young United States levelled against England.

2.   STANDARD OF LIVING AND TYPE OF ECONOMIC ACTIVITY: PERU 1950–97

Based on the hypothesis that growth and standards of living depend on the type of activity in which a country specializes, this section analyses the evolution of standards of living and the major economic activities that characterized Peru in the last half of the twentieth century.

2.1   Legal and Institutional Aspects: Industrial and Labour Policies

Both the type of economic activity and the standard of living of any economy are influenced not just by economic and market cycles, but also by industrial, labour and income policies and by institutional factors and diverse cultural elements. Although we do not attempt to identify every one of these factors, it is necessary to take into account the wider trade, industrial and income policy periods that Peru experienced in the last 50 years of the twentieth century.

Since 1959, Peru's productive activities were to varying extents influenced by the Industrial Promotion Law, which introduced substantial incentives for industrial investment. Some of the schemes included in this law underscored tax incentives for reinvestment and effective protection of the manufacturing industry by reducing tariffs on capital goods imports, parts and raw materials while increasing them on consumer goods imports (Ferrari 1992, Portocarrero and Nunura 1984).

The 1959 law was followed by the 1970 Industrial Promotion Act and 1981 and 1986 bills that slightly modified the initial regulations. However, the crucial role afforded to incentive policies, and to the state's role as regulator, planner and even producer, was maintained. These were the characteristics of the industrial policy introduced in 1970 when state-owned companies started to expand.

The concept of priority industries was introduced in 1970 to promote the development of basic industries including cement, paper, basic chemicals, steel, fertilizers and oil refining, all of which were reserved exclusively for the state. Manufacturing was promoted through the tax structure, tariffs, credits and administrative schemes. In 1981 and 1986, although the existing industrial policy was largely preserved, the state's monopoly and the definition of priority industries were cancelled, as were tax exemptions for reinvested profits.

From the 1960s to the 1980s industrialization policies generally favoured permanent protection for all types of industries devoted to producing finished products for a local market where there was little internal competition. There existed no learning processes or linkages with foreign countries, technology was imported, and the policy as a whole was enforced with a static planning vision of the world and of business. This policy sought to create an industry to assemble imported parts and components without paying much attention to education, creativity and training. It thus had little chance of linking up with a broader market. Income and job allocation in industry were ruled by a static rent- and profit-seeking attitude, and by a culture based on nepotism rather than merit. Government assumed an oversized entrepreneurial role that lacked

synergy and eventually excluded and displaced domestic and foreign private investment.

The first half of the 1970s saw the emergence of revenue measures and reforms that initially fostered wage and salary growth and that were related to the land and company reforms. Likewise, a number of labour regulations enacted during that period made lay-offs more difficult while giving workers job tenure and strengthening unions.

In the 1990s all the previous industrial, labour and income policy schemes were cancelled. The new government policy suspended the main tax exemptions, reduced tariff structure and lifted price controls while financial, exchange and trade regulations were liberalized. Job tenure was eliminated and labour legislation was made more flexible, thus dramatically reducing the power of unions. A radical government downsizing programme through privatization and the sale of state-owned assets was introduced and restrictions on the flow of foreign private capital were lifted.

As we shall see, the relative importance of the manufacturing sector grew through the enforcement of industrial policies only until the mid-1970s and was later reduced in the wake of earlier stabilization programmes. To the extent that industrial development was based on developing the domestic market through industrialization that focused on import substitution, the enforcement of adjustment programmes inevitably led to receding national industrialization. Concurrently, standards of living and income levels fell as a result of booming population growth and lower factor productivity.

2.2   Evolution of GDP and Major Economic Activities

Peru's economy grew at an annual 3.3 per cent average rate[4] from 1950 to 1997 but its annual performance was very irregular and less than satisfactory (see Figure 5.1). In the 20 years from 1950 to 1970, the annual average growth rate reached 5 per cent with only two years of recession and stagnation in 1958 (−0.6 per cent) and 1968 (0.4 per cent).

Between 1970 and 1990, annual growth was 1.7 per cent including several periods of strong economic contraction caused by weather difficulties such as the 1983 El Niño anomaly (−12.6 per cent) and drought in 1992 (−1.4 per cent) as well as by adjustment and stabilization programmes in 1976–78, 1988–89 and 1990. Finally, during the 1990–97 period, the economy grew at an annual 5.7 per cent rate despite the fact that production in 1997 was only 13 per cent greater than in 1987.

A breakdown of GDP by period and economic sector in the 1950s and 1960s reveals that fisheries activities led growth at an annual average rate of 19 per cent and 9.3 per cent respectively, while energy (electricity, gas and water) grew 8.8 per cent and 7.4 per cent, and manufacturing expanded 7.1
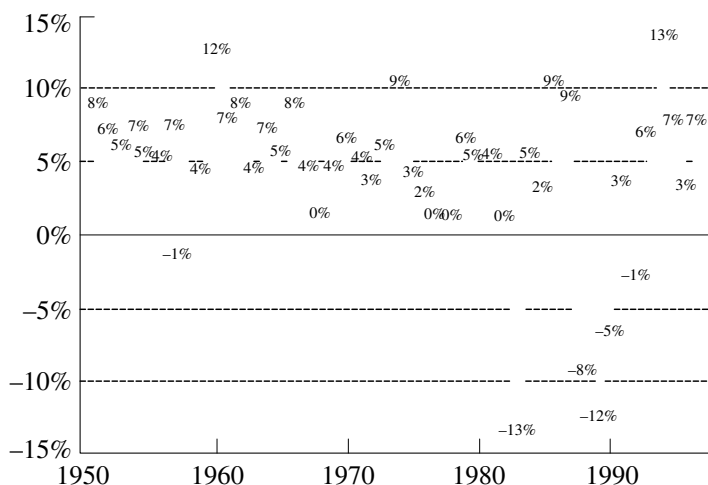
Figure 5.1   Gross domestic product, 1950–2000 (% change annually)

Table 5.1   GDP annual average growth by activities (%)

	1950–60	1960–70	1970–80	1980–90	1990–97	1950–97
Global	5.0	5.0	3.6	−0.3	5.7	3.3
Agriculture	1.5	3.1	0.5	2.4	5.7	2.0
Fisheries	19.0	9.3	−4.6	9.3	5.1	5.5
Mining	7.2	3.8	7.8	−3.3	2.8	3.8
Manufacturing	7.1	5.5	2.9	−0.4	5.4	3.4
Electricity, gas and water	8.8	7.4	9.4	3.0	6.6	7.1
Construction	4.9	3.5	3.1	−0.5	12.1	3.1
Housing	3.4	2.9	2.9	1.6	1.4	2.6
Government	4.7	5.4	4.7	0.7	0.7	3.5
Other	5.2	6.0	3.8	−0.9	6.3	3.5

Source: Perú National Statistics Institute (INEI).

per cent and 5.5 per cent for the respective years. Such levels of growth gave these productive sectors a significantly larger share in global GDP in the first two decades of the periods under consideration (see Table 5.1).

In the mid-1970s, macroeconomic imbalances and stabilization policies reduced the pace of economic growth to 3.6 per cent per annum. The most dynamic industries in that period were energy, mining and government

services. However, fisheries fell, agriculture stagnated and manufacturing
grew barely above population growth. Evolution in the 1980s was even
more dramatic, given the higher vulnerability of the external sector. To this
we may add populist policies enforced during 1985–89 that eventually led
to a 0.3 per cent yearly drop in GDP. Excepting fisheries and energy, all
other economic activities performed poorly, in particular mining, construc-
tion and manufacturing.

By 1997 annual average growth had reached 5.7 per cent for that decade,
with construction leading growth, followed by electricity, gas and water and
commerce and services. The most obvious laggard sectors were government
services, rental housing and mining. Product mix during 1990–97 under-
went substantial restructuring to the benefit of agriculture and construc-
tion, with less importance attributed to mining and government services.

Generally, the industrial policy enforced since the end of the 1950s led to
the development of the manufacturing industry, which increased its share
from 19 per cent in 1950 to a maximum 25.5 per cent in 1976. However,
together with poor management of the agricultural companies created by
the state, this industrial policy led to the relative fall of agriculture, which
dropped from 23.7 per cent in 1950 to 9.9 per cent of GDP in 1980 (Table
5.2).

In the 1980s and 1990s, manufacturing took a step backwards compared
to the 1970s, with a clear trend towards deindustrialization. The reasons
can be found in the effects of the recession provoked by stabilization pro-
grammes and by the suspension since 1990 of various industrial promotion
and protection schemes and incentives that had been in place since 1959.
Evolution in most other sectors was basically influenced by exogenous
factors, be they foreign (as in mining), weather (fisheries), population

Table 5.2   GDP structure by activity (%)

	1950	1960	1970	1980	1990	1997
Agriculture	23.7	17.1	14.2	9.9	13.4	13.2
Fisheries	0.2	1.0	1.9	0.5	1.3	1.1
Mining	7.6	10.3	9.1	12.9	10.1	8.3
Manufacturing	19.0	23.6	24.9	23.8	22.1	22.0
Electricity, gas and water	0.3	0.5	0.6	1.1	1.6	1.8
Construction	5.9	5.4	5.3	5.5	5.9	8.8
Housing	4.1	3.3	2.6	2.4	3.2	2.5
Government	5.9	5.5	5.7	6.4	6.7	4.6
Other	33.2	33.4	35.7	37.5	35.7	37.8

Source: INEI. Prepared by the authors.

(electricity, gas and water) or relating to the expansion of government expenditure (as in construction and government services).

