ECONOMICS / MEXICO

"This comprehensive assessment of Mexico's economic reform process and its consequences will become a standard in its field. It raises new questions about the Mexican case and the impact of economic liberalization over time. The themes and data are fresh, and the authors are well-known experts in their fields." *Manuel Pastor, Jr., University of California, Santa Cruz*

Since the 1980s, Mexico has alternately served as a model of structural economic reform and as a cautionary example of the limitations associated with market-led development. Because of the importance of the Mexican experience in continuing debates about options available to developing countries, the twenty-three contributors to this book provide a comprehensive, interdisciplinary assessment of the principal economic and social policies adopted by Mexico during the 1980s and 1990s.

Mexico was a leader in the shift away from state-led industrialization and in the adoption of market-oriented policies. As a consequence, Mexico emerged as Latin America's largest exporter of manufactured goods, which provided the country's most dynamic source of economic growth. Yet trade and investment opening also significantly increased the Mexican economy's vulnerability to external shocks. A profound financial crisis in 1994–1995 deeply affected Mexico's economic stability, and it raised persistent questions about whether the country's new economic model is capable of achieving sustained growth and equitable socioeconomic development.

The topics covered in the book are (1) macroeconomic and financial policies, including the impact of the adjustment process on growth, inflation, foreign and domestic debt burdens, the Mexican banking system, and foreign investment; (2) trade, export-led growth, and industrial policies, with attention to key actors and strategies behind the rapid expansion of Mexican manufactured exports and the limitations of this export-led growth model for national development; (3) social policies and rural development issues, focusing on education, health care, pensions, and problems affecting rural Mexico; and (4) inequality, employment and wage problems, and poverty, notably income distribution and poverty trends, the efficacy of poverty-alleviation policies, urban and regional disparities, and the effects of economic liberalization on employment and wage levels. A final overview section analyzes the Mexican development experience of the 1980s and 1990s in historical and comparative context.

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MIDDLEBROOK and ZEPEDA

CONFRONTING DEVELOPMENT

Assessing Mexico's Economic and Social Policy Challenges

STANFORD

Center for U.S.–Mexican Studies

CONFRONTING DEVELOPMENT

Assessing Mexico's Economic and Social Policy Challenges

EDITED BY Kevin J. Middlebrook AND Eduardo Zepeda

Contents

Figures and Tables

FIGURES

TABLES

Acronyms

ADE	Programa de Apoyo Inmediato a Deudores / Immediate Support Program for Debtors
AFORE	Administrador de Fondos para el Retiro / Retirement Fund Administrator
ALADI	Asociación Latinoamericana de Integración / Latin American Integration Association
ANUIES	Asociación Nacional de Universidades e Instituciones de Enseñanza Superior / National Association of Universities and Institutions of Higher Education
BANCOMEXT	Banco Nacional de Comercio Exterior / National Foreign Trade Bank
BANRURAL	Banco Nacional de Crédito Rural / National Rural Credit Bank
BANXICO	Banco de México / Bank of Mexico
CAPUFE	Caminos y Puentes Federales / Federal Roads and Bridges
CBI	Caribbean Basin Initiative
CENEVAL	Centro Nacional de Evaluación de la Educación Superior / National Center for the Evaluation of Higher Education
CEPAL	Comisión Económica para América Latina y el Caribe / Economic Commission for Latin America and the Caribbean
CEPPEMS	Comisión Estatal de Planeación y Programación de la Educación Media Superior / State Commission for Planning and Programming of Higher Middle Education
CNBV	Comisión Nacional Bancaria y de Valores / National Banking and Securities Commission
CNIE	Comisión Nacional de Inversiones Extranjeras / National Foreign Investment Commission
COMPITE	Comité Nacional de Productividad e Innovación Tecnológica / National Committee for Productivity and Technological Innovation

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7

Industrial Policy, Regional Trends, and Structural Change in Mexico's Manufacturing Sector

Enrique Dussel Peters

INTRODUCTION

The constancy and coherence of Mexico's macroeconomic and industrial policies since 1994 have made the country an international showcase for structural adjustment and quick recovery from economic crisis. Vindicated by the actions of multilateral agencies and in international public opinion, during the late 1990s Mexico experienced significant growth in exports, productivity, and foreign investment, along with increased integration with the U.S. economy following implementation of the North American Free Trade Agreement (NAFTA).

