A Historical Perspective of Economic Development on the Northern Mexico Border

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Abstract

Since the 1880s, the northern states of Mexico have been a regional center of economic growth. The development of a network of communications and transportation with the rest of the country and the United States, the emergence of manufacturing and commercial agriculture, and the expansion of mining initially fostered the region’s economic growth. Later, at the onset of the revolutionary era (post-1910), other sectors gained importance, such as oil. For all of the twentieth century, and to this day, the northern border states have been the fastest growing and most productive region in the country, comparable only to Mexico City. This region has benefited from or survived economic policies implemented by Mexico’s government during the twentieth century, for the most part enjoying times of growth and recovering relatively quickly from difficult periods. Its prosperity and proximity to the United States have yielded great economic benefits for some, but have also posed great challenges to the social development of the region in the past decades. In presenting a brief economic history of modern Mexico, highlighting the points relevant to the development of border economies, it is the purpose of this study to provide the non-specialist of the Mexican economy with a background on the evolution of the economies of the northern border states and to identify the origins of the defining features of the contemporary economies of this region.

Introduction

Although the territory that comprises today’s northern states (Baja California, Sonora, Chihuahua, Coahuila, Nuevo León, and Tamaulipas) had been explored and claimed as part of the colony of New Spain by the mid-sixteenth century, it remained sparsely populated throughout the colonial period (1500s-1821). The economic life in the region was driven by Jesuit missions and mining centers scattered across a vast territory. Despite the Spanish Crown’s efforts to promote the founding of settlements in the north during the last four decades of the eighteenth century in an anxious reaction to the Seven Years’ War of 1756-1763 and British encroachments, most of the population of the colony continued to settle in central and southern New Spain, and the north remained the frontier. During the first decades of the national period (post-1810), the population of this region did not substantially increase; this continued to be the
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case in 1846 when U.S. President James Polk signed a congressional declaration of war against Mexico.

The war ended in 1948 with the Treaty of Guadalupe Hidalgo, which established a new border between the United States and Mexico while bringing a new economic order to the region. On one hand, it became evident that insufficient communication and transportation networks were a major weakness for the region and the country in general; on the other hand, the growth of the American economy in the Southwest presented new business opportunities for the northerners in Mexico who, until then, had been isolated by centralist governments.

Since the 1880s, Mexico’s northern states have been a regional center of economic growth. The development of a network of communications and transportation with the rest of the country and the United States, the emergence of manufacturing and commercial agriculture, and the expansion of mining initially fostered the region’s economic growth. Later, at the onset of the revolutionary era (post-1910), other sectors gained importance, such as oil. Government policies, for the most part, were geared toward a development model in which border states happened to have competitive advantages. These advantages included natural resource endowments such as minerals, oil, and the potential for commercial agriculture; major investments in infrastructure, which have made the exploitation of natural resource endowments profitable since the first wave of industrialization (1870 to 1940); local entrepreneurs willing to invest their capital in the region; and a shared border with the United States. Therefore, for all of the twentieth century and to this day, the northern border states have been the fastest growing and most productive region in the country, comparable only to Mexico City. This region has benefited from or survived economic policies implemented by the Mexican government during the twentieth century, enjoying times of growth and recovering relatively quickly from difficult periods.

The purpose of this study is to present an overview of the main factors that have shaped the economic development of the states of Mexico that border the United States. By presenting a brief economic history of modern Mexico, this study provides the non-specialist of Mexico’s economy a layout of the origins of the economic features that define this region today. This study is divided into five sections. Section two, which follows, covers the first wave of
industrialization (1870-1940). The third section analyzes the second wave of industrialization and its aftermath (1940 to 1982). The fourth section discusses the evolution of the Mexican economy since 1980, including the debt crises of the 1980s, and the structural reforms associated with the North American Free Trade Agreement (NAFTA) and its aftermath. The fifth section is a brief conclusion.

The First Wave of Industrialization (1870-1940)

Mexico’s first wave of industrialization occurred in the last two decades of the nineteenth century during the presidency of Porfirio Díaz—a period commonly known as the Porfiriato (1876-1911).¹ For the first time since its independence, there was political stability in Mexico. Díaz knew that political stability was necessary to turn the country into a modern, civilized, and developed nation; his policies were oriented toward promoting national economic growth and development.² As in other Latin American countries at the time, modernization was thought to be possible through export-led growth.³ Diaz restored Mexico’s credibility in the international financial community by resuming the payment of foreign debt and by enforcing a fiscal reform plan that widened the tax base.⁴ These policies were thus able to attract foreign capital that was invested in key sectors for modernization projects such as transportation and communication, oil extraction, mining, commercial agriculture, and manufacturing, among others.⁵ Political stability also created incentives for local elites to invest their capital outside of the traditional sectors. Eventually, the entrepreneurial class decided it was worthwhile to further develop domestic industry.⁶

In addition, the Díaz government undertook legal and institutional reforms that were conducive to securing property rights to an extent that had not been observed before. Still, despite the efforts to modernize the Mexican economy through a laissez-faire approach, the business class was too dependent on its connections with President Díaz and the members of his cabinet for

¹ Haber, Industry and Underdevelopment, 12.
² Beatty, Institutions and Investment, 32.
³ Bulner-Thomas, The Economic History of Latin America, 46; Beatty, Institutions, 43.
⁴ This fiscal reform was originally designed by Matías Romero in 1869.
⁵ Cárdenas, “A Macroeconomic Interpretation of Mexico” in Haber, Industry 190-4.
⁶ Beatty, Institutions, 44; Haber, Industry, 25.
their ventures. These connections translated into government subsidies, tax breaks, and tariff protections for the enterprises of the rich, among other privileges.\footnote{Haber, \textit{Industry}, 23.} This form of crony capitalism fostered economic growth, albeit not to its full potential.\footnote{Haber, \textit{“The Commitment Problem,”} 326-327.}

