

# Before the Golden Age Economic Growth in Mexico and Portugal, 1910–1950

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**The Decline of Latin  
American Economies  
Growth, Institutions,  
and Crises**

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## 2.1 Introduction

During the interwar period some countries of the world periphery, in particular in southern Europe and Latin America, experienced relatively high rates of economic growth, which helped pave the way to the golden age of growth in the three decades following the end of World War II. Economic growth in the periphery during the interwar period has still not received the attention it deserves, but its analysis is of utmost importance to understand what drives economic growth and structural change in less developed economies. The fact that growth occurred during a period of receding international transactions is not compatible with many growth theories that focus on the benefits of international trade and specialization according to a country's patterns of comparative advantage.<sup>1</sup> Inward-looking growth during the interwar period was a direct consequence of the slowing down of the development of the international economy, as well as of international trade, capital flows, and emigration.

The countries studied in this chapter—Mexico and Portugal—stand out as two examples of positive economic performance during the interwar period.<sup>2</sup> The growth of these two economies was driven by structural change at the aggregate national economic level as well as at the level of the agrar-

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1. For the most recent revisions of openness and growth theories, see for all Clemens and Williamson (2004).

2. See Cárdenas (1997, 2004), Haber (1990) and Bortz and Haber (2002) for Mexico, and Batista et al. (1997) and Lains (2003a, 2003c) for Portugal.

ian or the industrial sector. In other words, the share of the industrial sector in total output increased, and within agriculture and manufacturing there was also an increase in industries with high levels of factor productivity.<sup>3</sup> Such a pattern of structural change was a consequence of a series of favorable factors. First, thanks to the industrialization in the previous period, the two economies had already achieved, by around 1910, a minimum level of infrastructural as well as industrial development, upon which further advancements were based. Second, another crucial factor that enabled those changes was excess capacity, revealed in both the industrial and the agrarian sectors. Third, after the turn of the century, investment in physical capital continued to rise, thanks to the growth of domestic savings and capital imports. Fourth, domestic demand expanded and monetary and exchange rate policies eased the conditions of financing the current account deficit. The main difference between the interwar period and other periods of globalization backlash or receding international economic conditions—namely in the decades after 1973, in Portugal, and after 1982, in Mexico—was the fact that protection was obtained by exchange rate devaluation, and thus tariffs and economic policies were not biased against the export sector.<sup>4</sup>

The political histories of Mexico and Portugal differ in many important ways, and that is reflected in their economic history as well. Mexico gained its independence in 1821 and started the liberal era with a strong surplus in her government and external accounts (for most of the nineteenth century, Mexico had a surplus in her balance of trade). Portugal lost her Brazilian colony in 1822, and throughout the rest of the century had trouble in financing the government and external accounts, and was largely dependent on capital imports and emigrant remittances for that purpose. The two countries also differed markedly in terms of demographic patterns, as Mexico had rates of population growth that were double those of Portugal. Mexico was—and is—a larger country, with a larger economy and a large natural resource base. The list of differences is, of course, unlimited (as for any set of countries). Yet the two countries had some relevant similarities, too. The two most important in terms of the present comparison is, first, that by 1910 they had similar income per capita levels and, second, that their economies were much influenced by what happened in their larger and more industrialized neighbors, respectively, the United States and the

3. Brazil stands out as a case with some similarities with the two countries studied in this chapter, as it also followed a pattern of inward-looking economic growth and structural change during the interwar period. Brazil was Portugal's most important colony for a long time, but the linkages between the two economies were historically weak, except for the role of emigrant remittances in Portugal's balance of payments from the 1870s to the 1920s. On Brazil see Cortés Conde (1992) and Coatsworth and Taylor (1998). See also Haber (1997) and Hofman (2000).

4. On the effects of exchange rate devaluation, see Campa (1990) and Eichengreen and Sachs (1985).

European powers. The study in this chapter questions some views about long-run economic development that have dominated the economic historiography of both Mexico and Portugal. In fact, many would argue that economic growth and industrialization gained momentum in the two countries only after World War II and as a consequence of the opening up of their economies to positive influences of growth from their more developed neighbors.

This work is a contribution to the exploration of the causes of economic growth in the periphery of the industrialized world during the interwar period. Economic growth in the two countries here studied was marked by a path of intensive structural change at the national and industrial levels. The comparative study of the organization and structure of industry is crucial to understand such processes.<sup>5</sup> The available data is not sufficient to endeavor in detailed analyses of total factor productivity, but the observed changes in the structure of output and labor input enlighten the most important factors behind interwar growth. The chapter is structured as follows. The next section briefly presents the historiography of economic growth in Mexico and Portugal. Section three presents the data on output growth, structural change, and labor productivity growth. Section four shows how structural change was driven by domestic demand and how labor productivity gains were achieved in the process. Section five concludes.

## 2.2 The Historiography of Backwardness and Growth

The distinction of center and periphery is a useful tool for many typologies of growth and retardation, from Gerschenkron (1962) to Abramovitz (1986) and the studies on convergence that followed. That distinction implies that we ask why backward countries in the periphery did not follow more closely the pattern of growth of the forerunners in the center. Such typologies have been used to study the development of both the European and the American economies in the last two centuries, and we have gained many insights in understanding why the Latin American countries failed to follow more closely the speed of economic growth in the United States, or why countries in southern Europe lagged behind the pace of the economic development of their northern neighbors. The understanding of economic backwardness in the peripheries of the two fastest-growing regions of the world can be enhanced by comparing their respective experiences.