This chapter has two broad goals. On the one hand, it outlines the development strategy that Mexico adopted in 1988 and continues to follow. This topic is important because other policy issues, including those concerning the manufacturing sector, are integral and functional parts of this overall socioeconomic strategy. On the other hand, the chapter analyzes industrial policy instruments along with conditions and changes in the manufacturing sector since 1988. In this context, it also examines several emerging regional trends that shed light on issues of economic sustainability.

The discussion proceeds in four sections. The first overviews Mexico's development strategy since 1988. Along with the logics, objectives, and context of liberalization, this section highlights the functional role of industrial policy since 1988 and reviews the key principles that guided it during the 1995–2000 period. This section concludes with a brief examination of contemporary industrial policy instruments. The second section draws on available data to analyze the general conditions of Mexico's manufacturing sector from 1988 through the late 1990s. The discussion covers trade, productivity, employment, and real

wage issues. The third section examines recent regional development patterns in Mexico, focusing on foreign direct investment (FDI) data, gross domestic product (GDP), and GDP per capita. The fourth and final section considers the increasing regional polarization of manufacturing, as well as the implications of this development for economic sustainability and the impact on Mexico's macroeconomy.

ECONOMIC LIBERALIZATION AND INDUSTRIAL POLICY

Mexico's economic crisis of 1982, whose immediate catalyst was the inability of the private and public sectors to service their foreign debt, was not so much a "liquidity" crisis as a crisis of the import-substitution industrialization (ISI) model. Mexico's agricultural trade surpluses since the 1940s,[1] petroleum export revenues, and massive international credits since the late 1970s were insufficient to finance the crisis posed by ISI's growing unsustainability (Brailovsky, Clark, and Warman 1989; Ros 1991). Beginning in 1982, international conditions (particularly in the United States) prevented Mexico from "recycling" old international loans into new ones. Paradoxically, it was the demand for capital that the U.S. economy generated in international markets that drove interest rates up and changed the direction of capital flows toward the United States and other Organisation for Economic Co-operation and Development (OECD) nations. This situation resulted in a worldwide inability to service external debt, provoking the international debt crisis of the 1980s (Dussel Peters 1993). Moreover, a doubling in petroleum prices in 1979–1980 prompted overly optimistic estimates of Mexico's future oil revenues (Gurría Treviño 1993), an anticipated income that disappeared when petroleum prices began to fall in 1981 and eventually collapsed in 1986.

Mexico's efforts to manage the impact of economic crisis during the 1982–1987 period—including pursuing a policy of gradual economic liberalization—proved inadequate, and by 1987 the country had an annual inflation rate of 159 percent and a fiscal deficit of 16.1 percent of GDP. Investment and overall economic activity were in a free fall, while the country was simultaneously feeling increasing pressure from multilateral lending agencies and from the weight of external debt service. It is from this perspective that December 1987 stands as the end of the ISI crisis and the beginning of a new socioeconomic development strategy—liberalization.[2]

[1] These surpluses gave way to deficits in the late 1960s.

[2] Of course, as subsequent parts of this discussion make clear, some elements of liberalization appeared before 1987. These included tariff reduction, a relaxation of some controls on foreign direct investment, and membership in the General Agreement on Tariffs and Trade (GATT). However, it was with the announcement of the first of a series of "economic pacts" in December 1987 that liberalization measures were presented as a new development path.

It is important to recall that liberalization's conceptual core is export-oriented industrialization. The model generally assumes that export growth is linked to economic growth and development, and that the private manufacturing sector—through exports—is an engine driving growth and development. For an in-depth analysis of the liberalization model, see Dussel Peters 1997.

The attractions of export-oriented industrialization, in combination with Mexican policy makers' numerous links with U.S. academic institutions and government officials, favored the adoption of a liberalization strategy, which was implemented by the administration of President Carlos Salinas de Gortari (1988–1994) beginning in 1988. The policy shift was consolidated through a series of "economic pacts" negotiated jointly by the government, union officials, and the private sector. The pacts—which included wage ceilings and allowed for a retrospective indexing of wages—became the centerpiece of the Salinas administration's liberalization strategy. This strategy—carried forward by President Ernesto Zedillo (1994–2000)—was based on the following pillars (Aspe Armella 1993; Córdoba 1991; Gurría Treviño 1993; Martínez and Fárber 1994; Zabludovsky 1990; and Zedillo 1994):

- Macroeconomic stabilization was to induce a process of microeconomic and sectoral growth and development. All sector-specific development policies were to be abolished in favor of sector-neutral policies. Significant savings were expected from the resources previously destined for direct or indirect economic subsidies.
- As an extension of the preceding point, the government's top priority was to stabilize the macroeconomy. Starting in 1988, the government made controlling inflation[3] (or relative prices) and the fiscal deficit and attracting foreign investment the main macroeconomic priorities in its liberalization strategy, backed by the Banco de México's restrictive monetary and credit policies.[4]

[3] As Aspe Armella (1993) stresses, lowering inflation was the crucial variable given that high inflation rates, caused in general by domestic demand but particularly by the inertial tendencies of real wages, did not allow for improvements in the fiscal deficit during the 1982–1987 period.