An easier way to classify productive specialization in Peru over the past half century is by dividing GDP into four large economic groups or sectors: (1) extractive or primary activities (agriculture, fisheries and mining); (2) basic transformation or infrastructure (construction); (3) intermediate or industrial transformation (manufacturing); and (4) services (home rentals, government, electricity, gas and water, commerce, services and others).

Although this standardized classification is rather broad and does not accurately reflect the 'quality index for economic activities' proposed in the theoretical framework, we still do not have a methodology that will allow us to classify economic activities by use-intensity and technological upgrading capabilities, nor from the viewpoint of their relationship to increasing, constant or diminishing returns.[5]

Despite these constraints, we can assume that on average, natural resources activities are extractive and create goods with diminishing returns in perfectly competitive markets with low salaries. Infrastructure and manufacturing activities are processes with increasing returns, operating in imperfect markets, with larger technology investments, higher salaries. The service sector falls somewhere between the two.[6]

Table 5.3 shows GDP structure according to the four suggested sectors. Clearly, in the third quarter century, from 1950 to 1975, the primary sector's participation decreased by a significant 12 points. In the 1980s and 1990s, this sector's importance increased again, from 19.2 to 22.5 per cent.

Manufacturing activities (including processing of primary resources

Table 5.3   GDP structure by activity (%)

	Primary	Industrial	Construction	Services
1950	31.6	19.0	5.9	43.5
1955	27.5	21.7	7.9	42.9
1960	28.4	23.6	5.4	42.6
1965	24.9	24.6	5.8	44.6
1970	25.2	24.9	5.3	44.6
1975	19.2	25.1	6.7	49.0
1980	23.3	23.8	5.5	47.4
1985	25.1	21.8	4.6	48.5
1990	24.7	22.1	5.9	47.2
1995	22.7	22.2	8.5	46.5
1997	22.5	22.0	8.8	46.7

Source: INEI. Prepared by the authors.

such as fishmeal, frozen fish, sugar, non-ferrous metals and refined oil) also increased their share as a result of industrialization policies and reached a maximum 25 per cent of GDP in 1975 then to fall again in 1980, 1990 and 1997.

Throughout the period under consideration, construction never increased its share of GDP above 7 per cent, except in 1955 when it reached 7.9 per cent and in more recent years when, propelled by government expenditures and expanded home building in the private sector, it reached almost 9 per cent of GDP.

And finally, services increased their relative share from 43 per cent in the 1950s to 47 per cent in the 1990s.

2.3   Standard of Living: Per Capita Product, Per Capita Consumption and Remuneration

A simple way to classify levels of income and standards of living is through indicators like per capita product and consumption, and salaries (white-collar income) and wages (blue-collar income). Although it is true that these indicators may hide inequality and income distribution disparities, they do constitute reasonable criteria for this essay.

Taking into consideration that population grew at an annual average rate of 2.6 per cent, GDP per capita from 1950 to 1997 grew annually at a 0.7 per cent rate, and private per capita consumption grew by 0.6 per cent. It would take at least 100 years for income per capita and the population's purchasing power to double at these rates. Despite such overall poor performance, we can observe rapid growth in the first 25 years of the period under study, which led GDP and consumption per capita in the mid-1970s to rise 80 per cent above the corresponding 1950 figures. However, in subsequent years there was a notorious falling trend so that per capita income in 1997, although 69 per cent higher than in the 1950s, was 11 per cent lower than the historical record reached in 1981. Moreover, current per capita private consumption is 52 per cent higher than that of the 1950s but 17 per cent below the historical record achieved in 1975 (see Figure 5.2).

Table 5.4 shows that GDP and per capita consumption growth have not evolved in parallel. Quite the contrary, there have been alternating periods where income growth exceeded consumption growth and, conversely, in other periods consumption exceeded the growth of income. Thus, in the 1950s, 1970s and 1990s per capita GDP growth exceeded the growth of private consumption while it was lower in the 1960s and 1980s.

Between 1960 and 1997, real salaries (white-collar) and wages (blue-collar) fell at an average annual 4.2 per cent and 3.7 per cent rates, respectively, thus diminishing more steeply than per capita revenues and
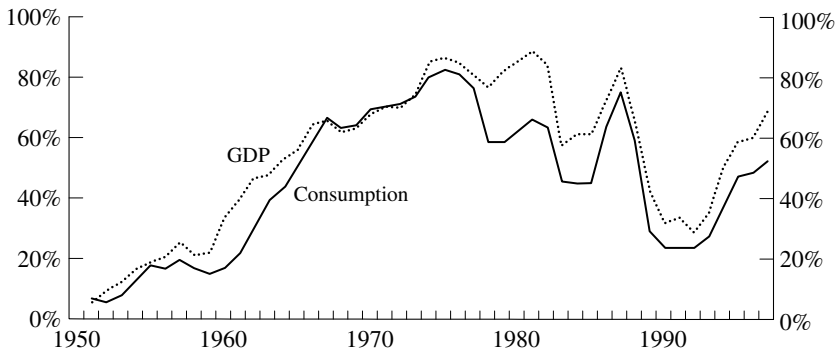
*Figure 5.2   GDP and private consumption per capita (cumulative %
       change)*

consumption. Workers' earnings were most severely hit during the 1980s
when they fell between 9 per cent and 10 per cent annually, so that earnings
in 1990 were scarcely between 21 per cent and 29 per cent of those prevail-
ing in 1960 (Figure 5.3).

Economic growth in the 1990s was basically reflected in higher compen-
sation for white-collar employees (salaries), and to a lesser degree in blue-
collar labourers (wages). Real salaries in 1997 were 50 per cent higher than
in 1990, while wages were only 10 per cent higher. Despite growth in recent
years, real earnings in 1997 fell by 68 per cent compared to 1960.

Generally, living standards over the last half century measured either by
per capita private consumption or by real wages and salaries were charac-
terized by an upward trend until the mid-1970s, and then by a strong
contraction with the introduction of economic stabilization programmes.
However, wages and salaries suffered a stronger decline (-75 per cent since
1973) than per capita consumption (-17 per cent since 1975), showing that
those white- and blue-collar salary and wage earners bore the brunt of eco-
nomic adjustment.

3.   THE RELATIONSHIP BETWEEN PRIMARY
       ACTIVITIES, INDUSTRIALIZATION AND
       STANDARD OF LIVING

This section analyses the relationship between Peru's productive specializa-
tion categorized by product as proposed in Section 2.2, and the popula-
tion's standard of living and income estimated in Section 2.3. More
specifically, it determines whether higher relative development of primary

Table 5.4   Annual Average Growth: GDP, Private Consumption and Remuneration (%)

	1950–60	1960–70	1970–80	1980–90	1990–97	1950–97	1960–97
GDP per capita	2.4	2.2	0.9	−2.5	3.9	0.7	−0.06
Consumption per capita	1.5	3.8	−0.7	−1.8	3.5	0.6	−0.2
Real salaries (white-collar)	NA	−1.0	−5.8	−9.0	6.6	NA	−4.2
Real wages (blue-collar)	NA	0.6	−2.2	−10.5	0.9	NA	−3.7

Source: INEI. Prepared by the authors.
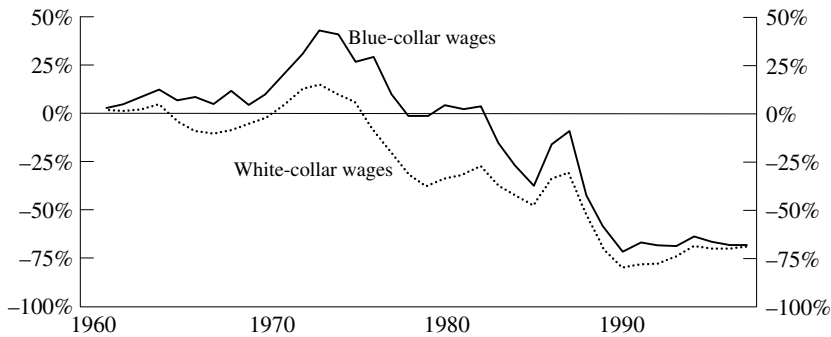
Figure 5.3   Real remuneration, 1960–2000 (cumulative % change)

goods, infrastructure, manufacturing or services is linked to higher living standards measured through wages and salaries or per capita private consumption.

A relationship between productive specialization and standard of living is proposed for both the long- and short-term periods. In the long run, the most relevant economic growth factors are increased productivity, economies of scale, technological innovation, labour specialization and capital stock increases. In the short term, macroeconomic fundamentals and imbalances are the key factors.

3.1   The Long-Term Factor: Specialization in Sectors with Diminishing Returns and Poor Technological Development

By plotting the percentage variation in living standards to the vertical axis and the changes in primary activities as a percentage of GDP to the horizontal axis we observe an inverse (or negative) relationship between the relative importance of primary or extractive activities (such as agriculture, fisheries and mining) and private per capita consumption or real earnings (Figure 5.4). Simply put, higher participation of primary activities leads to lower private per capita consumption, salaries and wages.

Figure 5.5 shows a similar but opposite relationship for manufacturing. As industrialization increases, higher per capita consumption and earnings (salaries and wages) are observed, meaning that increases in the industrialization index would imply higher standards of living.