Historical explanations for economic retardation in Mexico and Portugal have some common features. First, economic backwardness is associated by many historians of both countries with the consequences of eighteenth-century institutions that constrained growth. For Mexico, Coatsworth (1978, 90–91) summarizes those interpretations quite clearly:

5. See Haber (1989, 9).

“three main obstacles to economic growth have been postulated to explain Mexico’s relative backwardness at the end of the colonial period: Spanish colonial rule, the system of land tenure, and the Roman Catholic Church.” Historians have for a long time held that Portugal’s economic backwardness was a consequence of the Church and the imperfect property rights that prevailed in the Ancien Régime. Colonial rule ended in Mexico about the same time that Portugal lost Brazil, in 1821 and 1822, respectively. The two countries were part of the same historical process, which was a consequence of the Napoleonic wars and the liberal revolutions in Portugal and Spain.<sup>6</sup> According to Coatsworth (1978), Mexico’s colonial heritage was almost completely eliminated after independence, except for two remaining negative factors—inadequate transport and inefficient economic organization, or geography and feudalism.<sup>7</sup> Engerman and Sokoloff (1997), however, argue that the extremely unequal social structure of the colonial period did not disappear after independence, and that it had a negative impact in the development of the Mexican economy in the nineteenth century. Portugal’s Ancien Régime was also slow to die out, and one could argue that the lack of transport infrastructures and the institutional framework, particularly concerning property rights, were among the most important heritages from the eighteenth century that influenced economic performance in the nineteenth century. Thus, in both Mexico and Portugal, liberation from colonial power and from the Ancien Régime, respectively, did not have an immediate impact, and the obstacles to economic growth that those systems imposed were only slowly removed.

How were those obstacles overcome? Three interconnected factors emerge in the historiography of both countries: political stability, railways, and capital imports. In Mexico, those factors gained increasing relevance during the Porfiriato era, from 1876–1911, when political stability was gradually attained. In Portugal there also was an increase in the level of political stability in the second half of the nineteenth century, which allowed a consolidation of the power of the State. Thus, governments in both countries gained strength to intervene in the economy and to invest in social overhead capital that was partially financed by capital imports.<sup>8</sup> The fact that two countries in such different parts of the world had such common patterns in their political history is no coincidence. Both were affected by the turmoil provoked by the revolutionary period following the French wars and the independence of the Latin American colonies. Liberalism ensued in the Iberian Peninsula and Latin America, but it took a long time for the new constitutional order to consolidate. That consolidation was to a large extent stimulated by the benefits of an increasing participation in

6. See for Portugal Lains and Silva (2005, vol. 1).

7. See also Cárdenas (1997) and Maurer (1999).

8. See Lains and Silva (2005, vol. 2).

the international economy, which expanded faster after midcentury, particularly since around 1870.

Thus, the increasing pace of growth and development in Mexico and Portugal derived directly from their participation in the international economy through exports, capital imports, and, in the case of Portugal, through emigration. Yet, in the last quarter of the nineteenth century, Mexico outperformed Portugal. Part of Mexico's better performance after 1870 was probably due to the fact that the depression of the first half of the nineteenth century was more severe than in Portugal. Coatsworth (1988) has estimated a decline of about thirty percent in per capita income between 1800 and 1860. Portugal also had a bad period before 1870, but not as bad as Mexico. In any case, the fact was that Mexico caught up to Portugal's level of income per capita in 1913 (see section three, following). Mexico's faster per capita income growth since 1870 was also related to the fact that it had a higher availability of natural resources. Mexico was rich in terms of land, silver, and copper, which allowed the growth of a wider range of sectors with high levels of factor productivity.<sup>9</sup>

Liberalism in its different forms ended in both countries in 1910, and the following decade was one of relative economic stagnation. The 1910 Mexican Revolution was considerably more severe than the one that occurred in Portugal in the same year, and it evolved into a civil war with an immense death toll. In 1917, a new Constitution was an important turning point for political stabilization in Mexico, but complete peace came only by the end of the 1920s. In the case of Portugal, the consequences of the 1910 Revolution, which ended the monarchy and installed a Republican regime, were eventually overshadowed by the outbreak of World War I and by the participation of Portugal in that war, starting in 1916.

The extent of the impact of the civil war in the Mexican economy is, however, under revision. Haber and Razo (1998, 481–82), for example, do not agree with the contention that “the Porfirian boom was followed by a period of relative economic stagnation during the Revolution and post-revolutionary years [and that] it was not until the mid-1930s that growth again reignited, led by import substituting industrialization and government intervention designed to overcome market failures.”<sup>10</sup> Their analysis of productivity growth in the Mexican textile industry shows an altogether different pattern. In fact, they conclude that productivity in the textile sector expanded rapidly during the Porfiriato era, in particular after 1890, and

9. See Hofman (2000, 8–11).

10. Razo and Haber (1998). The authors add that such a definition of the pattern of Mexican economic growth is based on slim evidence, namely estimates of national income by Banco de México, which they do not fully trust. We should add, though, that the description they provide is also based on an incorrect interpretation of the same estimates. In fact, the peak-to-peak analysis presented in table 2.1 show that the 1910 Revolution was followed by recovery, with a peak in 1926, and that the downturn happened well before the 1929 crash and the Great Depression. See also Haber and Razo (1998).

that it was only temporarily affected by the revolution. Moreover, productivity growth trends recovered in the following decades and were not affected by the Great Depression. The impact of the revolution was only temporary because the revolutionary wars did not affect to a considerable extent the existent stock of capital. Moreover, the change in the labor regime imposed by the revolution (the eight-hour day and collective contracts) led to the substitution of capital for labor and thus to an increase in capital-output ratios, which impacted positively on labor productivity growth. The authors argue that proximity to large urban markets had a positive impact on factor productivity of the textile industry, as it allowed the specialization on "high value, fine weave textiles" (Haber and Razo 1998, 506). It is important to note that external factors are not considered important in this analysis: changes in tariff protection, devaluations, export prices, and capital imports do not seem to be relevant in explaining the development of factor productivity in the most important sector of the Mexican economy throughout almost a century. Instead, economies of scale and proximity of large urban markets appear as the relevant factors. Part of the conclusions regarding Mexican textiles can be extended to the rest of the industrial sector.