One of the major contributions of Díaz’s economic development policies was the expansion of the Mexico’s transportation and communication networks. Larger networks of railways reduced the costs of moving goods and people, which helped to integrate the economies of the northern border states of Mexico with the rest of the country. Although insufficient, the construction of railways also favored the integration of markets in Mexico with those in United States.\footnote{Hernández Chávez, \textit{Mexico: A Brief History}, 163-8.} By 1910, on the eve of the outbreak of the revolution, five northern border cities had railroads that served as links between U.S. and Mexican markets: Nogales in Sonora; Ciudad Juárez in Chihuahua; Piedras Negras in Coahuila; and Nuevo Laredo and Matamoros in Tamaulipas (see map).\footnote{Ibid., 80-81.} Railroads also increased traffic and economic activity in the seaport of Tampico in Tamaulipas, even before oil production began.\footnote{Cárdenas, \textit{“A Macroeconomic Interpretation,”} 79.} The development of railroads made mining in Sonora and Chihuahua profitable. New mining centers there now produced copper and zinc as opposed to precious minerals. The reduction in transportation costs that resulted from the introduction of railroads turned industrial mining into a profitable venture, as did new technologies of the time that created a growing demand for these metals in international markets.\footnote{“The primary purpose of the railways was to move raw materials to the coast or to the northern border for export to foreign markets, but the sheer number of feeder lines eventually gave rise to an interconnected grid that linked internal markets as well as the mining areas and the ports.” See Haber, \textit{Industry}, 15.}

The integration of the border region with the United States and the rest of the country, especially Mexico City, during the last decade of the nineteenth century opened new business possibilities. Local elites in the border states decided to diversify outside of their traditional activities and start developing local industries. Industrial development was accomplished with imported technology, which was capital intensive. These new industries had two defining features. First, entrepreneurs were overly optimistic about the prospects for economic growth; their investment projects were
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overly ambitious, and they built industries to serve markets much larger than the size of the Mexican market at the time. Second, there was a high degree of concentrated ownership.\textsuperscript{13} It was at this time that northern Mexico, especially the city of Monterrey, emerged as an important center of industrial development. Enterprises such as Fundidora Monterrey, Vidrieria Monterrey, Cervecería Cuauhtémoc, and CEMEX were founded in this period.\textsuperscript{14}

It was also during the Porfiriato that Mexico became an important oil producer. Exploration was carried out by the British (Mexican Eagle Oil company) and Americans (Mexican Petroleum Company). Most of the operations were in the Gulf of Mexico off the states of Veracruz, Tamaulipas, Tabasco, and Campeche. Due to its proximity to oil drilling sites, Tampico became an important oil port. Oil companies received tax concessions on import tariffs on necessary machinery, and on export and production taxes on the resulting outputs. At first oil was extracted for the domestic market, but in 1911 the Golden Lane oil fields in Veracruz were discovered and production increased exponentially. Production peaked in 1922 when Mexico was the second-largest oil producer in the world after the United States.\textsuperscript{15}

Compared to the United States, industrial development in Mexico in the early 1920s was positive but not spectacular. There were obstacles to developing the economy to its full potential, and in this respect, the northern states were no exception. The obstacles included inadequate investments in infrastructure and transportation services; and an insufficient supply of electricity and skilled professionals, technicians, and other workers.\textsuperscript{16} Despite the efforts to make structural reforms to improve the efficiency of the economy, the judicial system remained weak and there was thus a high level of uncertainty in business transactions for those who were not part of Porfirio Diaz’s circle.\textsuperscript{17}

\textsuperscript{13} Haber, \textit{Industrialization}, 193.
\textsuperscript{14} For a more thorough account on the emergence of business elites, see the works of Mario Cerrutti.
\textsuperscript{15} Haber, Razo, Maurer, \textit{Politics of Property Rights}, Chapter 6.
\textsuperscript{16} Hernández Chávez, \textit{Mexico}, 185.
\textsuperscript{17} Haber, “The Commitment Problem,” 331.
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Although the Mexican Revolution lasted a decade (1910-1920), there was little physical destruction of the country’s manufacturing base.\(^{18}\) During the civil war years (1914-1917), it was not uncommon in occupied areas for the army to “seize the local factories and run them for its own benefit, or would threaten to do so unless a forced loan was paid.”\(^{19}\) Eventually, manufacturers did face operating problems related to the breakdown of transportation and communication systems, or the currency and exchange systems.\(^{20}\) It became very difficult to distribute goods or maintain access to the inputs required in the production process. Nonetheless, manufacturers were able to rebound somewhat rapidly from these challenges and resume production by 1917.

As early as 1917, when the new constitution was promulgated and the federal government re-established, industrialists were ready to negotiate with the different post-revolutionary governments, and requested the tariff exemptions they had been granted before the revolution; these privileges were mostly continued. However, some things did change: in the post-revolutionary period, the different governments protected not only the interests of financier-industrialists but also, at times, those of the working class.\(^{21}\) Although industries continued to operate and profit even more than before the revolution, investors’ confidence decreased, and basically no new investments were made until the mid-to late-1930s.\(^{22}\) Having overinvested in their infrastructure during the Porfiriato, industries were able to expand production with their already-installed capacity. The majority of industry was concentrated in Monterrey in the state of Nuevo León, and Mexico City.