[4] Controlling inflation and attracting investment were to finance the new strategy because other sources—petroleum revenues and extensive foreign credits—were either unavailable or insufficient.

- Nominal and real exchange rates are a result of controlling the rate of inflation ("the real exchange rate as an anti-inflationary anchor"). That is, because controlling inflation is the main macroeconomic priority under liberalization, the government will not permit devaluations, which push up inflation rates because they raise the costs of imported inputs.
- Supported by the reprivatization of the banking system beginning in the mid-1980s and the massive privatization of state-owned industries, the Mexican private sector was to lead the economy out of the "lost decade" of the 1980s through exports. The wholesale import liberalization process (initiated at the end of 1985) was supposed to support private manufacturers—who were losing the domestic market to cheaper imports—and orient them toward exports.
- Finally, government policies toward organized labor were of the utmost importance. As reflected in the economic stabilization pacts, only government-friendly labor unions were deemed sufficiently worthy to negotiate with private-sector firms and the government; other unions were marginalized. This process, which included harsh government attacks on politically independent labor unions, made national wage negotiations possible within the framework of successive economic pacts.

The Mexican government persisted in this liberalization strategy with few interruptions or exceptions.[5] The overall elimination of subsidies (culminating in early 1999 with the suspension of subsidies on tortillas and other basic commodities), public services, and credits reflects this process.

Industrial Policy since 1988

There are several reasons why the general context of economic liberalization is significant for industrial policy. First, Mexico's export-oriented manufacturing sector is viewed as the motor for this new development strategy. Its specific form of integration into global markets is, therefore, crucially important for the economy. Second, given inflation and

[5] Probably the most significant inconsistency in the liberalization strategy has been the government's bailout of the financial sector, at an estimated cost of about 20 percent of GDP in 1999. From the strict perspective of liberalization strategy, this massive public intervention ran contrary to the socioeconomic model implemented beginning in 1988.

fiscal deficit constraints, the government is not expected to provide supports that negatively affect these macroeconomic variables. Thus for the manufacturing sector, as for any sector, the government will prefer industrial policy instruments that do not involve direct expenditures. Third, controlling inflation will result in an overvaluation of the real exchange rate.[6] This is particularly significant for inter-industry trade, where an overvalued exchange rate will have a negative effect on exports. Finally, dependence upon foreign investments (both portfolio investment and FDI) is significant because, at least until 1994, Mexico attracted these funds by offering high real interest rates in U.S. dollars. Yet these rates carried great costs for the Mexican economy. Although they succeeded in attracting foreign investment, they generated negative incentives for domestic investment in Mexico.

Until the late 1970s, Mexico's industrial and foreign trade policies were strongly interlinked, and together they formed an important part of import-substitution industrialization. Developing the manufacturing sector was considered essential for Mexico's modernization, and foreign trade policy was understood to be a tool that could enhance import substitution and thus promote industrial self-sufficiency and economic independence in the long run. "Peaceful coexistence" with transnational corporations (TNCs) and an array of trade policy instruments—preferential exchange rates, import licenses, and price controls, which in many cases resulted in the prohibition of certain imports—were of crucial importance for supporting the private manufacturing sector. Direct government interventions in "strategic" industries were also key because they provided infrastructure and other vital inputs. Labor laws and Mexico's overall political stability were also important underpinnings of the relatively successful period of ISI growth that culminated in the late 1970s.

However, industrial and trade policies under ISI proved increasingly ineffective in both microeconomic and macroeconomic terms. This "truncated" industrialization was the result of the Mexican private manufacturing sector's inability to develop beyond the first stage of import-substitution industrialization. In the 1980s, after more than thirty years of government support, Mexico's domestic manufacturers were still significantly outperformed by transnational corporations in terms of profit rates, GDP growth, and labor productivity (Blomström and Wolff 1989; Maddison 1989). Nevertheless, it was the dynamic

[6] Independent of tight monetary and credit policies, the real exchange rate must be overvalued as a result of controlling the rate of inflation. Otherwise, depreciation of the real exchange rate will not allow for inflation control because Mexico's economy depends heavily upon imported goods.