The impact of the 1910 Revolution on Mexican agriculture may have been quite different. Sandos and Cross (1983) estimated a decline of fixed assets value in agriculture in northern Mexico of between 50 and 75 percent. There were also important changes in the structure of land ownership in favor of laborers which affected investment levels in agriculture. In the North, the response to the decline in investment and output was emigration to the irrigated fields of California as well as to Mexico City and other urban centers. Emigration across the border was, however, stopped in 1929, and many Mexican laborers were repatriated from the United States. The increase in the rural population compelled the government to implement a system of land distribution, which, according to Sandos and Cross (1983), had a negative impact on agrarian productivity.<sup>11</sup> That negative trend was reversed in the 1940s with the resurgence of emigration to the United States and the increase in American investment in Mexico.<sup>12</sup> This became known as the "Green Revolution," which complemented the high growth rates in the industrial sector to accomplish the Mexican economic miracle from 1945 to 1965. During the years 1949 to 1955 investment expanded rapidly and at even higher rates in agriculture than in industry,

11. Navarrette (1959) has a different perspective on the impact of the agrarian reform. According to him, the redistribution of land was accompanied by an increase of investment pushed by loans by Banco de México, the central bank founded in 1925, and public works of irrigation, starting in 1926. In the same year an agrarian mortgage bank was founded.

12. The relations between Mexico and the United States were stressed by the nationalization of the oil fields and railways in 1937–1938, but after World War II the United States conformed to the new policies, due to its need to improve its relationship with its southern neighbor.

although the growth of industrial output was higher (Navarrete 1959). Recovery in the 1930s was in part due to President Lázaro Cárdenas' macroeconomic management that paved the way to stable macroeconomic policies that lasted until the 1970s—the “desarrollo estabilizador” period (see Sandos and Cross [1983] and Cárdenas [1997]).

Mexican industrial growth that occurred during the 1930s was led by import substitution. Cárdenas (1997) asks, though, how did that happen in the context of the negative impact of the Great Depression, which was translated into the contraction of external demand and a fall in terms of trade. He concludes that rapid industrial growth was made possible by the convergence of three factors. First, economic policy was flexible as it adjusted to changing conditions in the product and monetary markets. Money supply was increased, the exchange rate was left to float, and the government ran budget deficits. In short, economic policy was counter-cyclical. Second, due to devaluation, the relative prices of imports increased, which promoted import-substitution. Third, the industrial sector responded to changes in relative prices because it had excess capacity that had developed in the previous decades as a consequence of favorable trends in investment and the supply of labor.<sup>13</sup>

The alternative of specialization toward exports would have brought positive effects in the case of Mexico, given that it would allow the full utilization of underused capacity in the industrial sector. This was a major problem, according to Haber (1989, 39–43), because of the large share of large-scale manufacturing units in the Mexican industrial sector. But, according to the same author, “Mexican industrialists tried to pursue that strategy” (1989, 39) but did not succeed, and the reasons for the failure are most relevant here. Haber (1989) points out the fact that Mexico was relatively isolated from the outside world because of high transport costs, which derived from its geographical location. Most industrial production occurred inland around Mexico City, and the country had few maritime ports and no merchant marine. Moreover, moving produce to the sea was expensive, even after the railway network was accomplished. A further problem mentioned by Haber (1989) was the fact that Mexican industrialists had to compete with output from neighboring countries who produced similar products. Due to high transport costs across the major industrial nations of Latin America, regional or country specialization was low, which implied a small basis for exchange of industrial products. And this was not substituted by increasing trade with the United States and Europe, because competition for industrial products was very hard in those markets.

In Portugal, the interwar period was marked by large government and foreign deficits, high inflation, and exchange rate devaluation.<sup>14</sup> The 1910

13. See also Cárdenas (2004).

14. For what follows see Lains (2003c) and Lains and Silva (2005, vol. 3).

Revolution was the ultimate consequence of the instability that dominated political life there in the last years of the liberal monarchy. The revolution, however, did not put an end to that instability, because instability was not due to the constitutional form of political regime or of government, but to the fact that a substantial proportion of the population was disenfranchised and did not have access to power—a problem which Portugal had in common with Mexico. Whatever the reasons, political instability was aggravated by the advent of World War I; its impact on the Portuguese economic and financial situation derived from the adverse conditions in the international economy. The direct participation of Portugal in the war increased the burden on the economy. The participation in the war was financed by printing money and raising loans from the British government, and an aggravated government deficit was added to the deficit in the external accounts. Financial distress translated into inflation, one of the highest in Europe at the time, and exchange rate depreciation. Financial instability was not fully controlled because of the lack of political power of successive governments; the first Republic ultimately fell with another military coup, in 1926, that paved the way for Salazar's dictatorship. Monetary and exchange rate stability was recovered in 1924, briefly interrupted, and finally consolidated from 1928 onward.

The high levels of instability in Portugal during the 1920s have been closely identified with economic depression by many historians. Increasing public debt and large government deficits, together with high levels of price inflation and steep devaluation of the escudo, were the consequence of both the financial effort to participate in the war and of the contraction of export revenues and taxes. However, such imbalances were ultimately followed by economic recovery in response to increasing levels of protection and state intervention. The developments described earlier are fully recognized in Portuguese political historiography, most of all because they go together with the development of the institutional framework associated with the dictatorship and its quasi-fascist nature. However, historians—economic and otherwise—have paid more attention to the financial world and its distresses, as well as to the overall backwardness of the country, failing to recognize the important elements of growth and structural change that were occurring simultaneously. For a long time, too much attention has been paid to political factors in the explanations of economic performance in Portugal.<sup>15</sup>

Economic policy helped in shaping the international specialization and the structure of the two economies, but it was certainly not the only factor and probably not the most important. As a matter of fact, the 1920s were years of economic growth for Portugal, as shown by data on the evolution of national income. Growth in this period was marked by the growth of in-

15. For Mexico, see Cárdenas (1997, 7).



vestment in physical and human capital and by import substitution, in both the agrarian and the industrial sectors. Part of this investment was financed by the repatriation of capital, which had flown the country during the war, and contributed to the financing of the current account. In fact, the 1920s saw many positive developments in the agrarian and industrial sectors. In agriculture, there was an increase in the area under acreage, particularly in the wheat fields of the south. Moreover, there was an increase in the sectors of transformation of primary products, namely flour, as well as of the industries that catered to the primary sector, namely chemical fertilizers. There was also an expansion of other industries, including large-scale industries. This process proceeded during the 1930s and also during World War II. Portuguese exporters benefited from the country's officially neutral position and exports of canned fish and minerals boomed, for a considerable gain for the industrial sector.