The revolution did not affect oil production, though Article 27 of the 1917 Constitution changed subsoil property rights—they would henceforth belong to the nation. This new legal framework created a conflict of interest between the oil companies and government. In the years that followed, both parties could not reach an agreement on how to implement the new legislation and therefore stalled programs for new exploration or drilling. In the late 1920s, oil was

\(^{18}\) Haber, *Industrialization*, 124.

\(^{19}\) Ibid., 132.

\(^{20}\) Ibid., 134.

\(^{21}\) The political balance between employers and workers fluctuated and were often complex, with state governments sometimes at odds with the federal government.

\(^{22}\) Haber, *Industrialization*, 140-1.
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discovered in Venezuela, and foreign companies preferred to invest their capital there rather than accept altogether state regulation of their Mexican holdings. Gradually, foreign companies decreased their presence in Mexico. With no new exploration or drilling, and because of geological factors, oil production decreased.\textsuperscript{23} In 1938, the Mexican government nationalized the oil industry; this was a natural step to achieve full compliance with Article 27. Mexico did not experience another oil boom until the 1970s.

Many of the leaders of the Mexican Revolution were from northern states. Francisco Madero, the democratic presidential candidate who called for national revolution on November 20, 1910, and Venustiano Carranza, head of the victorious constitutionalist forces and the first president of the re-established federal government in 1917, were both from the state of Coahuila. There was also a group of revolutionaries from the northern Mexico state of Sonora.\textsuperscript{24} The two main leaders of this group were Plutarco Elías Calles and Alvaro Obregón. Both fought with Carranza’s constitutionalist army and both became presidents of Mexico during the 1920s. During their administrations, the government invested a substantial amount of resources on infrastructure to develop commercial agriculture. “To open up new lands to modern methods of agriculture, major irrigation works were started. Dams and canals accounted for 6.5 percent of the national budget between 1925 and 1928. Investment was concentrated in the north and the northwest.”\textsuperscript{25} During this period, commercial agriculture took off in Sonora as well as in other border states where dams and artificial irrigation networks were built.\textsuperscript{26}

The Mexican economy was affected by the world economic depression of the late 1920s. The distinctive feature of Mexico’s case is that depression started earlier (1926) and ended sooner (1932) than in the United States and Western Europe. Mexico’s problems started in mid-1926 as

\textsuperscript{23} Meyer, “Revolution and Reconstruction in the 1920s,” 225.

\textsuperscript{24} As historian Jean Meyer states, since 1913, Sonorans had “sought national political power, and in 1920 they finally seized it. The Sonoran hegemony proved complete and long lasting. They [Sonorans] described themselves as the Californians of Mexico, who wished to transform their country into another California.” Meyer, “Mexico in the 1920s,” 201.

\textsuperscript{25} Ibid., 220.

\textsuperscript{26} “The federal government constructed four large dams in Durango, Aguascalientes, Tamaulipas and Coahuila, which directly irrigated over 100,000 hectares of land. An additional 550,000 hectares were irrigated by less dramatic federal projects, which extended private irrigation systems at public expense in the states of Hidalgo, Mexico and Sonora.” See Haber et al., \textit{Politics of Property Rights}, 315.
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a result of the U.S. recession and the decline in oil and mineral exports. Rates of investment slowed down, manufacturing and agriculture output fell, and bank credit contracted. The government reacted to this economic downturn with a pro-cyclical monetary policy, thus reducing the money supply to prevent a depreciation of the peso. This decreased the money stock and further depressed aggregate demand. Fiscal policy was also pro-cyclical to maintain a balanced budget, which the government maintained by cutting expenditures and increasing taxes. The country’s gross domestic product (GDP) decreased 21 percent between 1926 and 1932. Unemployment increased with the slowdown of the domestic economy and was further aggravated by the deportation of more than 310,000 Mexican workers living in the United States, which represented almost 6 percent of the labor force employed in Mexico in 1930. By 1932, the government decided to relax its fiscal and monetary policies and expand government expenditures and money supplies. It also allowed the exchange rate to float vis-à-vis the dollar and, thus, the peso depreciated. This depreciation stimulated the tradable goods sector. The increase in the price of imports created an incentive for consumers to buy local goods instead of foreign products.

In 1934, with Eduardo Suárez as minister of finance under the incoming Lázaro Cárdenas administration, fiscal policy became markedly countercyclical. Government funds went into building economic infrastructure and launching social programs. Roads increased sevenfold and gradually began to replace railways as the main mode of transportation. By 1940, Mexico had more than 9,900 km (6,151 miles) of roads. Luckily for Mexico, the terms of trade for the two major exports at the time—silver and oil—recovered faster than the price of other commodities. The case of Mexico contrasts with those of other Latin American countries that depended on a single export commodity, such as Chile and Colombia, which were important world producers of copper and coffee respectively, and whose prices remained low for most of the 1930s. Industrial production also recovered, and manufacturing became the most dynamic sector in the economy. At this time new, smaller firms emerged in the manufacturing sector, funded with

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27 Moreno-Brid and Ros, Development, 77.
28 Ibid., 81.
29 Ibid., 84.
domestic capital. It was often the case that they were set up by recent immigrants like European Jews, Lebanese, and Syrians, among others.\textsuperscript{30}

Since the Porfiriato, a capitalist economy has prevailed in Mexico, and development has been financed for the most part by foreign investment and exports. Different regions of the country developed unevenly. In the lead were the northwest and northeast regions, the Federal District, and the Gulf region. Industry was concentrated in Mexico City, Monterrey, and in the corridor linking Puebla and Veracruz.\textsuperscript{31} Except for Cárdenas (1934-40), presidents in the post-revolutionary period focused more on modernizing the country than in undertaking draconian redistributive measures. The resulting government policies were therefore geared toward industrialization and export-led growth, which favored regions endowed with valued resources and competitive advantages in these two economic sectors.