A simple regression analysis by least squares for the period 1950–97 shows that for every incremental percentage point of extractive activities, private consumption falls by approximately 2.6 per cent while white-collar salaries fall by –5.4 per cent and blue-collar wages by –7.4 per cent (Table
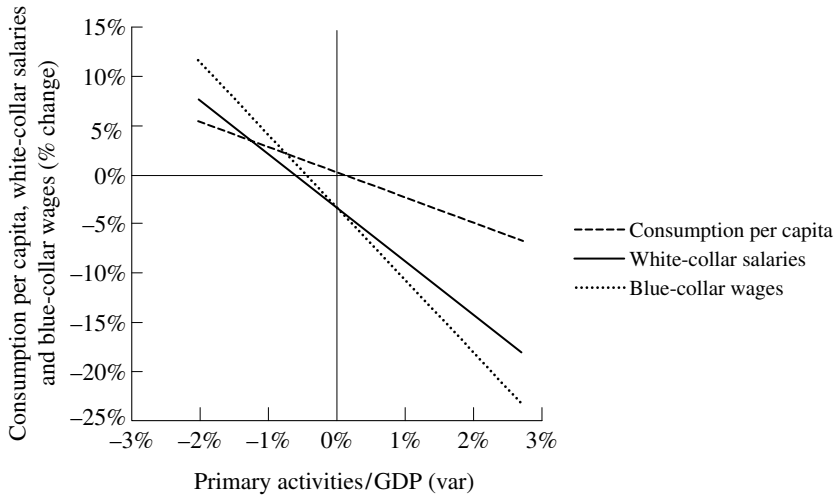
Source: See Table 5.5.

*Figure 5.4   Consumption per capita, white-collar salaries, blue-collar
              wages and deindustrialization*
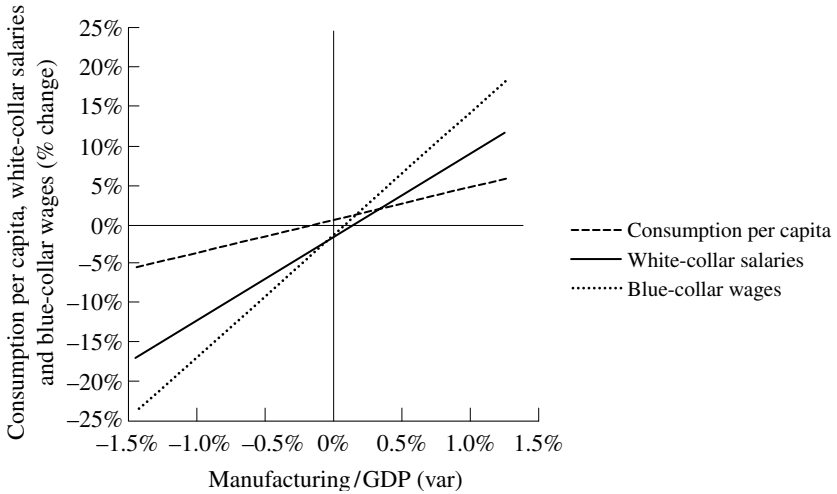
Source: See Table 5.5.

*Figure 5.5   Consumption per capita, white-collar salaries, blue-collar
              wages and industrialization*

Table 5.5 Impact of productive specialization on standards of living, 1950–1997

Independent variable:	Primary	Manufacturing	Construction	Services
Dependent variable:				
Consumption per capita, 1952–1997				
Coefficient (c_0)	0.46	0.66	0.68	0.86
Impact (c_1)	−2.58[1]	4.22[1]	3.12[1]	0.05[2]
R-squared	0.41	0.43	0.28	0.18
Durbin Watson Stat.	1.85	1.83	1.65	1.64
White-collar salaries, 1962–1997				
Coefficient (c_0)	−3.16	−1.66	−2.71	−2.33
Impact (c_1)	−5.41[1]	10.60[1]	5.79[2]	0.28[2]
R-squared	0.39	0.47	0.26	0.21
Durbin Watson Stat.	1.89	1.78	1.78	1.71
Blue-collar wages, 1962–1997				
Coefficient (c_0)	−3.22	−1.43	−2.73	−2.31
Impact (c_1)	−7.36[1]	15.52[1]	6.97[2]	0.54[2]
R-squared	0.35	0.50	0.11	0.05
Durbin Watson Stat.	2.13	1.97	1.92	1.90

Notes:
[1] Statistically significant at 5%
[2] Statistically not significant at 5%
Model estimated by least squares: $Y_t = c_0 + c_1 (X_t - X_{t-1})$
When Y_t . . . Standards of living (real percentage change):
• Consumption per capita
• White-collar salaries
• Blue-collar wages
X_t . . . Productive specialization (as percentage of GDP):
• Primary
• Manufacturing
• Construction
• Services

5.5). In other words, the adverse impact is greater on earnings as a whole than on consumption.

On the other hand, an extra percentage point in the share of manufacturing activities would increase per capita consumption by 4.2 per cent, white-collar real salaries by 10.6 per cent and blue-collar real wages by 15.5 per cent. This means that manufacturing specialization not only increases standards of living but has a proportionally larger impact on blue-collar wages, thus leading to a positive effect on income distribution.

In the construction industry, the impact on the various standard-of-living indicators would also be positive although the respective parameters are substantially smaller than those for manufacturing and are of little statistical significance.[7] Finally, impact in the service sector would be close to zero with little statistical significance in either private consumption or earnings.

If economic deindustrialization has the long-term effect of reducing the population's standard of living, why has there been such a long-term insistence on producing primary goods? Two fundamental explanations are in order. The first, presented below, deals with the way the country participates in the world economy. The second relates to macroeconomic imbalances and will be analysed later when we deal with the short-term factors affecting industrialization.

Peru's conventional exports and a large portion of its nonconventional exports are resource-based. Approximately 80 per cent of total exports are related to agricultural, mining and fisheries industries while only 20 per cent are related to manufacturing. This type of participation in international trade based on the use of natural resources has led to the growth of exports in the last 50 years. It has also led to increasing economic deindustrialization, a fact confirmed by a positive correlation ($r^2 = 0.36$) between deindustrialization and exports as a percentage of GDP (Figure 5.6). Likewise, a positive correlation exists between real exchange rate and deindustrialization, where $r^2 = 0.29$ (Figure 5.7), which proves that devaluation in real terms would increase the relative importance of primary activities.

Why would a higher real exchange rate lead to the increased relative participation of primary activities, that is, to deindustrialization? (1) The physical quantity of raw material exports would increase as a higher real
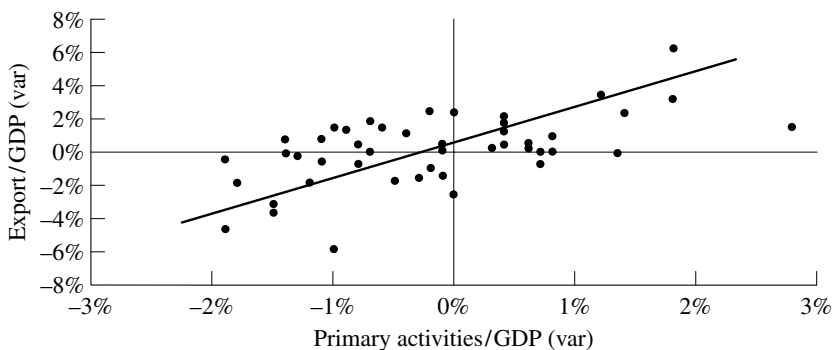

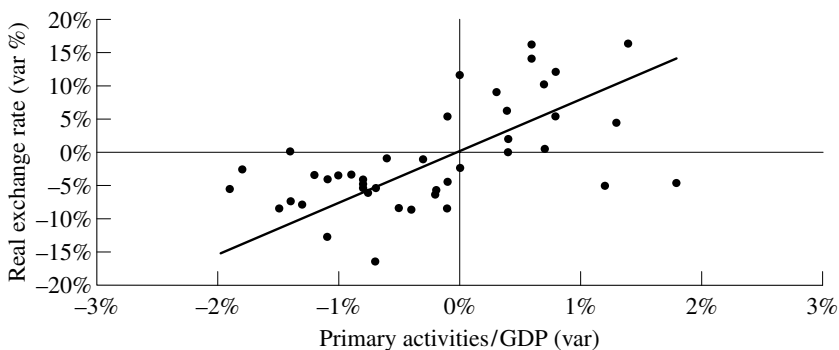*Figure 5.6   Export/GDP and deindustrialization*

Figure 5.7   Real exchange rate and deindustrialization

exchange rate increases their profitability. (2) The increase of raw materials exports is higher than the expansion of manufacturing products (for either the domestic or external market) which would also grow as the real exchange rate increases. (3) Indirectly, deindustrialization grows as manufacturing output is reduced given the eventual negative impacts of higher real exchange rates on domestic demand. In these three instances real-term devaluation would reduce the manufacturing to GDP ratio, which would translate into higher participation of primary activities.

This occurs because the country's industrialization process revolved around the domestic market and not the external market, that is, it was not supported by the active and efficient promotion of manufacturing exports. If industrialization and the implicit trade policy were export oriented, the slope of the curve in Figure 5.7 would be steeper and may even become negative because devaluation would eventually reduce economic deindustrialization. For this to happen, however, the whole national industrial and trade strategy would have to be redefined, compared to recent decades.

3.2 Short-Term Factors: Macroeconomic Imbalances

A second reason why it has not been possible to reverse economic deindustrialization relates to short-term macroeconomic imbalances.