Mexico and Portugal thus seem to fall under the general conclusion put forward by Thorp (1998, 114) in relation to Latin America. According to her, "The 1930s in Latin America may not have represented a sharp break with the past, but the decade did not represent a lost opportunity either. In the face of a generally hostile external environment, most republics did well to rebuild their export sectors; where it was feasible republics with only a few exceptions expanded the production of importables and increased the supply of non-traded goods and services. These changes provided the basis for a significant growth in intra-regional trade in the early 1940s when access to imports from the rest of the world was cut off." The author adds that "changes in economic policy in the 1930s were also generally rational; a wholesale retreat from the export sector and the construction of a semi-closed economy would have involved a massive increase in inefficiency; a slavish commitment to the export-led model of growth would have locked the region into an allocation of resources no longer consistent with long-run comparative advantage. Economic historians searching for the period of the twentieth century when Latin America economic policy and performance go seriously wrong need to look beyond the 1930s" (Bulmer-Thomas, 114). Mexico performed better than Portugal because its domestic market was larger, as well as its economic development before 1929. As Hofman and Mulder (1998, 88) put it: "A minimum size in the domestic market plus a minimum degree of autonomy regarding the exchange rate and fiscal and monetary policies were necessary conditions for industrialization in Latin America in the 1930s." The good performance of the 1930s was not replicated later on, after the first oil shock in 1973 or the debt crisis in 1982, because the economic policies then adopted strongly discriminated against exports. Those policies led to foreign exchange constraint and affected the financing of the current account deficit (Ffrench-Davis, Muñoz, and Palma 1998, 115).

**Table 2.1** GDP per capita: Real annual growth rates (peak-to-peak; %)

Mexico		Portugal	
1870–1898	1.86	1870–1882	0.15
1898–1905	1.44	1882–1902	1.03
1905–1926	1.16	1902–1922	0.60
1926–1936	-1.07	1922–1934	1.54
1936–1944	2.30	1934–1947	1.11
1944–1958	2.65	1947–1958	2.16
1958–1973	3.15	1958–1973	7.15

Sources: Mexico: Maddison (1995), for 1870, and Cárdenas (1997); Portugal: Lains (2006).

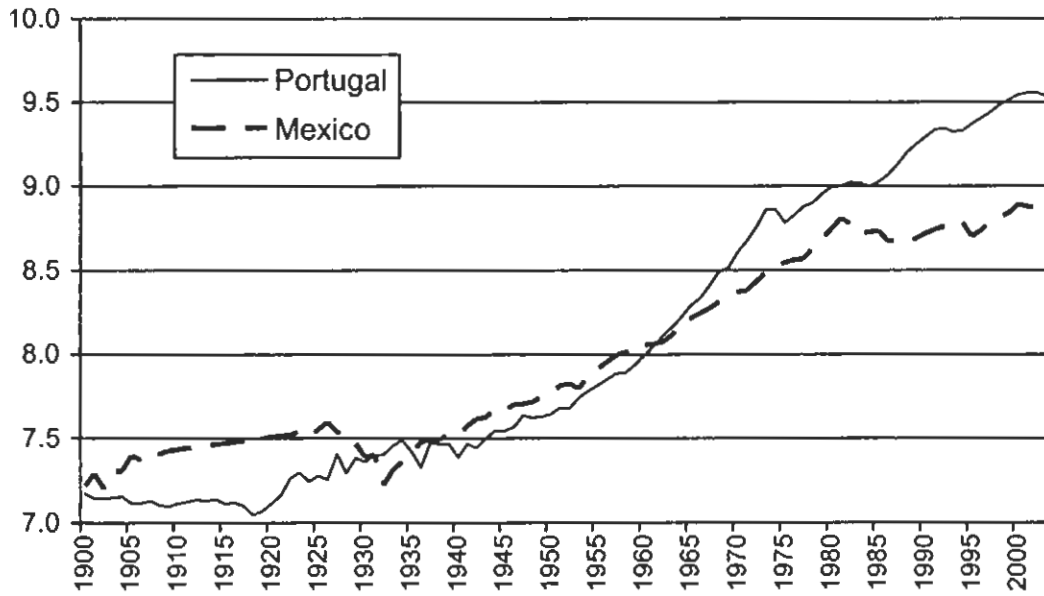
### 2.3 Growth Trends

At the eve of its industrialization age, in 1870, Mexico's per capita income was low by European and North American standards. In fact, at 710 1990 United States dollars, in 1870, Mexico was poorer than any European country for which there is data for that year. Part of that lag was recovered in the decades leading up to 1910, as the Mexican income per capita expanded at an annual rate of 1.7 percent. None of the poorer European countries, including Portugal, attained such a rapid level of income growth during the same period.<sup>16</sup> Mexico's better performance can be explained in the same manner used to explain the United States' advantage over industrialized Europe in the nineteenth century. That would lead us to take into account the role of natural resource endowments, in terms of mineral wealth per capita and land-labor ratios. Mexico's rapid growth up to 1910 was due to rapid industrialization and to the growth of capital-intensive industrial sectors. This was helped by large amounts of capital imports and foreign direct investment. Interestingly, however, the Mexican agrarian sector remained stagnant in the same period, which contrasts with what happened in the United States. Portugal's income growth was driven by the industrial sector, which was largely dominated by the growth of industries that were not competitive in the international markets—in particular, cotton textiles—and under tariff protection. The agrarian sector also lagged behind, although there were some periods of positive performance in terms of labor (but not land) productivity.<sup>17</sup>

Table 2.1 presents the rates of growth of GDP per capita in Mexico and Portugal during the main growth trends, defined as periods between peak years (see also figure 2.1). The table shows that the Mexican economy expanded at rates of over 1 percent per year before 1926, and that after the recession, starting in that year and ending in 1936, the economy expanded

16. See Maddison (1995, 2001).

17. See Lains (2003b).



**Fig. 2.1 GDP per capita in Mexico and Portugal, 1900–2003 (semi-log scale; 1990 US\$)**

*Sources:* See table 2.1.

at rates above 2 percent. In contrast, the Portuguese economy expanded at rates below 1 percent before 1922; thereafter the pace of growth increased, but still remained below that of Mexico until 1958. Between 1958 and 1973, the Portuguese economy took off, whereas Mexico increased its rate of economic growth only slightly. One important fact revealed by the data in table 2.1 is that these two countries had a good performance in terms of rates of economic growth during the interwar years and, in particular, during the late 1920s and 1930s. The upsurge in economic growth is more relevant in the case of Portugal, where the contrast between the periods before and after the 1922 peak is higher. Mexico had a deep depression during 1926–36, which weighed heavily in the performance of the economy during the interwar period. Despite the sharp decline in income per capita that occurred then, the fact is that Mexican income growth reached 1.4 percent per year in the whole period from 1926 to 1958, which was similar to growth in the years 1898 to 1905 and faster than growth in the years from 1905 to 1926.