TNC sector that produced most of the country's current account deficit, accounting for a minimum of 48.9 percent of the total trade deficit in various years between 1970 and 1980 (Peres 1990: 23ff.).[7] Thus the industrial structure that had evolved after the 1940s, producing impressive growth in labor and capital productivity, also created a substantial deficit in the balance of trade. The 1980–1981 trade deficit became one of the main sources of Mexico's current account deficit that threatened the country's ability to service its foreign debt (Dussel Peters 1997: 133ff.).

Industrial and trade policies after 1988 were designed to serve the objectives of liberalization, especially controlling the fiscal deficit and eliminating subsidies to permit a "market-friendly" allocation of resources. "Horizontal" policies—that is, policies that affect all firms and sectors equally and avoid preferences or subsidies—became the catchword among those who made industrial and trade policy.[8] Assuming that macroeconomic changes would induce microeconomic and structural transformations in manufacturing, the government's industrial and trade policies aimed to liberalize imports, achieve overall economic deregulation, and abolish price controls, subsidies, direct state ownership of firms, and preexisting sectoral programs.

Most notably, the government reduced average import tariffs to 11.8 percent (from 24.5 percent in 1986), and overall tariff levels fell dramatically. The privatization of state-owned companies generated revenues of US$30 billion, and by 1993 the number of state-owned enterprises had been reduced from 1,155 to just 217. The Salinas administration reformed the 1973 foreign investment law to make it substantially more flexible, granting automatic approval for majority foreign investment in activities not specifically reserved by the 1973 law for Mexican control and introducing a faster approval process for new investment projects. These amendments, in addition to other measures to promote foreign investment in Mexico, were formally incorporated into a new investment law in 1993 (Dussel Peters 1997; Máttar and Peres 1997).

Although such measures had been recasting the Mexican economy since 1988, the NAFTA brought significant changes, particularly for the

[7] The TNCs accounted for a high proportion of intra-industry trade, reflecting their specialization in sectors in which Mexico did not have traditional comparative advantages, such as electronic goods, automobiles, and auto parts (Ros 1991; Ruiz Durán, Dussel Peters, and Taniura 1997). These industries had been characterized since the 1970s by economies of scale and favorable access to the U.S. and world markets.

[8] For a detailed description of issues presented in this chapter, see Poder Ejecutivo Federal 1996.

manufacturing sector. First, the NAFTA commits its members to overall trade and investment deregulation, which for Mexico has meant continuing its liberalization strategy. By the year 2008, most goods that Mexico imports from the United States and Canada will enter duty free, providing a strong incentive to increase trade with its NAFTA partners. Second, the NAFTA requires its signatories to treat all firms and investors equally. That is, the Mexican government no longer has the discretionary power to implement policies that favor national firms with specific characteristics (such as geographic location, sector, size, degree of local content, and so on).

In the aftermath of Mexico's December 1994 financial crisis, the new Program for Industrial and Foreign Trade Policy (PROPICE) highlighted the need to achieve macroeconomic stabilization and make exports the engine of GDP and job growth.[9] PROPICE pointed to the challenges presented by globalization, import liberalization, and rising foreign investments, and it recognized that events like China's and India's integration into world markets held important implications for Mexico, in the form of an excess supply of labor-intensive products and a consequent negative impact on prospects for raising workers' wages in these sectors (Poder Ejecutivo Federal 1996: 15). Finally, the policy documents announcing PROPICE emphasized the need to generate productive linkages and to relocate geographically portions of the manufacturing sector in Mexico.

Several of the recommendations outlined in the PROPICE documents are worth highlighting:

- Exports will continue to constitute the basis for Mexico's future economic growth, making a positive contribution to productivity, employment, and income distribution. The export-promoting mechanisms established during 1988–1994, including those affecting the *maquiladora* (in-bond processing) sector and direct financial support for manufacturing, will be continued. The government will collaborate with private firms in selecting priority sectors and markets for promotion (Poder Ejecutivo Federal 1996: 141).
- There is a need to build production linkages and manufacturing clusters and to recover the domestic market, particularly through the promotion of micro, small, and medium-size firms (pp. 49ff).