Although we showed that, in the long term, industrial development would lead to increased standards of living and revenues, there is a fundamental difficulty in maintaining basic macroeconomic balances. This difficulty determines swings between industrialization and deindustrialization (see Figure 5.8).[8]
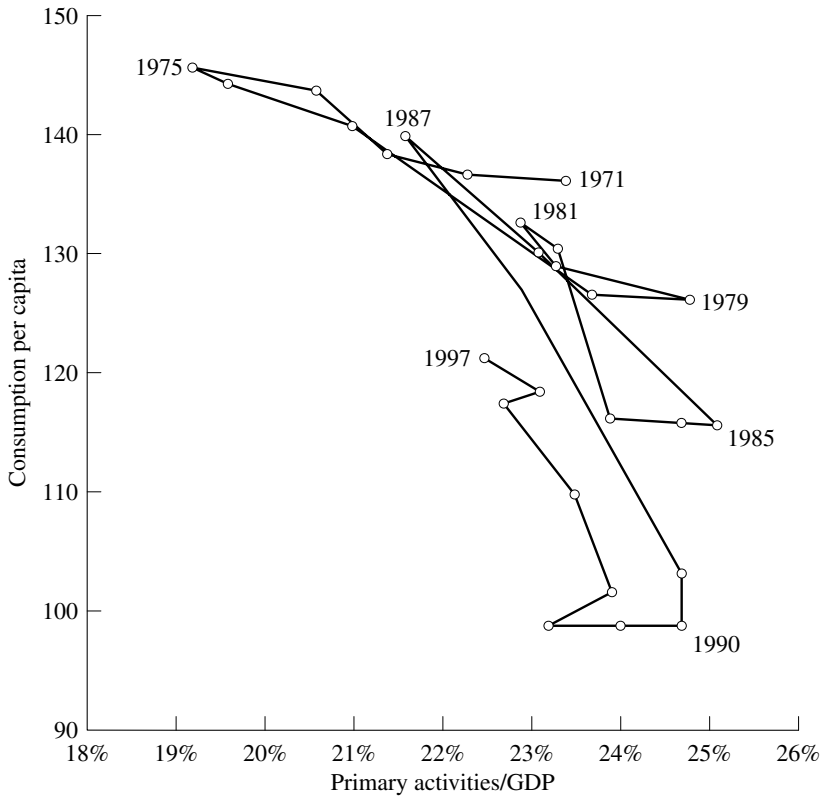
Figure 5.8   Consumption per capita and deindustrialization, 1971–97

If we separate into three periods the relationship between per capita con-
sumption and primary activities to GDP, 1971–78, 1979–84 and 1985–90,
we may see that within each period there are years when primary activities
contract and therefore industrialization and standards of living increase.
These might then be followed by other years where the reverse occurs, that
is, the relative importance of extractive activities grows again with the con-
sequent reduction in living standards.

For example, from 1971 to 1975 (Figure 5.9), the rate of primary activi-
ties to GDP fell from 23.4 per cent to 19.2 per cent while per capita con-
sumption increased by 6.9 per cent (from 136 to 146, in 1979 soles).
However, in the three years that followed, primary activities grew again
while consumption declined, for a standard of living that was 7 per cent
lower than at the beginning of this stage in 1971 – despite quite similar
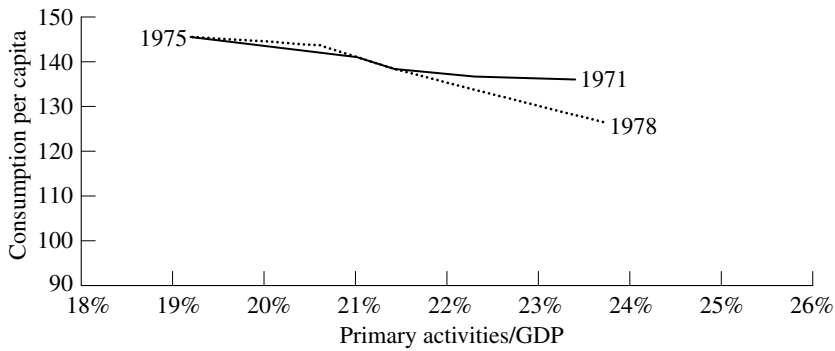deindustrialization levels.

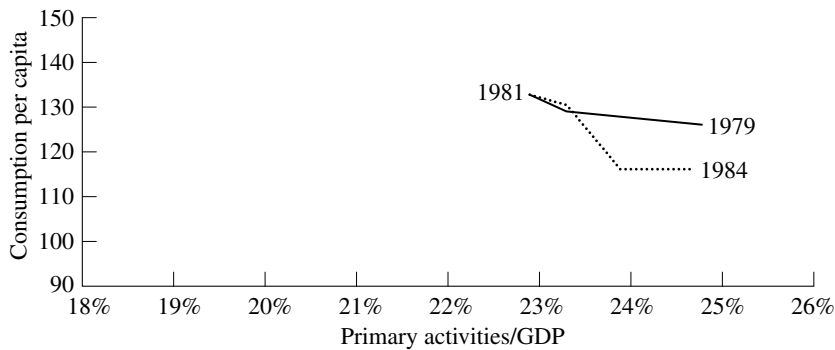*Figure 5.9   Consumption per capita and deindustrialization, 1971–78*

Figure 5.10   Consumption per capita and deindustrialization, 1979–84

In the second case (Figure 5.10) we observe that from 1979 to 1981, participation of the primary sector dropped, pushing consumption up by 5 per cent. In the subsequent three years, primary activities grew again to 24.7 per cent while consumption fell by 12.7 per cent, even below 1979 consumption levels. However, the effects of the 1983 El Niño weather phenomenon could largely account for this fact.

In Figure 5.11, our third example shows that primary activities as a percentage of GDP fell by 3.5 percentage points while per capita consumption increased strongly by 20 per cent. However, in the four years that followed, the importance of extractive activities rose again to 24.7 per cent of total GDP while per capita consumption plummeted by 29.4 per cent or below its 1985 level when the process started.

In these three instances, such pendulum movement led the level of deindustrialization almost to its point of departure; however, per capita
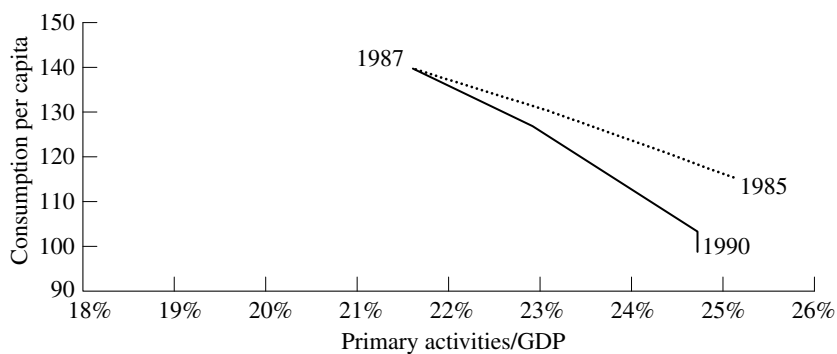
Figure 5.11   Consumption per capita and deindustrialization, 1985–90

consumption ultimately fell to a significantly lower level than its initial point. Consequently, these processes are extremely damaging to the standards of living of the population at large, because besides the pendulum swing from right to left, we can also see a downward trend. By comparing the coordinates for 1979, 1985 and 1990, we note that the level of primary activities to GDP is roughly similar. Still, per capita consumption was significantly lower in 1990 than in 1985 and 1979. In other words, from the viewpoint of standards of living, the progress made in the 1980s was totally wasted.

The trend toward deindustrialization began in 1976, 1982 and 1988, when the trade gap became unbearable and the country's foreign currency reserves did not suffice to sustain the imports of goods and services (see Table 5.6).[9]

In the 1990s (up to 1997), the liberalization policy translated into a slight decrease in the level of primary activities from 24 per cent in 1991 to 22.5 per cent in 1997, parallel to an increase in per capita consumption of 22.7 per cent propelled by higher earnings and expanded consumer loans (see Figure 5.12).

An important factor in the 1990s leading to falling primary activities to GDP ratio was the strong growth of the construction industry to reconstruct the basic social infrastructure damaged by external factors such as weather and terrorism. Also influential was the opening of the economy and privatization that led to substantial investment growth, in particular foreign investment, in non-tradable activities such as commerce, transportation, communications and energy which for purposes of this chapter have been grouped as services.

However, declining primary activities has not led to the growth of the manufacturing industry, implying that the economy is deindustrializing

Table 5.6 *Main economic indicators 1974–97*

	Primary activities to GDP (%)	Inflation (%)	GDP (Δ%)	Domestic demand (Δ%)	Trade balance (US$ millions)	Foreign reserve (US$ millions)	Foreign reserves (as % of imports)	Terms of trade (Δ%)	Prime rate (%)
1974	20.6	19.2	9.2	14.1	(405)	693	28.2	4.6	10.80
1975	19.2	24.0	3.4	2.0	(1097)	116	3.8	−31.0	7.86
1976	19.6	44.7	2.0	−1.8	(675)	(752)	−30.1	12.7	6.84
1977	21.0	32.4	0.4	−1.9	(422)	(1101)	−43.2	2.3	6.82
1978	23.7	73.7	0.3	−7.9	304	(1025)	−49.9	−18.8	9.06
1979	24.8	66.7	5.8	4.3	1722	554	22.5	31.9	12.67
1980	23.3	60.8	4.5	14.0	826	1276	32.1	10.2	15.27
1981	22.9	72.7	4.4	8.9	(553)	771	15.8	−18.1	18.87
1982	23.3	72.9	0.2	−0.6	(429)	896	18.6	−17.5	14.86
1983	23.9	125.1	−12.6	−17.6	293	856	23.2	7.4	10.79
1984	24.7	111.5	4.8	−1.4	1007	1103	36.4	−8.8	12.04
1985	25.1	158.3	2.3	−0.3	1172	1383	49.6	−10.2	9.93
1986	23.1	62.9	9.2	16.8	(65)	866	24.0	−26.7	8.35
1987	21.6	144.5	8.5	13.1	(577)	81	1.9	0.8	8.21
1988	22.9	1722.3	−8.3	−8.7	(99)	(317)	−8.0	8.2	9.32
1989	24.7	2775.3	−11.7	−19.7	1197	546	15.9	−3.5	10.92
1990	24.7	7649.7	−5.4	0.1	346	682	16.8	−9.7	10.01
1991	24.0	139.2	2.8	3.9	(166)	1933	40.8	−4.9	8.46
1992	23.2	56.7	−1.4	1.2	(566)	2425	44.4	−1.8	6.25
1993	23.9	39.5	6.4	5.9	(599)	2910	52.6	−8.1	6.00
1994	23.5	15.4	13.1	14.2	(1022)	6025	84.1	10.4	7.14
1995	22.7	10.2	7.2	11.5	(2185)	6693	69.2	6.5	8.83
1996	23.1	11.8	2.6	−0.0	(1967)	8862	88.9	−5.2	8.27
1997	22.5	6.5	7.2	6.7	(1738)	7982	73.6	5.2	8.44

Note: *GDP fell, strongly influenced by El Niño weather anomaly.