Table 2.2 gives a comparison of income per capita levels of the two peripheral countries and their industrialized neighbors. The table shows that Mexico followed the United States closely between 1870 and 1913, as relative income levels remained rather similar in those two years, namely, 28.9 and 27.6 percent. Between 1913 and 1929, the relative position in comparison to the United States declined to 21.6 percent, and from then on it remained at that level until 1950, to increase only slightly during 1950–73. Portugal’s experience in comparison to western Europe is remarkably different from the Mexico-United States comparison, as there was a sharp

Table 2.2 Levels of income per capita

	Absolute levels (1990 US\$)				Relative levels (%)		
	Mexico	Portugal	United States	Western Europe	Mexico/ United States	Portugal/ Western Europe	Mexico/ Portugal
1870	710	1,085	2,457	1,986	28.9	54.6	65.4
1913	1,467	1,354	5,307	3,482	27.6	38.9	108.3
1929	1,489	1,536	6,907	4,538	21.6	33.8	96.9
1938	1,380	1,787	6,134	4,685	22.5	38.4	76.8
1950	2,085	2,132	9,573	5,513	21.8	38.7	97.8
1973	4,189	7,568	16,607	11,694	25.2	64.7	55.4

Source: Maddison (1995), pp. 23–24, 194–198 and 202.

decline in relative income levels, from 54.6 percent in 1870 to 38.9 percent in 1913. From 1913 to 1929 the decline in Portugal's relative position continued, albeit at a slower pace, and after 1929 there was a recovery. The last column on table 2.2 shows the comparison between the two peripheral countries. Mexico caught up with Portugal after 1870, and in 1913 the two countries reached a similar level of income per capita, which was maintained until 1929. In the following decades Portugal outperformed Mexico first, and then the opposite happened, in such a way that in 1950 the two countries were again parallel. The periods chosen for comparison on table 2.2 do not take into account the cycles of growth in each country, and thus they are only indicative. The table shows, however, that the 1910s and the 1920s were less positive in Mexico than they were in Portugal. Moreover, the same table shows that Mexico closely followed the United States' pattern of economic growth. The most important conclusion from these comparisons is that Mexico and Portugal had levels of income per capita within a close range, and that the distances of development in comparison to their respective more industrialized neighbors were also rather similar.

The higher degree of synchrony of Mexico's economic cycles in relation to its northern neighbor was not due to a higher degree of openness, but to the fact that the United States had a larger share in Mexican foreign trade and capital flows (as well as northbound emigration) than any single European economy had in regard to the Portuguese economy. Table 2.3 shows average trade ratios for the two countries. Mexico's export ratio was larger than Portugal's until the period from 1929–37 and then it declined substantially, whereas Portugal's export ratio increased, particularly after 1950. Mexico's import ratio fell below that of Portugal during the whole period, and Mexico also had trade surpluses throughout. In contrast, Portugal had large trade deficits. All in all, the Mexican economy remained more closed than the Portuguese. In fact, the two economies ranked among the most closed economies in the world. At its lowest levels, in 1932–37, the United States accounted for 57.7 percent of Mexican exports and 60.8 per-

**Table 2.3** Trade ratios (current values)

	Mexico			Portugal			
	Export/ GDP	Import/ GDP	(Export + Import)/ GDP	Export/ GDP	Import/ GDP	(Export + Import)/ GDP	
1900–1910	11.3	9.3	20.7	1910–1913	9.0	19.4	28.4
1921–1928	13.6	7.7	21.3	1918–1928	8.4	24.9	33.3
1929–1937	13.2	8.1	21.4	1929–1937	6.6	14.7	21.3
1938–1950	8.9	9.8	18.7	1938–1950	11.5	16.3	27.8

Sources: Mexico: computed from Mitchell (1993, table E1) and Cárdenas (1997), pp. 190–1; Portugal: Lains (2006).

**Table 2.4** Growth of monetary and fiscal indicators (annual growth rates; %)

	Mexico				
	GDP deflator	Money supply (M1)	Ex rate (Pesos/US\$)	Total public debt	Budget deficit (-)/ surplus (+) (% of GDP) <sup>b</sup>
1890–1913	2.66	15.46 <sup>a</sup>	2.42	6.71	-0.03
1913–1929	2.23	2.29	-0.01	4.41	+0.44
1929–1939	2.05	4.14	9.58	2.48	+0.03
1939–1950	10.39	19.18	4.77	12.97	+0.02
	Portugal				
	GDP deflator	Money supply (M1)	Ex rate (PTE/£) <sup>c</sup>	Total public debt	Budget deficit (% of GDP)
1891–1914	0.92	0.68	0.69	0.46	-0.3
1914–1929	26.91	22.50	25.04	20.85	-6.4
1929–1939	-0.10	6.21	1.85	-2.84	+0.9
1939–1945	15.22	27.77	-1.58	5.54	-0.9

Sources: Mexico: Estadísticas Históricas de México (data in current pesos); Portugal: Lains (2006).

<sup>a</sup>1910–1913.

<sup>b</sup>1895–1910, 1921–28, 1929–38, 1939–49.

<sup>c</sup>Before 1910, 1 PTE = 1\$000 reis.

cent of imports. In 1938–50 the same shares were, respectively, 80.6 and 94.2 percent (Mitchell 1993). Clearly, though, Portugal had to finance large trade deficits throughout most of the period, and as such it was more dependent than Mexico on capital imports as well as on emigrant remittances.