The evolution of Mexico’s economy during its first phase of industrialization gave the border states a head start in potential economic development vis-à-vis the rest of the country (except for Mexico City). Industrial infrastructure, a solid entrepreneurial class, key natural resources, and proximity to the United States all made the border region a strong pole for economic growth. Except for sharing the border with the United States, however, the border states did not have uniformly competitive advantages. Nuevo León had industry; Tamaulipas, oil; and Baja California, Sonora, Coahuila, and Chihuahua had commercial agriculture and mining. The northern region was well prepared to develop and grow as Mexico experienced a second wave of industrialization during the mid-twentieth century (1940-1970), popularly known as the Mexican Miracle. But the earlier pattern of development also had a long-term influence on the trends of economic growth and the development of different sectors throughout the nation, and on the disparities in development among the different regions of Mexico, especially between north and south.

\textsuperscript{30} Haber, \textit{Industry}, 187.
\textsuperscript{31} Meyer, “Revolution and Reconstruction in the 1920s,” 220.
The Second Wave of Industrialization and Its Aftermath (1940-1982)

In 1940, when Manuel Avila Camacho became president, political stability was established under the hegemony of one ruling political party: the Partido de la Revolución Mexicana (PRM), which was later renamed the Partido Revolucionario Institucional (PRI) by the next president, Miguel Alemán Valdés (1946-52). Mexico experienced sustained economic growth for 30 years—beginning with Avila Camacho’s sexenio (or six-year administration)—as well as profound social transformations. Demographic changes were perhaps the most important. Mexico transitioned from an agrarian society to an urban semi-industrial one. By the early 1970s, 58 percent of Mexico’s population lived in urban areas. Most rural migrants went to Mexico City, Guadalajara, and Monterrey. In addition, the population grew at a faster pace than ever before: in three decades it went from 20 to 48 million people. Literacy nearly doubled, reaching 76 percent in 1970, and life expectancy at birth increased by 22 years, from 39 to about 61.32

Industrialization was still considered the key to economic growth and modernization. There was also the conviction among government authorities that the Mexican state should play an active role in investment and production, and that industrialization could be better achieved by expanding trade protections.33 The reason for this strategy was to protect “infant industries” from foreign competition so that they could develop and become more competitive, as well as to promote the consumption of goods and inputs produced locally. The government launched an import-control system through a tariff system for specific products. This system made imports for which there were national substitutes very expensive, though it gave tariff exemptions to imports for machinery and equipment. In the 1950s, Mexico expanded its protectionist policies by requiring a license to import goods.

The expectation was that import substitutions would be completed in stages. At first, it would be applied to nondurable consumer goods and light intermediaries, with a later focus on the local development of consumer durables, intermediary inputs for heavy industries, and capital goods industries. The government granted fiscal incentives to manufacturers that used locally produced

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32 Moreno-Brid and Ros, Development, 94.
33 Mosk, Industrial Revolution in Mexico, 18.
inputs, as well as to entrepreneurs willing to invest in new industries that used new technologies and produced goods not currently made in Mexico.\textsuperscript{34} The government also provided subsidies through low energy prices.

Promoting the growth of the export sector was also part of industrialization initiatives, however policies on this subject were given less attention during this period. Starting in the 1960s, banks and other financial institutions (financieras) were allowed to use part of their legal minimum reserves to supply export credit to manufacturing firms. The aim was to provide inexpensive credit lines to domestic manufacturers who were willing to venture into the export market. Manufacturing exports were exempt from export duties. As part of its export promotion policies, in 1965 the government established the border industrialization program also known as maquiladoras. Maquiladoras were established as a special free trade and investment regime for export processing plants along the northern border region.\textsuperscript{35} This program allowed firms to import to Mexico raw materials free of tariffs, provided the goods produced were re-exported, and the United States charged duties on the amount of value added. This resulted in the substantial development of maquiladora assembly plants in the northern border region.

The government’s active role in promoting industrialization also included financing investments in manufacturing industries that were deemed strategic, such as steel, cement, and petroleum refining, among others. Nacional Financiera was the institution through which the government channeled its investments. During the first years of this stage of economic development, industrialization was mainly concentrated in manufacturing, though it later shifted toward investments in infrastructure.\textsuperscript{36}

Investments in agricultural development started in the late 1920s, and continued at least until the mid-1950s, enhancing the productive capabilities of commercial agriculture. In fact, agriculture was a productive sector throughout this period.\textsuperscript{37} Mexico was self-sufficient in food production until the late 1960s. At that time there was a reversal of agricultural output, and since then

\textsuperscript{34} Moreno-Brid and Ros, \textit{Development}, 95.
\textsuperscript{35} Ibid., 187.
\textsuperscript{36} Moreno-Brid and Ros, \textit{Development}, 98.
\textsuperscript{37} Ibid., 102.
Mexico has had to import foodstuffs. A population explosion in Mexico and decreasing productivity in certain regions explain this change.

All of the above-mentioned policies were positive for the growth and development of the economies of the border states; they also favored the growth of sectors in which border states had already started investing, such as manufacturing, commercial agriculture, and the mining of natural resources. The main economic activities of these states today are precisely in these areas (see Table 1). Besides natural resource endowments, these states have had the advantage of proximity to the United States. Even though export promotion was not a top priority in the industrialization policy of this period, border states were able to make the most of their geographic advantages.