Source: INEI, Central Reserve Bank (Banco Central de Reserva del Perú), IMF. Prepared by the authors.
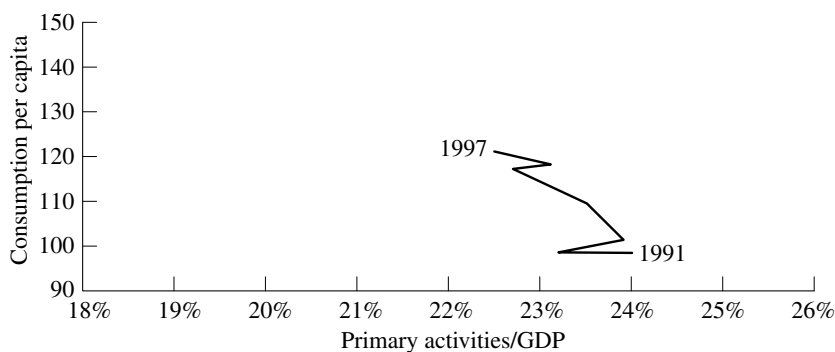
Figure 5.12   Consumption per capita and deindustrialization, 1991–97

because construction and services are expanding their respective shares.
The standard of living improves and incomes grow because construction
and services are activities of 'higher quality' than primary ones.

If we determine the speed at which the economy reduces its primary level
of activities during the various periods when the phenomenon effectively
occurred, we may observe that in the recent economic liberalization period
from 1991 to 1997, primary activities fell by 0.25 points per year. In those
periods where import-substitution industrialization policies were enforced,
the drop was 1.0 point per year from 1971 to 1975 and 1979 to 1981, and
1.7 points per year from 1985 to 1987. This means that in the 1990s market
liberalization policies led to lower deindustrialization ratios but at a signifi-
cantly slower speed than when the process was induced or strategically
driven by industrialization policies in the 1970s and 1980s.

Such 'slow' reduction of deindustrialization during the period when the
economy opened up was not exempt from macro-economic imbalances
which were also present during the industrialization processes analysed
above. It is worth noting, for instance, that in 1993 and 1996, the deindus-
trialization index rose rather than fell (see Figure 5.12) because of the 1992
drought, in the first case, and due to excess domestic demand in 1994 and
1995 in the second case. This led to macroeconomic adjustment to prevent
a further widening of the trade gap. In other words, deindustrialization
grows precisely when there is imminent danger of macroeconomic instabil-
ity and because of prudent short-term management of macroeconomic
fundamentals. If macroeconomic imbalances were not immediately pre-
vented, it is possible that primary activities would have diminished further
on, thus making possible a strong swing back toward greater deindustrial-
ization at the time the economy finally gets adjusted.

Sustained growth of foreign currency reserves in recent years largely con-

tributed to revert deindustrialization in 1992, 1994, 1995 and 1997. An extremely favourable international environment accounted for larger foreign reserves. Terms of exchange have remained relatively stable, interest rates dropped and capital flows became increasingly global and international. These factors allowed for financing of a large trade gap. These wider options between 1991 and 1997 permitted progress, albeit slowly, toward diminishing the ratio of primary activities to GDP.

It is therefore particularly important to underscore that macroeconomic stability and good management of macroeconomic fundamentals (whether through industrialization-promoting policies or in an openly neoliberal framework) are necessary conditions to achieve the long-term objective of reaching a lower economic deindustrialization index on a sustained basis, thus improving standards of living.

Peru's case shows, though, that reducing the level of primary activities may occur more quickly if carried out through the active and deliberate design of industrialization policies, as was the case in 1971–75, 1979–81 and 1985–87, than if guided by the hand of free markets and liberalization, as occurred in 1991–97. The problem in the last 50 years stemmed from the lack of consistency and coherence between short-term macroeconomic management and industrialization policies, meaning that the type of industrialization policies implemented in Peru failed to prevent trade balance deficits.

4. UNCOUPLING DEMAND AND SUPPLY STRUCTURES, THE QUALITY OF ECONOMIC ACTIVITIES AND VIABLE ECONOMIC GROWTH

If a country increasingly produces goods with a lower level of processing, quality and value, and on the other hand consumes foreign goods that include a larger amount of knowledge, undoubtedly it will exchange growing amounts of simple goods for the same (or a smaller) amount of elaborate goods.

If domestic supply, including exports, shifts toward primary products with diminishing returns, simple processing or minimum know-how, while demand moves toward increased consumption of sophisticated, complex and always newer products, there will be a gradual uncoupling of quality and value between what the country produces and what it consumes. This uncoupling occurs because not all economic products and/or activities are alike. It is precisely the more elaborate goods or services that eventually translate into higher standards of living. Elaborate goods incorporate a higher degree of technology and knowledge, show positive externalities,

and generate a higher value and have a larger systemic and synergistic effect over the rest of the economy.

Conditions will deteriorate even further if the terms of trade fall because of market effects. Declining terms of trade implies prices of exported goods growing more slowly than the prices of imported goods. Although it is true that the terms of trade reflect a difference in the quality and value of economic activities, it is also true that these prices are subject to short-term fluctuations that are not related to these factors.

Short-term macroeconomic stability and the viability of long-term sustained growth become ever more complex if the uncoupling described above is reproduced in supply and demand patterns. This is true to the extent that in this kind of trade increasingly larger exports of simple products will be required to finance similar purchases of more elaborate goods, given the diminishing returns of the first type of products. If under those circumstances exports fail to grow, the emerging external account deficits will eventually hamper all attempts at sustained economic growth, as mentioned in section 3.2.

Depending on available resources and the country's capacity to produce an increasing amount of simple or primary goods, from a long-term perspective the nation will quite likely end up producing and working more but living under worsening conditions.

What evidence is there for Peru? Is the uncoupling of quality and value between supply and demand taking place already? How will this uncoupling hamper economic growth?

A review of the composition of Peru's domestic demand leads to the following remarks:

1. Figure 5.13 shows that imports as a percentage of domestic demand, after having plummeted to 16 per cent at the end of the 1980s, climbed back to 28 per cent in 1997, thus implying that in general, in the 1990s Peruvians consumed more imported goods as a percentage of their demand than in the late 1980s.
2. Table 5.7 shows that imports of durable and nondurable consumer goods followed by purchases of capital goods for industry recorded the largest relative share increase. These three items together accounted for 46.1 per cent of imports in 1997 while they were only 26.8 per cent in 1988, a difference of 19 percentage points.
3. On the contrary, the share of inputs and raw materials for industry fell from 43.4 per cent in 1988 to 28.7 per cent in 1997, about 15 percentage points less.
4. A flat review of the list of durable and non-durable inputs and of capital goods for industry shows that these goods incorporate relatively

Table 5.7   FOB imports by economic use

	US$ millions			Structure (%)		
	1988	1993	1997	1988	1993	1997
Consumer goods	273	934	1910	9.5	22.7	22.3
Nondurable	244	555	1107	8.5	13.5	12.9
Durable	29	379	803	1.0	9.2	9.4
Inputs	1593	1859	3437	55.6	45.1	40.2
Fuels, lubricants and related	253	322	780	8.8	7.8	9.1
Raw materials for agriculture	98	116	202	3.4	2.8	2.4
Raw materials for industry	1243	1422	2455	43.4	34.5	28.7
Capital goods	728	1143	2816	25.4	27.7	32.9
Construction materials	24	68	244	0.8	1.6	2.9
Goods for agriculture	40	37	28	1.4	0.9	0.3
Goods for industry	496	704	2037	17.3	17.1	23.8
Transportation equipment	168	334	507	5.9	8.1	5.9
Other goods	272	187	390	9.5	4.5	4.6
Total	2866	4123	8552	100.0	100.0	100.0

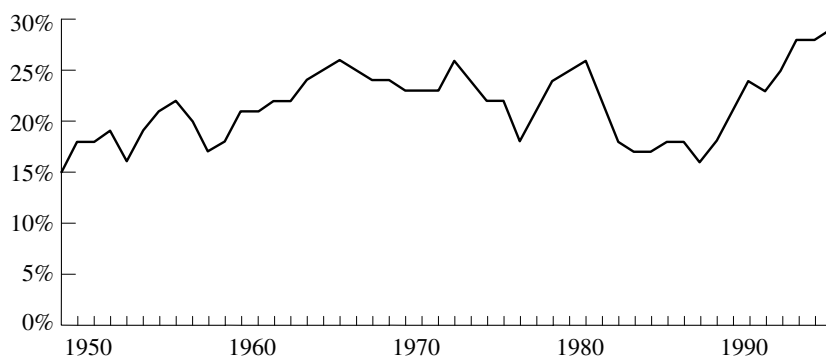*Source:*   Central Bank (Banco Central de Reserva del Perú). Prepared by the authors.