Table 2.4 shows the evolution of main monetary and fiscal indicators in the two countries. As is shown there, the evolution of price inflation in Mexico was less erratic, growing at rates above or close to 2 percent per year until 1939, and increasing to 10.4 percent in 1939–50. In contrast,

Portugal had a period of very high inflation, with prices increasing on average by 27 percent per year between 1914 and 1929, a period that was followed by stable or slightly declining inflation up to 1939. The major changes in the levels of inflation in Portugal mirror changes in the growth of money supply, the exchange rate, public debt, and the budget deficit. Mexico's financial indicators depict higher levels of stability, and although total public debt increased at high rates throughout, that increase had a more stable pattern than in Portugal. Stability was achieved through successive exchange rate adjustments down to the mid-1950s. Moreover, Mexico's government accounts were kept balanced, even showing small surpluses.<sup>18</sup>

The interwar period stands out in the experience of growth of the Mexican and Portuguese economies. Both countries attained rates of growth of GDP per capita that compare favorably with growth elsewhere in the peripheries at the same time, as well as with growth in the two countries before 1914. Growth in the two countries was inward looking, mainly because there was a globalization backlash resulting from World War I, the decline in world trade, emigration, and international prices for primary products. The 1929–32 Great Depression also had a negative impact on the growth of the two countries, particularly in Mexico. Taking the whole interwar period into account, Mexico outperformed Portugal and in the next section we explore the reasons for that. The better performance is reflected on a more stable monetary and financial situation, which probably was also favorable, in a two-way effect, for the high growth levels achieved in Mexico. Portugal's financial distress during the interwar period were certainly not helpful for growth.

## 2.4 Structural Change

To explain the performance of the economies of Mexico and Portugal during the interwar period and, in particular, after 1930, we need to look at changes in their structures and reveal which sectors expanded faster. Table 2.5 shows data on structural change for the two countries in three periods, taking into account six economic sectors.<sup>19</sup> The pattern of structural change in the two countries is what one might expect, namely, a contraction of the share of the agrarian sector and an increase in the shares of industry and services. There are, though, two main differences. First, Mexico had a higher share of output originating in the mining sector, and that is, of course, related to her specific resource endowments, namely silver, copper, and oil. Thus, whereas mining in Portugal was marginal, in Mexico it peaked at 14 percent of output value in 1930 to decline to 6.4 percent

18. See Cárdenas (1997, 2004) and Bazant (1995).

19. The availability of the data is restricted for different reasons. See Keesing (1969) and Cárdenas (1997, 2004).

Table 2.5 Structural change (%)

	Mexico			Portugal		
	1895	1930	1950	1890	1930	1950
<b>Labor</b>						
Agriculture	66.5	68.7	58.3	66.9 <sup>a</sup>	60.9 <sup>a</sup>	53.8 <sup>a</sup>
Mining	1.8	1.0	1.2	n.a.	n.a.	n.a.
Manufacturing <sup>b</sup>	13.8	12.2	15.6	18.3	20.7	24.6
Transports <sup>c</sup>	1.6	2.0	2.5	14.8	18.4	21.6
Trade <sup>d</sup>	5.6	5.8	9.1	n.a.	n.a.	n.a.
Other services <sup>e</sup>	10.7	10.4	13.2	n.a.	n.a.	n.a.
Total	100	100	100	100	100	100
<b>Output</b>						
Agriculture	49.2	25.4	25.1	40.9 <sup>a</sup>	31.5	32.1
Mining	6.4	14.0	6.4	n.a.	0.4	0.6
Manufacturing <sup>b</sup>	15.6	20.6	28.4	21.5	27.6	29.7
Transports	3.3	5.5	5.2	37.6 <sup>c</sup>	3.8	4.3
Trade	12.3	18.6	16.1	n.a.	16.3	17.0
Other services <sup>e</sup>	13.3	15.8	18.7	n.a.	20.4	16.3
Total	100	100	100	100	100	100

Sources: Mexico: Keesing (1969); Portugal: Lains (2006). The source for Mexico provides data on labor and output per unit of labor, from which output data was derived.

Note: n.a. = not available.

<sup>a</sup>Includes "Mining."

<sup>b</sup>Includes "Energy and construction."

<sup>c</sup>Data for Portugal includes "Trade" and "Other services" and, for both countries, "Communications."

<sup>d</sup>Data for Portugal includes "Finance and rents."

<sup>e</sup>Data for Mexico includes "Other services" and "Insufficiently specified sectors."

at the end of the period. Second, in 1895, Mexico had a higher share of output originating in the agrarian sector and a lower share originating in the industrial sector. From then on structural change was faster in Mexico than in Portugal, in such a way that the percentage of agricultural productivity in Mexico fell below that of Portugal in 1950 and the percentage of the industrial sector reached 28.4 percent, which compares to the percentage of 30.1 percent in Portugal. Portugal kept a larger proportion of resources in the agrarian sector for a longer period of time than did Mexico, due to a large extent to the fact that the labor productivity gap between agriculture and the rest of the economy was considerably smaller. In fact, in 1895, Mexican total labor productivity was 1.36 times that of the agrarian sector alone, and in 1950 the same ratio had increased to 2.32.

Table 2.6 shows that labor productivity in Mexican agriculture increased at an annual rate of 3.3 percent between 1930 and 1950, whereas in the industrial sector growth was 2.9 percent annually. These high rates of growth were achieved in spite of the fact that labor expanded in both sectors at very

**Table 2.6 Growth of output and labor (annual; %)**

	Mexico						Portugal					
	Output		Labor		Output		Labor		Output		Labor	
	1895-1930	1930-1950	1895-1930	1930-1950	1890-1930	1930-1950	1890-1930	1930-1950	1890-1930	1930-1950	1890-1930	1930-1950
Agriculture <sup>a</sup>	0.21	4.75	0.62	1.37	1.01	2.32	0.58	0.70	0.58	2.32	0.58	0.70
Mining	4.45	0.83	-1.27	3.25	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Manufacturing <sup>b</sup>	2.96	6.50	0.17	3.48	2.37	3.09	1.07	2.21	2.37	3.09	1.07	2.21
Transports <sup>c</sup>	3.63	4.54	1.19	3.44	1.69	2.20	1.32	2.15	1.69	2.20	1.32	2.15
Trade <sup>d</sup>	3.36	4.04	0.64	4.56	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Other services <sup>e</sup>	2.65	5.69	0.45	3.42	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	2.13	4.81	0.53	2.20	1.62	2.50	0.79	1.33	1.62	2.50	0.79	1.33

*Sources:* Mexico: Keesing (1969); Portugal: Lains (2006). The source for Mexico provides data on labor and output per unit of labor, from which output data was derived.