State-led industrialization through an import substitution strategy was effective in promoting industrial development for three decades. Two factors favored these positive results: the absence of external shocks that might have shattered the economy and the fact that Mexico had a relatively large market in which to sell its products. There were, however, three main drawbacks to the way the policies were implemented that later took a toll on the economy’s performance. First, in three decades the strategy could not accomplish the final stage of import substitution; in other words, it failed to lead to the production of high technology capital goods. Second, taxes remained too low and the government failed to undertake fiscal reform; therefore, the government remained too dependent on external financing and export revenues. Third, growth was attained but an uneven distribution of profits contributed to poverty and income inequality.

In the 1970s, the decade that followed the Mexican Miracle, national and international circumstances altered the course of Mexico’s economy. At the national level, Mexico lived through two populist presidential administrations (Luis Echeverría and José López Portillo, 1970-82) that left Mexico heavily in debt, despite the fact that in 1976 large oil reserves were discovered in the Gulf of Mexico.

The populist tendencies of these two administrations were in part a response to growing social discontent from those sectors that had not benefited from the Mexican Miracle. The economic
programs of these administrations aimed at improving the distribution of wealth by increasing government expenditures in agricultural infrastructure and in social programs, as well as by increasing the number of state-owned enterprises. Industrial policy gave more emphasis to export promotion, the development of capital goods industries, regional decentralization of industrial activities, and foreign investment regulation.\(^{38}\) This set of policies translated into salary increases for unionized urban workers, price subsidies, and an overvalued currency for the middle class, as well as cheap fertilizers and other subsidies and improvements in rural infrastructure for the agricultural sector.\(^{39}\) However, this spending surpassed government revenues since there was no fiscal reform, and tax collection remained low. This resulted in the loss of macroeconomic stability. The fiscal deficit as a percentage of GDP went from 2.5 percent in 1970 to 10 percent in 1976 and to 16 percent in 1982.\(^{40}\) The resources for all of this spending came from international borrowing. This financial strategy produced two-digit inflation in 1973.

This set of policies fostered economic growth for nearly ten years, and even temporarily helped ease regional disparities in growth.\(^{41}\) Still, it was the northern states that benefited most from government spending because these regions had the location and resource advantages to attract government investments in what were considered key sectors.\(^{42}\) Nonetheless, there were failures in the government’s strategy. For instance, despite all of the resources poured into the agriculture sector, production stagnated. Private investment also contracted due to a lack of confidence in the policies implemented. Furthermore, with an overvalued currency, national goods were uncompetitive in the international market. Entrepreneurs feared changes in policy that would affect their property rights and thus preferred to send their capital abroad.\(^{43}\) Among these entrepreneurs were some investor groups from the northern border states with business interests in their home regions.

The 1976 oil boom helped promote the fictitious idea that Mexico had become a wealthy nation overnight. Its leaders freely spent profits from the oil bonanza to foster growth (though to correct

\(^{38}\) Moreno-Brid and Ros, *Development*, 126.


\(^{40}\) Moreno-Brid and Ros, *Development*, 271.

\(^{41}\) Chiquiar, “Why Mexico’s regional income convergence,” 270.

\(^{42}\) Ibid., 270.

\(^{43}\) Moreno-Brid and Ros, *Development*, 132.
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inequities in the tax system, they also enacted limited fiscal reforms, such as a value added tax and a new corporate income tax). Upon taking office in late 1976, López Portillo went so far as to declare that Mexico needed to learn to manage its riches. The López Portillo government (1976-1982) continued running ever-increasing fiscal deficits to finance social programs while it became heavily dependent on revenues from oil exports. Public investment was gradually diverted toward the oil sector, especially petrochemicals. Private investment drastically shifted toward the service sector and away from manufacturing, except for the motor vehicle industry. The exchange rate became overvalued again and, despite revenues generated by oil exports, the government still relied heavily on foreign borrowing. International banks were more than willing to lend money to Mexico. In short, the extraordinary oil revenues received by Mexico from 1978 to 1981 primarily subsidized a private sector that experienced an investment boom during this period and expanded the demand for goods among Mexican consumers.44

Eventually, high foreign interest rates and the fall in oil prices in the early 1980s took a toll on Mexico’s public finances as well as on some private entrepreneurs, especially large firms that had dollar-denominated debts. The financial breakdown of Monterrey conglomerate Grupo Alfa is the quintessential example of what many businesses went through during this crisis period.45 In order to prevent capital flight, President López Portillo nationalized the private banking system and established full exchange control on capital flows, but this initiative came too late to keep the funds in the country or to help Mexico’s economy in any way.

The oil crisis affected border state economies on at least three fronts. It resulted in the financial breakdown for the entrepreneurial class with dollar-denominated debt; caused a loss of markets for their goods and services since the economic crisis contracted aggregate demand; and spurred a growing demand for public services as people migrated from the central and southern states in search of employment opportunities. Nevertheless, the economic performance of the border economies remained better than the national average (see Table 2).

44 Ibid., 137.
45 Grupo Alfa was the country’s largest industrial conglomerate in Mexico in the early 1980s. It started in the 1890s as FEMSA, a group that produced beer and glass bottles. In 1974, it became Grupo Alfa, a holding company of several companies that were linked to the production and bottling of different beverages. However, the 1982 crisis put a halt to its expansion and caused the downsizing of some of its factories.
The Lost Decade, Economic Reforms, and NAFTA (1980 to date)

In the economic history of Mexico, as well as in many other Latin American countries, the 1980s are known as the “lost decade.” From 1982 to 1988, the average rate of expansion of real GDP was zero and average inflation was nearly 90 percent; total income from wages declined an average of 8.1 percent. Government spending on education and health dropped by a cumulative 30.2 percent and 23.9 percent, respectively.\(^{46}\) This lack of growth was the result of three factors: the reality check of two administrations running large fiscal deficits financed by foreign borrowing; the international debt crisis of 1982; and the 1986 oil price shock.