Figure 5.13   Import/domestic expenditure (%)

more knowledge and require a more complex technical manufacturing process, therefore pointing to a greater capacity to create value. On the other hand, raw materials for industry are less sophisticated and therefore create less value.

Some preliminary conclusions may be drawn from the above observations. First, Peru is increasing its demand for imported products. Second, if

we analyse the mix of imports, it becomes obvious that Peru is importing increasingly sophisticated products with a higher technology or knowledge component (durable consumer goods and capital goods for the industry) while imports of less sophisticated products continue to fall (imports of raw materials for industry). This means that the country increasingly buys abroad products of higher quality and value content that cost more.

Such a demand bias is a consequence not only of Peru's commercial and financial expansion but also of increased globalization and communications, which are promoting consumption of 'cutting edge' or 'innovative' products.

At the microeconomic level, this demand trend has been confirmed through household surveys that measure increasing ownership of electric appliances in recent years. For instance, colour TVs equipped with remote controls have progressively substituted for black and white television sets and those without remote controls. This is evidence of demand propensities for innovative and improved-quality products that are not produced internally but imported.

This type of phenomenon is not necessarily negative because progress always comes with increased demand for products that provide a higher level of comfort and quality. The problem emerges when the country lacks sufficient capacity to import. At the heart of the matter seems to be the capacity to produce and export goods that are 'similar in value and quality' to the imports. For this the quality structure of imports should match the value of exports. If this occurs, there is a circle of growth through international trade that in Graham's model leads to exchange among countries that specialize in activities with constant returns.

But if the structure of production and/or exports shows that production of primary goods with little or no incorporated knowledge continues to grow, that is of goods with little value added, it is obvious that Peru will have to work harder to meet the observed trend in demand patterns.

A review of the structure of domestic supply (section 3 in this essay) shows that liberalization in the 1990s led to a slower fall in economic deindustrialization when compared to the period of active industrial policy. On the other hand, industrial policies or free-market schemes that ignore basic macroeconomic principles will unfailingly abort if there is lack of coherence with fiscal, external and/or monetary balances.

Empirical evidence shows that when the market is left on its own, the economy will move toward producing slightly more elaborate non-tradable services due to growing demand by consumers, but will never manage to produce the industrial-type tradable goods that consumers demand. Thus, because the demand for manufactured goods cannot be met by domestic supply, those goods are imported. And because domestic production of

primary goods exceeds local consumption, they are exported. However, the process originates a growing 'uncoupling of quality and value' given that the world's demand for the goods Peru exports grows at a slower pace than its imports.

Figure 5.14 shows that Peru's terms of trade from the beginning of the 1950s to date fell toward the end of 1996 and in 1997 to a fifth of their value at the beginning of the 1970s and currently stand where they were in the mid-1950s.
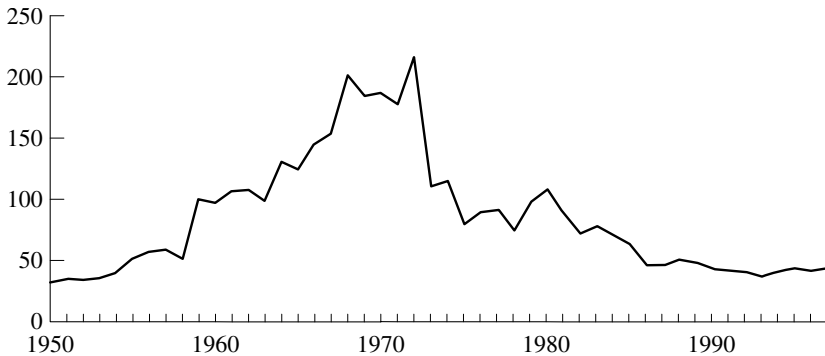

Figure 5.14   Terms of trade (1979 = 100)

This means that prices of exports since 1972 have grown considerably less (or have decreased) compared to the price of imports, leading to the most substantial fall in standards of living and income ever, excepting the periods from 1975 to 1977, and from 1979 to 1980. In other words the price of Peru's export products fall more or rise less than that of its imports, with the subsequent negative effect on domestic revenues and standards of living of Peruvians, who have to work more but are worse off.

The question then is, what caused terms of trade to improve in the 1960s and at the beginning of the 1970s and then decline since 1972.

An explanation may be that at the beginning of the 1960s given productivity levels and demand for materials, inputs and technology, there was an increase in demand and prices of minerals. In the 1970s, the world oil crisis led to radical technological changes in energy conservation and more efficient use of raw materials, which diminished demand and prices of raw materials. In the 1980s and 1990s, the communications, electronics and information revolutions introduced massive use of knowledge to produce goods in industrial countries that put Peruvian production and exports at a disadvantage because local industries were unable to incorporate new knowledge at the required speed.

Another hypothesis refers to the extremely poor management of fundamental economic balances since 1970 and the lack of a truly coherent industrial policy that would diversify the supply of exports and promote new activities for which world demand and prices would not fall steadily.

These are, however, hypotheses that must be explored further. The concrete fact is that Peru is not producing or exporting the types of good that would ensure and allow it to finance its new consumption structure, a structure that is constantly evolving as the world's demand fluctuates and changes.[10]

5.   WORK MORE AND LIVE BETTER: SOMETHING PERUVIANS HAVE YET TO ACHIEVE

5.1   Major Conclusions

This chapter has demonstrated that deindustrialization of economic activities is intimately linked to declining standards of living. For the period 1950–97, for each additional percentage point of deindustrialization, per capita consumption fell by 2.6 per cent while white-collar real salaries dropped by 5.4 per cent and blue-collar wages by 7.4 per cent. The impact on the manufacturing industry is just the opposite, since for each point of increased industrialization, per capita consumption grew by 4.2 per cent and white-collar and blue-collar earnings rose 10.6 and 15.5 per cent respectively (see section 3).

If wages, salaries and standards of living increased with growing industrialization, why has Peru not gradually moved toward the production of manufactured goods? The answer is three-pronged.

In the first place, Peru wrongly participates in the world economy basically as an exporter of raw materials and natural resources with diminishing returns.

Second, an erroneous industrial policy has favoured permanent protection for all types of industries aimed at producing final goods for the domestic market without link-ups to other processes and no learning curve. Technology was imported as a package revealing a static business view of the world. There was an insufficient emphasis on education, creation of value and training, few possibilities of tuning up to a broader market, a static rent-seeking attitude, and total disdain for 'merit-based' promotion. In addition, the government sector lacked synergies with private investment and failed to understand the critical role played by market forces. In summary, an industrial policy is illustrated by the slope of the PR_0 curve in Figure 5.15.
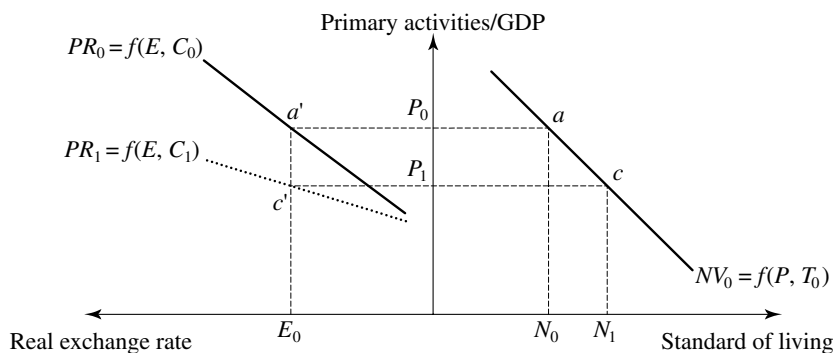
Figure 5.15   Exchange rate, deindustrialization and standard of living

Third, managing macroeconomic stability and fundamentals is extremely important. Section 3.2 proved that as the current account, government accounts and/or private deficits became unbearably large, a crisis emerged leading to the corresponding reversal of the industrialisation process.

If to these three characteristics we add events on the demand side, a rapidly deteriorating situation emerges. Section 4 showed how the structure of demand shifted toward consumption of foreign goods of higher quality, value, knowledge and technology. Moreover, if these changes in demand are accompanied by supply that continues to favour the production and export of primary goods, the country will inevitably end up with a 'value or quality mismatch'. It will end up working harder to earn the same units of imports. The country therefore specializes in producing and exporting goods with diminishing returns that are exchanged for products with increasing returns. As average productivity falls, so do standards of living (see sections 1, 3 and 4).

Our most important conclusion is that contrary to most neoclassical theory, we hold that growth and standards of living depend on the types of goods and services produced by a country. A country may master all the exogenous and endogenous factors that are responsible for economic growth as highlighted by neoclassical theory, that is, labour, capital, natural resources, savings, investment, technology, efficient use of resources, financial markets, infrastructure, sound macroeconomic indicators, efficient government and so on. However, if all these elements are directed toward producing the wrong types of products, the nation may end up working harder and living worse off.

5.2   A Framework to Design a Strategy for Growth and Increasing Standards of Living

Peru needs to devote time and energy to 'rethink' or review the goods it produces. Figure 5.15 provides a good initial framework for this analysis. The right-hand quadrant shows the reverse postulated relationship between deindustrialization[11] (primary activities/GDP) and standard of living. The left-hand quadrant shows the positive relationship between the real exchange rate and the deindustrialization ratio, as explained in Figure 5.7 in section 3.1.