*Note:* n.a. = not available.

<sup>a</sup>Includes "Mining."

<sup>b</sup>Includes "Energy and construction."

<sup>c</sup>Data for Portugal includes "Trade" and "Other services" and, for both countries, "Communications."

<sup>d</sup>Data for Portugal includes "Finance and rents."

<sup>e</sup>Data for Mexico includes "Other services" and "Insufficiently specified sectors."



Table 2.7 Growth of labor productivity

	Mexico			Portugal		
	1895–1930	1930–1950	1895–1950	1890–1930	1930–1950	1890–1950
Agriculture <sup>a</sup>	-0.41	3.34	0.94	0.43	1.62	0.83
Mining	5.80	-2.34	2.76	n.a.	n.a.	n.a.
Manufacturing <sup>b</sup>	2.78	2.92	2.83	1.30	0.88	1.16
Transports <sup>c</sup>	2.41	1.06	1.92	0.37	0.05	0.26
Trade <sup>d</sup>	2.70	-0.50	1.52	n.a.	n.a.	n.a.
Other services <sup>e</sup>	2.18	2.20	2.19	n.a.	n.a.	n.a.
Total	1.57	2.58	1.93	0.82	1.17	0.94

Sources: Mexico: Keesing (1969); Portugal: Lains (2006). The source for Mexico provides data on labor and output per unit of labor, from which output data was derived.

Note: n.a. = not available.

<sup>a</sup>Includes "Mining."

<sup>b</sup>Includes "Energy and construction."

<sup>c</sup>Data for Portugal includes "Trade" and "Other services" and, for both countries, "Communications."

<sup>d</sup>Data for Portugal includes "Finance and rents."

<sup>e</sup>Data for Mexico includes "Other services" and "Insufficiently specified sectors."

high rates (see table 2.7). In Portugal, the period from 1930 to 1950 was comparatively positive, as the economy expanded faster than in any previous period since industrialization began. Yet, in this case, growth was mainly due to the performance of the agrarian sector, where labor productivity increased at 1.6 percent per year. The industrial sector expanded at just 0.9 percent per year in the same period of time. The larger contribution of the agrarian sector was due to a great extent to the fact that the primary sector was protected from foreign competition, either through tariffs or special price arrangements, or as a consequence of the contraction in international trade. Protection, in one form or the other, had positive consequences, because it enhanced the growth of agrarian output with above-average factor (i.e., land and labor) productivity levels, and for which domestic demand was also growing at rates above the national average. Evidence on land and labor productivity levels, albeit partial in some cases, indicate that the primary sector in some regions of the country and in some sectors, such as animal products or fruits and legumes, had higher levels of productivity than, for example, the textile sector. Portugal was a very backward country in those years, which meant that there was still the possibility of obtaining productivity gains by shifting resources to certain products within the traditional sectors. Moreover, those were products with higher levels of domestic demand price and income elasticities. This was the mechanism through which a higher level of isolation from the international markets could have had, and did have, a positive impact on average productivity levels.

A similar process happened in Mexico but with higher productivity

gains, due to the fact that Mexico had an advantage in terms of certain industrial branches. Again, it is possible to reach such conclusions with the analysis of structural changes, particularly of changes within the industrial sector. The detailed analysis provided in Keesing (1969) is crucial to understand such processes. According to this author, the Mexican economy went through important structural changes within the industrial sector in the 1930s and 1940s—which ultimately “served as a transition to the rapid industrialization and structural change that have subsequently distinguished the economy” (1969, 720). He provides several examples of structural change. The number of workers in the food and beverages industries doubled in the period from 1895 to 1950, but there was a decline in the more traditional activities, such as tortilla makers (which accounted for a third of the total), bakers, and butchers, whereas the number of workers in sugar, alcohol, and beverage industries increased, with overall productivity gains. Also, in the chemical industries, workers were mainly traditional artisans in 1895, namely candle or soap makers, with their numbers declining to give way to more modern industries such as basic chemicals. Keesing concludes that it is at this level that we need to take into account the impact of structural changes in productivity. He argues that “between 1930 and 1950 skill-intensive subsectors typically grew by a factor of three to five times or more, though they remained very small relative to the rest of the economy, by standards of industrial economies” (Keesing 1969, 737). Keesing also points out to structural changes that occurred in the service sector. All changes suggest “that economic development involves at least a two-stage transformation. First there occurs a modernization of techniques that tends to shrink the labor force in each nonagricultural sector. Only later comes a structural transformation of the labor force” (Keesing 1969, 737).

We may conclude, then, that the economies of Mexico and Portugal were going through important shifts in their structure that were ultimately fundamental to future stages of growth. Historically, such changes occurred in periods of diminishing importance of international economic relations, and thus there is a link between such changes and protection of the domestic market. But that evidence tells us nothing about the mechanisms that allowed such changes and thus allowed such productivity gains in the labor force. One key element in illustrating that mechanism is by analyzing the extent to which greater isolation from world commerce allowed the exploration of excess capacity in the economy. That hypothesis is plausible for Portugal’s agrarian sector. In fact, land was abundant and still far from totally used by the 1930s, and there was also a large underemployed agrarian population. In the case of Mexican industry the point has also been made that the period since the 1910 revolution until well into the 1920s was one of underutilization of capacity. That would have been a consequence of the high rates of growth of industrial investment prior to 1910, pushed by capital imports.