The Miguel de la Madrid administration (1982-1988) tried to regain macroeconomic stability and resume economic growth. It did so at first with an orthodox stabilization plan that included the reduction of trade and current account deficits. This plan, however, could not control high inflation rates. Therefore, in 1987, de la Madrid decided to launch a heterodox stabilization plan known as Economic Solidarity Pact (Pacto de Solidaridad Económica). The Pacto’s objective was to control inflation through a combination of wage and price controls, a nominal exchange rate freeze, and tight fiscal and monetary policy. This came in tandem with market liberalization reforms, especially in the areas of trade, industrial policy, and privatization. This plan successfully stabilized inflation and reactivated the economy.\(^{47}\)

The economic crisis further depressed the living standards and employment opportunities of lower income groups, especially in the states struggling to improve their economies. Regional disparities grew larger and poverty and income inequality levels increased. The rise in government expenditures to foster social and economic growth during the 1970s had favored the convergence in rates of economic growth between the north and south; unfortunately, this trend was reversed once the government started liberalizing its policies in the mid-1980s (see Table 2). The increase in poverty and inequality levels stimulated migration from the poorer states to the richer northern states and to the United States. As part of its trade reform and industrial policies, the government announced a commitment to decrease dependence on oil revenues and to

\(^{46}\) Ibid., 146, 161.

\(^{47}\) Moreno-Brid and Ros, Development, 147.
promote non-oil exports. These factors, along with the devaluation of the exchange rate, fostered the rapid growth of maquiladoras during the 1980s.

The promotion of the maquiladora industry reflected a federal government initiative to transition from an industrialization model based exclusively on import substitution to an Asian-style “mixed-model” combining protection of the domestic market with export promotion. Since the 1970s, maquiladoras have been a driving force behind the growth of the export sector; their share of total exports increased from 15 percent in 1980 to about 37 percent in 1991 and 45 percent in 2006.

One disadvantage of maquiladoras is the lack of correlation between the rate of exports and that of value added, which is behind the fact that exports have not served as a strong engine of growth for the manufacturing sector. This is largely due to the fact that Mexico’s manufactured exports have become heavily dependent on imports, with somewhat reduced local content and weak linkages with domestic suppliers. Moreover, the jobs created by the maquiladoras have several disadvantages to the employees, and the results in performance they yield tend to be misleading when we assess their contribution to the betterment of the economy and the living standards of people who work in the sector. Jobs in this sector tend to use low-skill labor, produce little value-added, and tend to have little or stagnant labor productivity. Little or no productivity growth leaves low wage employment as the only way to expand the sector. Employers also tend to hire on a temporary basis. Because many of the occupations are relatively hazardous, employees can work for only a limited number of years and are often left with some form of permanent disability. In addition, in more recent years, in light of China’s entry into the World Trade Organization, there has been a reduced possibility for the maquiladora sector to expand any further. For these reasons, maquiladora workers are not likely to earn an income that would enable them to live above the poverty line.

During the 1980s, maquiladoras were deemed an efficient approach to export promotion. During the 1990s results were promising, and the sector yielded handsome profits to those who invested in it. Today it is clear that the development of this sector has produced mixed results.
Maquiladoras were profitable businesses and generated thousands of jobs that attracted workers, mainly women, to the northern states from central and southern Mexico. Still, the nature of these jobs created severe social problems in the localities where maquiladoras were launched. Migrants are usually attracted by the wages paid by the maquiladoras and, although wages are high compared to those in other regions of Mexico, so is the cost of living in northern Mexico. Maquiladora workers normally live in shantytowns near the industrial parks where they work. A well-known example of the dire conditions in which maquiladora workers live comes from the media coverage of the murders of young women in Ciudad Juárez. As the murder investigations began, the living conditions of maquiladora workers came to light.

There is also the issue of the environmental damage caused by the maquiladora industry. Studies since the 1990s have shown that maquiladoras produce waste that pollutes the nearby environment because waste disposal regulations are not enforced. This problem also involves other industries in the border region, and is another contentious issue that has not been fully addressed by the government. Still, in recent years binational initiatives have been put in place to study these problems and find ways to address them.48

As part of his economic reforms, President de la Madrid liberalized trade and in 1986 Mexico signed the General Agreement on Tariffs and Trade (GATT). The government’s commitment to decrease dependence on oil exports was successful in transforming trade by making trade grow through the expansion of non-oil exports. By late 1988, at the onset of the Carlos Salinas presidency (1988-1994), exports were predominantly manufactures and were growing rapidly. Unfortunately, given the surge of imports—a by-product of trade liberalization—the overall trade balance soon became negative.

Trade liberalization policies culminated with the signing of the North America Free Trade Agreement (NAFTA) in 1992. There were three main reasons for Mexico to sign NAFTA: 1) to boost Mexico’s trade with the United States and Canada; 2) to induce local and foreign firms (both within and outside of the NAFTA region) to invest in the production of tradable goods in Mexico in order to exploit the country’s potential as an export platform to the United States; and

48 See, for example, the US-Mexico Binational Center for Environmental Science and Toxicology.
3) to guarantee or lock in Mexico’s economic reforms. The first two reasons were particularly relevant to further the economic growth and development of the border economies.

Industrial policy reforms started slowly during the de la Madrid administration and gained importance during Salinas’ presidency (1988-92). These reforms included the elimination of production and credit subsidies, tax incentives, and a trade protection scheme as well as the trade performance requirement (on export percentage or local content) on their beneficiaries. It should be stressed that reforms were implemented in the midst of a collapse of public and private investment due to the 1982 debt crisis and the 1986 oil price shock. Trade liberalization was undertaken at a time when the national economy was at a weak point and the government was still attempting to correct deeply rooted structural problems such as technological gaps, vulnerability in the national innovation system, and lack of long-term financial resources, as well as insufficient investments to modernize local machinery and equipment.