Line NV graphs the negative impact of primary activities on standard of living. It has as implicit parameters a given level of technology, productivity, returns to scale, externalities and other elements that may be grouped as factor T. Likewise, line PR describes the positive impact of the real exchange rate on deindustrialization. It involves parameters related to the type of participation in the world economy and the country's industrial development policy, which depend on the varying focus on the domestic or external markets. These parameters are summarized by factor C. Thus, for instance, if the country's participation in global trade is based on using natural resources or if the national industrial strategy is basically directed toward its domestic market, PR's slope increases. On the contrary, if industrialization shifts toward promoting manufacturing exports, the slope drops (PR_1 in Figure 5.15).

A close look at these relationships reveals that standards of living would increase, *ceteris paribus*, by developing an outward industrialization process, which would imply a change in the type of participation in the international economy. In terms of Figure 5.15, line PR_0 would shift downward to PR_1 when the strategy to participate in the world economy moves away from the advantages derived from natural resources to the dynamic competitive advantages provided by manufacturing (from C_0 to C_1). Under these circumstances, given a certain real exchange rate (E_0), deindustrialization will fall from PR_0 to PR_1, from a' to c', and standards of living would increase from N_0 to N_1 sliding along the NV_0 curve, from a to c.

Alternatively, we could introduce a qualitative transformation in primary activities to gradually include technological development in them. Line NV_0 would move to the right, to NV_1 (see Figure 5.16). For the same level of deindustrialization (P_0), the population's standard of living would rise from N_0 to N_1.[12] Technological upgrading (from T_0 to T_1) in agriculture and mining, for instance, would improve standards of living, given a certain level of primary activities. For this process to be sustainable, technological progress in these primary activities would have to occur on an ongoing basis in order to set off the eventual negative weight of diminish-
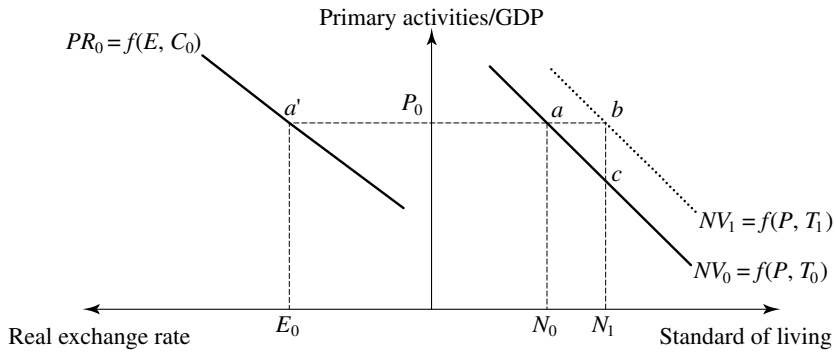
Figure 5.16   Exchange rate, deindustrialization and standard of living
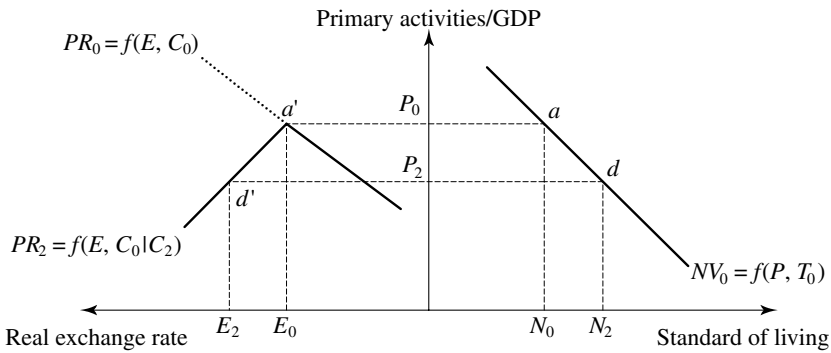

Figure 5.17   Exchange rate, deindustrialization and standard of living

ing returns in extractive activities, if this variable is effectively the key factor separating industrial from extractive processes.[13]

A third option, much in the style of countries with large endowments of natural resources such as Australia, New Zealand and Canada, is to resort to primary comparative advantages at relatively low real exchange rate levels while promoting manufacturing exports at higher real exchange rates.[14] In terms of Figure 5.17, this would mean that PR would be a kinked, upside down V, so that at low exchange rates, below E_0, deindustrialization would increase. Conversely, with higher rates of exchange, above E_0, deindustrialization would fall. The fundamental precept is to curtail total specialization on primary resources and thus prevent the spreading of this sector's diminishing returns throughout the economy.[15]

In this case, by shifting parameter C from C_0 to C_2, starting at point a', an increase of the exchange rate above E_0 would lead to a declining

deindustrialization quotient and to increased industrialization. For this reason, given an E_2 exchange rate, if manufacturing output has been efficiently directed toward either the external or domestic market, manufactured products would be competitive and primary products would be significantly profitable. However, the higher profitability of the primary sector would have to be offset to prevent new entrants or expansion of incumbents in areas of diminishing returns. Countries with abundant natural resources that have successfully increased their population's living standards generally have regulated and restricted the use of their resources for both strategic and environmental reasons. In this case, developing a complementary manufacturing sector with either an inward or outward orientation depending on the size and volume of the market is crucial for any such economy to improve its standards of living.[16]

Obviously, it is possible to combine the three approaches mentioned above or try other paths that will modify the implicit parameters on both the left and right quadrants.

One initial proposal for Peru is to devote itself to primary activities at low real exchange rate levels, preventing the country from entering into areas with diminishing returns when the real exchange rate increases. As the real exchange rate rises, it should speed up promotion of a strong export-oriented manufacturing sector very much in the style of the inverted V curve shown in Figure 5.17. Rents should be extracted from primary activities when real exchange rate increases like in Canada, Australia and New Zealand, as a way to limit their expansion and address environmental concerns. The other two approaches, shown in Figures 5.15 and 5.16, could also be followed but with much more limited results.

5.3   Free Markets and Strategic Supply Policies in a Global World

How should Peru then face the new era of globalization and free trade that is promoted by multilateral organizations and the industrial economies?

Assuming that open markets by themselves will automatically lead Peru to the kind of specialized productive structure implicit in point d' of Figure 5.17 is a fallacy that was tested in the liberalization of the 1950s and 1990s. On the other hand, assuming that any kind of industrial policy will ensure that this path will be followed is another fallacy tested in the 1960s, 1970s and 1980s. Peru needs to design productive strategies that will consciously and deliberately allow it to 'create' and 'ensure' permanent increasing returns and dynamic competitive advantages over time, by producing higher value goods and services and maintaining well-balanced macroeconomic fundamentals.

Peru must therefore enter the new global and trade era not necessarily following the dictum of multilateral organizations and developed economies but ensuring the production of those goods and services that will generate faster growth and increased standards of living.

Neither free trade and free markets *per se* nor industrial and commercial policies that are inconsistent with market forces will prove successful in this venture. To improve Peru's standards of living it is essential to combine strategic policies and market orientation in order to create dynamic competitive advantages in the production of high value, high quality goods.

NOTES

*   A draft of this chapter was presented at the International Conference on 'Globalisation and Marginalisation in the 1990s: An Evolutionary and Activity-Specific Perspective', organized by SUM (Centre for Development and the Environment), University of Oslo, and Norsk Investorforum, Oslo, 5–6 September 1998.
1. Rosenthal (1996) provides a historical overview of how development ideas and policies have evolved in Latin America in the last half century.
2. Almost all classical and neoclassical international trade theory – from Adam Smith and David Ricardo to the present – is based on the assumption that constant returns and perfect competition will prevail. From this we can infer that under these conditions international commerce will benefit all nations. In the 1980s Krugman focused on part of Graham's work to redesign the whole theory of trade under the assumption of increasing returns and verified that in this case trade would also benefit all countries. However, as pointed out by Reinert (1996), Krugman failed to consider the possibility that one country would show increasing returns and the other decreasing ones, in which case the former becomes richer and the latter poorer, as demonstrated by Graham in 1923.
3. If undertaking an economic activity results in knowledge used by other sectors without payment, Grossman argues, the industry will produce a marginal social benefit or will generate positive externalities that spread to the rest of the economy. In such cases there should be in theory some subsidy mechanism to allow the high-technology industries (for example, biotechnology, electronics, the space industry) to capture some of those social benefits and thus further foster its own development (Grossman 1991). In the case of oligopolistic industries, given the small number of companies that trade on a world scale, windfall profits are a logical consequence. Under such circumstances a country may subsidize its own company to push other countries' companies out of the market, a practice commonly called 'strategic commercial policy'. However, such a policy may unleash a trade war if all the other countries react likewise (Brander 1991). Despite these arguments, the fundamental implications for economic policy derived from such proposals are still valid. Thus, for instance, it is held that no conclusive empirical evidence allows that markets will necessarily fail. And even if this were true, the criteria selected to foster new activities are not clear, nor is there sufficient information to evaluate and determine what industries should be promoted. Finally, it is also held that this policy is not free from various pressures that would, in the best of cases, hamper final decisions (Grossman 1991).
4. The annual average growth rate was computed from the $ln\,(Y) = a_0 + a_1 *$ time regression where the a_1 coefficient is the annual average rate for the period under consideration. Prepared by the authors.
5. More recently, the Organization for Economic Cooperation and Development (OECD 1992) suggested a difference between supplier-driven activities, economy-of-scale

intensive activities and those based on science. However, so far national statistics bureaus continue to use the International Industrial Uniform Classification presented in Tables 5.1 and 5.2 and proposed by the UN.

6. Obviously, this classification implies some oversimplification that must be corrected in later work. For instance, the garment and electronic industries are not comparable from a qualitative viewpoint for their effect on technological development, use of R&D, level of salaries, economies of scale, externalities and so on. Likewise, there is a substantial difference between extensive agriculture, and capital- and technology-intensive mining or fisheries. Despite these constraints, this type of classification makes it possible to establish the differences between and quantify those activities that generally allow a nation to reach increasing returns compared to those where only diminishing returns are possible if we follow Ricardo's terminology.