This conclusion is derived from Bruton (1967) in his study of economic growth in the Latin American economies during the period of high growth from 1940 to 1964. This author devises a simple method to analyze whether “the ability to exploit capacity is an important factor in potential output, and that changing utilization is a key variable explaining productivity growth in the Latin American countries” (1967, 1101). His device is to estimate regressions of productivity growth on the growth of inputs and on the growth of output. The outcomes of those estimates differ for Latin America (LAC), compared to a group of advanced economies (AG).<sup>20</sup> For Latin America in 1940–1964 the author gets (where  $r_A$ ,  $r_N$  and  $r_P$  stand respectively for growth of total factor productivity, inputs and output):

$$(1a) \quad AG \ r_A = 2.47 + 0.17 \ r_N \quad r^2 = 0.02 \\ (0.21)$$

$$(1b) \quad LAC \ r_A = 1.26 + 0.06 \ r_N \quad r^2 = 0.00 \\ (0.40)$$

$$(2a) \quad AG \ r_A = 0.64 + 0.44 \ r_P \quad r^2 = 0.51 \\ (0.10)$$

$$(2b) \quad LAC \ r_A = -1.71 + 0.74 \ r_P \quad r^2 = 0.75 \\ (0.10)$$

According to this model, the growth of inputs does not explain the growth of total factor productivity in both the advanced group of countries and Latin America (equations [1a] and [1b] have zero  $r^2$ ). In contrast, factor productivity can be explained by the growth of output, as shown in equations (2a) and (2b). In fact, in Latin America the growth of output explains 75 percent of the variance in factor productivity. Moreover, the fact that the intercept is negative implies that productivity growth can be negative unless output growth is substantially positive, that is, over 2.3 percent per year (i.e.,  $1.71/0.74$ ).

Does the data on factor productivity and output growth in Portugal confirm this general finding, for both Latin America and in particular for Mexico? Table 2.8 shows the available estimates for output and factor productivity growth for Portugal, for which we have data concerning the agrarian sector for 1865–1951, and for the whole economy for 1910–47 (the years in the table are peak years). We may see that there is a positive correlation between changes in the rate of growth of output and TFP for agriculture. In fact, both declined in 1902–27 as compared to the previous period,

20. The countries in each group are the following. Latin America: Argentina, Brazil, Chile, Colombia, and Mexico; Advanced: Belgium, Canada, Netherlands, Sweden, United Kingdom, France, Italy, West Germany, Israel, Japan, and United States.

Table 2.8 Growth of output and productivity in Portugal

	Output	Labor productivity	Capital productivity	Total factor productivity
Agriculture				
1865–1902	1.41	0.74	0.63	0.72
1902–1927	0.35	0.13	0.86	0.20
1927–1951	2.36	0.97	1.44	1.59–1.63
All sectors				
1910–1934	2.17	1.00	1.25	0.72
1934–1947	2.09	1.31	3.89	–0.02

Source: Lains (2003a, 2003b).

whereas both increased again in the subsequent 1927–51 period. For the whole economy there is evidence for only two periods, and the correlation is again positive. Although the evidence is far from conclusive, as it is based on a small number of observations, we may conclude that also in Portugal total factor productivity growth was positively correlated to the growth of output, implying the existence of unused excess capacity in both the agrarian and the industrial sector. This seems to have been a major source of growth in Mexico and Portugal during the interwar period, which eventually counterbalanced the negative effects of receding international economic relations.

## 2.5 Conclusion

The conditions analyzed here for economic growth in the two peripheral countries during the interwar period are unique and will not be easily replicated. Mexico and Portugal had comparatively good economic performance under protection in that period because they could benefit from particularly favorable conditions. Those conditions stemmed from the fact that the financing of their external imbalances was facilitated by continuing exports and capital imports. The two economies also reacted positively to higher levels of protection from international competition because they had excess capacity that was put into use. That was particularly evident in the Mexican economy as a whole, as well as in the Portuguese agrarian sector. In addition to these positive factors, we also have to consider the fact that nineteenth century industrialization in the two countries had provided a sufficient economic background for higher growth. The accumulation of investment in manufacturing and agriculture, investments in social overhead capital, urbanization, and the (albeit limited) spread of education paved the way for the response to higher levels of protection after 1910.

One further element that makes the interwar period distinct from any other period when import substitution was implemented was the fact that

protection was mainly the outcome of devaluation, and thus it was provided to all of the sectors in the economy. Instead, post-World War II protectionism in Mexico was differentiated and thus imposed changes in the structure of its economy (Portugal entered a period of higher free trade in the late 1950s, although levels of state intervention did not decline during that golden age). The question of why backward countries follow the path of inward-looking industrialization can thus be understood under the light of the Mexican and Portuguese experiences in the interwar period. Political factors and the intervention of interest groups certainly helped to build barriers to international transactions. Yet there were also gains to obtain from protection, which depend on specific favorable circumstances.

What lessons can we derive from the interwar period to the present times? Conditions for growth since the early 1980s are of course drastically different from those of the period analyzed in this paper, but there are nevertheless some lessons to be drawn. In periods of receding international transactions, import substitution can bring higher growth if it leads to structural change that benefits sectors with above-average factor productivity levels. For that to occur, labor and capital have to be available, which means that either there is some degree of excess capacity or that labor force and investment can expand at the prevailing wage and interest rate levels. For investment to expand it may also be crucial that capital imports continue. In periods of expanding international trade and capital flows, countries should be allowed to exploit export opportunities as well, which means that tariff protection is to be abandoned as a major framework for economic policy (if some relation is assumed to exist between domestic and foreign commercial policies). It may be the case, though, that the country's comparative advantages lay in industries with below-average productivity levels, and thus that economic policy has to step in to help in changing the pattern of comparative advantages. It is harder for governments to help promoting the development of new sources of comparative advantages. Two main options are at hand: either to intervene directly by selecting industries where comparative advantages are assumed to be possible, or to intervene indirectly by providing social overhead capital, such as transport infrastructures, education, or financial services. In any case, help from the outside may be crucial, and there the political and financial framework provided by the European Union to Portugal is probably more favorable than the one provided by NAFTA to Mexico.

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