Privatization of state-owned enterprises was also part of the economic reforms launched by Miguel de la Madrid and carried through by President Salinas. This process was completed in two stages between 1983-1989 and 1989-1992. During the first stage, the objectives were to reduce the deficit in public finance and to be more selective in the areas of the economy where the state would participate. The selected areas were those in which the state had a comparative advantage—that is, where social rates of return were significantly higher than private ones. This stage of privatization entailed the sale, liquidation, or transfer of small- and medium-size enterprises that had been acquired or created by the government; these enterprises were large in numbers but not in value. The reason for the second stage of privatization (1989-1992) was the belief that in previous administrations, government intervention in the economy had been excessive and had created distortions in the economy that hampered growth and produced inflation. During this stage, banks were re-privatized along with other enterprises such as the national telephone company, Teléfonos de México (TELMEX). The state enterprises sold during this stage were more valuable than those sold during the previous stage (1983-1989).

49 Moreno Brid and Ros, Development, 165.
50 Moreno-Brid and Ros, Development, 169.
51 Ibid., 170.
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Economic reforms led to the gradual appreciation of the Mexican peso, which led once again to an overvaluation of the exchange rate. Despite the pressures that such an overvaluation generated, Salinas did not want to devalue the exchange rate during his presidency. This was drastically corrected in December 1994, less than a month after Salinas left office. Mexico suffered yet another financial crisis at this time.

At the national level, the effects of economic reforms and NAFTA have been mixed. They have failed to bring benefits to the extent expected. Manufacturing, transportation, warehousing, and communications have grown rapidly. In contrast, agriculture, fishing, forestry, commerce, tourism, and services have grown at much lower rates.\textsuperscript{52} Despite the overall disappointing results of the economic model of the past 25 years, the northern border states make up the region that has had the best performance and that has been able to take advantage of these structural changes. Some economists assert that since 1985 there has been a divergence in the economic growth between the north and the central and southern regions of Mexico.\textsuperscript{53} Growth disparities between northern states and the rest of the country are not as evident at first glance because in some northern states, the main economic activities are those that have observed lower growth rates (see Table 1).\textsuperscript{54} In general, the economies of border states are driven by export-led growth and are important recipients of foreign direct investment (see Table 1). These are two basic components of Mexican economic growth.

Still, there are emerging problems that pose a challenge to state governments and that can damage the economic performance of the northern region. As mentioned before, there has been a rapid growth in population due to the continuous inflow of people from central and southern states searching for jobs in the northern region or in the United States. (Let us remember that not all people who go north to migrate to the United States end up doing so.) Border state governments face the challenge of creating opportunities for this incoming population to integrate itself into the formal economy, as well providing them with adequate public services such as water, electricity, paved roads, housing, schools, and transportation infrastructure. Otherwise, there will be an increase in the number of people living in poverty and employed in

\textsuperscript{52} Messmacher, “Desigualdad Regional,” 22.
\textsuperscript{53} Chiquiar, “Why Mexico’s Regional Income Convergence,” 258.
\textsuperscript{54} Messmacher, “Desigualdad,” 22.
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the informal sector.\textsuperscript{55} Moreover, the informal sector can include very enticing opportunities to participate in illicit activities such as the trafficking of people and drugs. For this reason, in recent years, border states have endured rising levels of violence and concern for personal safety.

Among the current challenges to the economic development of states along the northern border are rising levels of violence linked to drug trafficking. Scholarship on the topic shows that drug trafficking in the border states can be traced to the early twentieth century.\textsuperscript{56} Attempts by the U.S. government to control or eliminate the use of alcohol and drugs in the first decades of the twentieth century also spurred the profitable business of drug smuggling. Recent studies on the rise in drug trafficking show that Mexico has been trying to fight drug addiction since the 1930s, and that such policies have had to receive the tacit approval of the U.S. government, through diplomatic venues or bilateral agreements.\textsuperscript{57}

It is not the purpose of this study to trace the origins of drug trafficking or its evolution in the past decades. However, since this study does attempt to highlight the most relevant features of the development of the economies in the Mexican states that border the United States, it is important to mention that the conflicts related to the smuggling of illicit substances are as old as the establishment of the borders as we know them today. The conflict has escalated both as the governments on each side of the border have changed their perceptions about the uses and abuses of drugs and alcohol and have altered their policies and regulations toward their trafficking, and as smuggling techniques have become more sophisticated and demand has increased.

\textsuperscript{55} The informal sector is an economic sector that is neither taxed in any form however it is neither monitored by any form of government, and is not included in that government’s Gross National Product (GNP), as opposed to a formal economy. Examples are barter and gift economy. Although the informal economy is often associated with developing countries, where up to 60% of the labour force (with as much 40% of GDP) works, all economic systems contain an informal economy in some proportion. The term informal sector was used in many earlier studies, and has been mostly replaced in more recent studies which use the newer term.

\textsuperscript{56} Recio, “Drugs and Alcohol.”

\textsuperscript{57} In the late 1930s, during the Cárdenas presidency, Dr. Leopoldo Salazar Viniegra argued that marijuana did not provoke the effects that the Federal Bureau of Narcotics (FBN) asserted. Salazar Viniegra even argued in favor of the legalization of its use. The FBN pressured Mexican authorities against the passing of this initiative and eventually Salazar Viniegra was fired. See Meyer, “El gato,” May 27, 2010.
Conclusion

The northern border states have been a relatively prosperous region since Mexico began to industrialize during the last decades of the nineteenth century. In addition to the policies implemented during the Porfiriato, these states had the elements to thrive: natural resources, government investments in infrastructure, local capitalists willing to invest in the region, and a geographical proximity to the largest economy in the world. At the same time, the border states have not been immune to either the negative impact of various economic crises suffered in both Mexico and the United States. Their proximity to the United States makes the border states an excellent platform for entering U.S. markets, and since 1985 it is this region that has reaped the most benefits from the opening of the Mexican economy.