7. Impact is statistically significant only at 5 per cent per capita consumption but not for earnings, where statistical significance starts at 15 per cent.

8. A broader view integrating political and social factors other than purely economic considerations can be found in Gonzáles de Olarte and Samamé 1991.

9. Insufficiency of foreign currency reserves can be partly accounted for by excess domestic demand, which in the periods before the adjustment grew more than GDP. An important factor generating this growth of demand is obviously the increased private consumption, meaning that such swings are also explained by increased standards of living that create bottlenecks in the external sector. Of similar importance is the adverse impact of external shocks, such as falling terms of trade or higher international interest rates during the 1980s. Thus, for instance, a drop in terms of trade in 1975 (-31 per cent), in 1981 and 1982 (-32 per cent) and again in 1986 (-27 per cent) also had a substantial impact on the trade balance and the amount of net foreign reserves which eventually sparked the stabilization programmes.

   The gap model used for Peru (Canales and Fairlie 1996) covering a period of 20 years shows that external constraints were the basic factor limiting growth. This occurred even in the 1990s despite capital inflows, which did not necessarily lift the restriction but may have offset it temporarily, an effect similar to that of increased foreign flows during the 1970s.

10. A review of Japanese experience from 1950 to 1970 shows that the key to higher exports is found not only in Japan's ability to produce better-quality exports but principally in its capacity to adjust its export mix by introducing goods for which world demand was growing. In other words, Japan stopped producing and exporting those goods for which the world's demand was falling and which therefore had lower value, and shifted towards production of goods in greater demand.

11. The relative importance of manufacturing can be measured by moving in the opposite direction (downward) along the axis.

12. Technological change probably will turn PR_0 around point a, slightly increasing the impact of the real exchange rate on the degree of deindustrialization.

13. We must bear in mind that a key element separating primary from manufacturing activities is the former's diminishing returns and the latter's increasing returns.

14. It is also possible to develop a manufacturing sector on the bases of the internal market if this is sufficiently large to benefit from economies of scale as Friedrich List proposed in the nineteenth century.

15. Total deindustrialization, as depicted in Figure 5.17, would appear if we continue along the PR_0 dotted line, given parameter C_0.

16. Developing the internal market might be a second option but its success will depend upon its openness, size and competitive arrangements.

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APPENDIX: GRAHAM'S MODEL

In an initial situation of autarky (case 1), Country A produces and consumes 800 units of wheat and 800 units of watches. Average productivity of both activities is 4 units per worker-day and the labour used in each activity is 200 worker-days.

Country B produces and consumes 800 units of wheat and 600 units of watches. Wheat productivity is 4 units per worker-day and that of watches is 3 units per worker-day. Each activity employs 200 worker-days.

Based on these assumptions, the world's wheat production would be 1600 units and 1400 watches, or a total production of 3200 units in wheat terms, given the relative price of the two products. Country A's product is 54 per cent of the world's production (or 1714 wheat units) while Country B accounts for 46 per cent of the total (or 1486 wheat units).

Case 1: Without Trade

	Country A			Country B			World
	Man-days	Output-man	Product	Man-days	Output-man	Product	Product
Wheat	200	4	800	200	4	800	1600
Watches	200	4	800	200	3	600	1400
Total	400			400			

Price: 1 wheat = 0.875 watches.

Product**	(%)
Country A	1714	54
Country B	1486	46
World	3200	100

Note: ** In wheat terms.

When opening trade (case 2), and given their respective comparative advantages, Country A specializes partially in watch making while Country B turns to wheat production. Presumably, Country A will transfer 100 worker-days from wheat cropping to watch making, while country B transfers labour in the opposite direction, that is, from watches to wheat.

Since both activities show constant returns, the world's watch output should increase by 100 units while wheat production remains stable.

Consequently, global world production in wheat terms grows by 114 units, or 3.6 per cent.

Increased world production (equivalent to the added balance of commerce between the two countries) is distributed equally, thus demonstrating that the specialization through trade, given each nation's comparative advantages, is beneficial for both countries, to the extent both activities show constant returns.

Case 2: With Trade and Constant Returns to Scale

+ Specialization by comparative advantage
  Country A transfers workers from wheat to watches
  Country B transfers workers from watches to wheat
+ Constant returns in both activities

	Country A			Country B			World
	Man-days	Output-man	Product	Man-days	Output-man	Product	Product
Wheat	100	4	400	300	4	1200	1600
Watches	300	4	1200	100	3	300	1500
Total	400			400			

Price: 1 wheat = 0.875 watches

Product**		(%)	(+/−)	(+/−)%var
Country A	1771	53	57	3.3
Country B	1543	47	57	3.8
World	3314	100	114	3.6

	Country A			Country B			World
	Domestic demand*	Product	Trade balance	Domestic demand*	Product	Trade balance	Trade balance
Wheat	800	400	(400)	800	1200	400	0
Watches	800	1200	400	600	300	(300)	100
Total**	1714	1771	57	1486	1543	57	114

Notes:
* Production before trade.
** In wheat terms.

However, if wheat has diminishing returns, and watches increasing returns (case 3), international trade, based on comparative advantages, will be beneficial only for Country A, that is, product will grow by 16.3 per cent when compared to the autarchic situation, while B will suffer from a 13.9 per cent decline in production.

In this example, the world's wheat production drops by 100 units, and that of watches grows by 150 units. Consequently, product and world trade, in wheat terms, will grow in 2.2 per cent (or 71 units).

Graham's model predicts that the country specializing in production of goods with diminishing returns will experience both a drop in its GDP and a trade gap. Just the opposite will happen to the country specializing in goods with increasing returns.

Case 3: With Trade: Wheat Diminishing Returns and Watches Increasing Returns

+ Specialization by comparative advantage
   Country A transfers workers from wheat to watches
   Country B transfers workers from watches to wheat
+ Increasing returns in watches and diminishing returns in wheat

	Country A			Country B			World
	Man-days	Output-man	Product	Man-days	Output-man	Product	Product
Wheat	100	4.5	450	300	3.5	1050	1500
Watches	300	4.5	1350	100	2	200	1550
Total	400			400			

Price: 1 wheat = 0.875 watches

Product**		(%)	(+/−)	(+/−) %var
Country A	1993	61	279	16.3
Country B	1279	39	(207)	−13.9
World	3271	100	71	− 2.2

	Country A			Country B			World
	Domestic demand*	Product	Trade balance	Domestic demand*	Product	Trade balance	Trade balance
Wheat	800	450	(350)	800	1050	250	(100)
Watches	800	1350	550	600	200	(400)	150
Total**	1714	1993	279	1486	1279	(207)	71

Notes:
* Production before trade.
** In wheat terms.

If one of the activities shows either increasing or diminishing returns, trade will hurt one of the two countries. In other words, trade will not be equal if there are differences in returns.

Should wheat have diminishing returns and watches constant returns (case 4), trade specialization reduces Country B's GDP, leading to a trade gap. That is, trade will adversely affect the nation with the comparative advantage in the good with diminishing returns.

The world's production would grow very slightly, and so would commercial exchanges, and, in general, the gain in Country A almost equals Country B's loss.

Case 4: With Trade: Wheat Diminishing Returns and Watches Constant Returns

+ Specialization by comparative advantage
   Country A transfers workers from wheat to watches
   Country B transfers workers from watches to wheat
+ Constant returns in watches and diminishing returns in wheat

	Country A			Country B			World
	Man-days	Output-man	Product	Man-days	Output-man	Product	Product
Wheat	100	4.5	450	300	3.5	1050	1500
Watches	300	4	1200	100	3	300	1500
Total	400			400			

Price: 1 wheat = 0.875 watches.

Product**		(%)	(+/−)	(+/−) %var
Country A	1821	57	107	6.3
Country B	1393	43	(93)	−6.2
World	3214	100	14	0.4

	Country A			Country B			World
	Domestic demand*	Product	Trade balance	Domestic demand*	Product	Trade balance	Trade balance
Wheat	800	450	(350)	800	1050	250	(100)
Watches	800	1200	400	600	300	(300)	100
Total**	1714	1821	107	1486	1393	(93)	14

Notes:
* Production before trade.
** In wheat terms.

If watch production shows increasing returns and wheat production constant returns (case 5), the final result will be quite similar to the previous example, since the production in Country B will fall and in Country A it will grow. A's trade balance will show a surplus while B's will be negative.

In spite of this similarity, the world's product and commercial trade will grow more than in the previous case.

Case 5: With Trade: Wheat Constant Returns and Watches Increasing Returns

+ Specialization by comparative advantage
    Country A transfers workers from wheat to watches
    Country B transfers workers from watches to wheat
+ Increasing returns in watches and constant returns in wheat

	Country A			Country B			World
	Man-days	Output-man	Product	Man-days	Output-man	Product	Product
Wheat	100	4	400	300	4	1200	1600
Watches	300	4.5	1350	100	2	200	1550
Total	400			400			

Price: 1 wheat = 0.875 watches.

Product**		(%)	(+/−)	(+/−) % var
Country A	1943	58	229	13.3
Country B	1429	42	(57)	−3.8
World	3371	100	171	5.4

	Country A			Country B			World
	Domestic demand*	Product	Trade balance	Domestic demand*	Product	Trade balance	Trade balance
Wheat	800	400	(400)	800	1200	400	0
Watches	800	1350	550	600	200	(400)	150
Total**	1714	1943	229	1486	1429	(57)	171

Notes:
* Production before trade.
** In wheat terms.