But the regional economy is also vulnerable to the ups and downs of the U.S. economy.\textsuperscript{58} The economic development of the northern border region since the launching of government reforms in the mid-1980s has yielded mixed results. The benefits include economic growth based on the expansion of productive sectors such as manufacturing and commercial agriculture, as well as the service sector. All of these sectors have created jobs. It should be noted that these benefits are not solely explainable by the region’s proximity to the United States.\textsuperscript{59} The northern states have faced challenges that include increased social problems associated with the quality and stability of the jobs created in different sectors; rising poverty levels; deterioration of the environment; and increasing violence related to drug trafficking. These problems are related to the fact that state governments face the constant challenge of keeping up with the needs of a rapidly growing population due to the constant flow of job seekers from the rest of the country; these needs include providing public utilities, education, and housing, among other concerns. The northern states have invested in social development programs with results that in some areas rank above the national level (see Table 3); however, their efforts and resources have been insufficient. The failure to meet the demand for services has meant, in part, that although the region is prosperous in terms of economic growth, high levels of inequality have been a primary cause of rising safety concerns in the region.

\textsuperscript{58} Chiquiar, “Why Mexico’s Regional Income Convergence,” 273.
\textsuperscript{59} Ibid., 273.
Many of the main economic features of the border states, both positive and negative, can be traced back to at least the last decades of the nineteenth century. Adopting a long-term perspective can help policymakers reflect on the origins of certain social and economic patterns, and better evaluate policies that have been successful and those that have not. Likewise, the longer view can identify the root causes of certain problems that hamper economic growth. By outlining from a historical perspective the evolution of both the national Mexican economy and the economies of the northern border states, it is possible to highlight the main factors shaping the economy of this region.
Map 1. Mexico
### Table 1. Economic activity of border states in 2006

<table>
<thead>
<tr>
<th></th>
<th>Baja California</th>
<th>Chihuahua</th>
<th>Coahuila</th>
<th>Nuevo León</th>
<th>Sonora</th>
<th>Tamaulipas</th>
<th>Jalisco</th>
<th>Veracruz</th>
<th>Mexico</th>
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<tbody>
<tr>
<td>Commerce</td>
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<td>33.2</td>
<td>35.3</td>
<td>25.8</td>
<td>33.5</td>
<td>23.8</td>
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<td>20.5</td>
<td>20.4</td>
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<td>19.4</td>
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<tr>
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<td>1.2</td>
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<td>4.4</td>
<td>9.3</td>
<td>3.6</td>
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<td>Electricity, gas &amp; water</td>
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<td>2.2</td>
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<td>3.3</td>
<td>0.6</td>
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<tr>
<td>Mining</td>
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<td>0.4</td>
<td>4.2</td>
<td>1.4</td>
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<td>Allocated Banking Services</td>
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<td>-0.4</td>
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<tr>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<td>Foreign direct investment, *</td>
<td>4.2%</td>
<td>5.0%</td>
<td>1.3%</td>
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<td>1.6%</td>
<td>1.6%</td>
<td>2.8%</td>
<td>0.4%</td>
<td>5.3%</td>
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Table 2. Per capita GDP by state

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<td>100.00</td>
<td>100.00</td>
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<td>Border</td>
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<td>129.28</td>
<td>135.73</td>
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<td>1.64</td>
<td>1.18</td>
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<td>0.85</td>
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<td>120.32</td>
<td>120.55</td>
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<td>1.62</td>
<td>0.81</td>
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<td>102.24</td>
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<td>3.08</td>
<td>3.71</td>
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<td>Nuevo León</td>
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<td>164.64</td>
<td>165.81</td>
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<td>1.47</td>
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<td>Sonora</td>
<td>138.44</td>
<td>119.50</td>
<td>114.79</td>
<td>123.96</td>
<td>0.83</td>
<td>1.36</td>
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<td>100.67</td>
<td>104.28</td>
<td>1.70</td>
<td>1.22</td>
<td>0.52</td>
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<td>Mexico City</td>
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<td>143.90</td>
<td>154.42</td>
<td>148.49</td>
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<td>-0.24</td>
<td>-1.52</td>
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Source: INEGI in Chiquiar, “Why Mexico’s regional income convergence broke down.”
### Table 3. Social indicators for Mexico and the northern border states

<table>
<thead>
<tr>
<th></th>
<th>Human capital indicators for individuals 15 years of age or older</th>
<th>Infrastructure indicators</th>
<th>Economic orientation</th>
<th>Manufacturing plants with 250 or more employees</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Average schooling rate</td>
<td>Illiteracy rate</td>
<td>Railroads 100/km²</td>
<td>Telephones/100 persons</td>
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<td>5.58</td>
<td>14.62</td>
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<td>10.08</td>
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<td>6.33</td>
<td>6.84</td>
<td>1.14</td>
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<td>5.68</td>
<td>0.29</td>
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<td>1.18</td>
<td>11.92</td>
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Source: INEGI in Chiquiar, “Why Mexico’s regional income convergence broke down.”
Bibliography


Alicia Hernández Chávez, Mexico, A Brief History (Los Angeles: University of California Press, 2006).


Sanford Mosk, Industrial Revolution in Mexico (Berkeley: University of California Press, 1950).