[9] PROPICE 1995–2000 stressed that industrial and trade policies cannot "be accomplished successfully through the spontaneous action of market forces. Instead, they require an active industrial policy that generates the coordinating social mechanisms; collaboration; and support for individual actions through the concertation of the factors of production" (Poder Ejecutivo Federal 1996: 33).

Substitution of imports in sectors like electronics and automobiles could produce up to US$10 billion in savings.

- Regional perspectives on industrial promotion are important. For example, nonexporting regions could become suppliers of raw materials and consumption goods for cities and regions actively engaged in export production (p. 56).
- Business institutions and chambers of industry and commerce should be included as active participants in decision making regarding industrial policy, as well as in the implementation of such policies (p. 174).[10]

Since 1988, though, Mexico's liberalization strategy has at best given secondary importance to industrial and trade policy; indeed, for many government economic officials, the best industrial policy was none at all. Given that liberalization's core priority has been macroeconomic stabilization, Mexico's "new" trade and industrial policies were perfectly consistent with the overall goal of generating a market-friendly environment for the private export-oriented sector. Although some more focused programs were developed in response to the 1994-1995 financial crisis, most of them were set aside after 1996 as economic growth resumed.

Industrial Policy Instruments

Mexico's industrial policy since 1988 has, with few exceptions, been consistent with a strategy of economic liberalization. Traditional export-support programs have been eliminated and replaced by "self-financing" programs. The most important policy tools have been information services for production and marketing (especially of exports), along with programs to pair potential suppliers or exporters with international buyers (Dussel Peters 1997).[11] The elimination of price controls has been another important measure.[12] Moreover, after

[10] However, most of these proposals were sidelined when the economy began to recover in 1996, as reflected in rising GDP and booming exports.

[11] It must be remembered that Mexico's governmental institutions generally have not been strictly accountable to the public, and this extends to the policies and instruments that have been applied in manufacturing since the late 1980s, including the performance of Mexican development banks. Thus any evaluation of these mechanisms and instruments must be limited in nature until additional information becomes available.

[12] Some analysts argue that price controls "impose high costs on producers and limit competition through unjustifiably elevated prices; discriminate among economic actors; discourage productivity; and result in an inefficient allocation of resources" (Martínez and Fárber 1994: 11). Also see Sánchez Ugarte, Fernández Pérez, and Pérez Motta 1994; SECOFI 1994.

1988 Mexico's established development banks—BANCOMEXT and NAFIN, which in preceding periods financed company-level and sectoral-level projects according to the industrial priorities and sectors identified as "strategic"—shifted to lending under market conditions (CEPAL 1992).[13] Local-content requirements for automobiles, auto parts, and electronics were being phased out gradually before 1994, and eventually they will be eliminated altogether under the NAFTA rules.[14]

Most of the industrial promotion programs in place in the late 1990s did not place a direct fiscal burden on the government. Instead, they sought to facilitate firms' access to inputs for products to be reexported, including the maquiladora program and the Program of Temporary Imports to Produce Export Goods (PITEX). The following is a listing of other programs that merit special mention:[15]

- The Program to Promote Industrial Clusters (Programa para Promover Agrupamientos Industriales), initiated by the Ministry of Commerce and Industrial Development (SECOFI) in 1998, was one of the most significant programs established after 1988. Based on a study of nine clusters in several Mexican states,[16] the program sought to promote a common vision among business, state governments, and the federal government, as well as to take advantage of local and regional specialization patterns and to strengthen linkages with other firms and sectors. This program generally did not include financing, but it did not prevent firms from participating in other programs.

[13] Between 1994 and 1998, Mexico's development banks reduced their staff by 34.4 percent and cut their lending by 4.2 percent (data obtained by the author from development banks; see also *El Financiero*, March 16, 1999, p. 3A).

[14] Interestingly, the several programs that remained in effect during 1988–1994 were directed to sectors dominated by transnational corporations, such as automobiles and computers.

[15] Most of the information on these programs was obtained directly from SECOFI and Nacional Financiera. Also see http://www.spice.gob.mx, http://www.centrocrece.org.mx, and http://www.nafin.gob.mx/desarrollo.html.

[16] These clusters included the garment industry (in Durango, Hidalgo, Jalisco, Oaxaca, and other states), seafood processing (Baja California Sur, Chiapas, and Sinaloa), the automobile and auto parts industries (Nuevo León and Aguascalientes), machine tools (San Luis Potosí), and construction materials (Chihuahua).

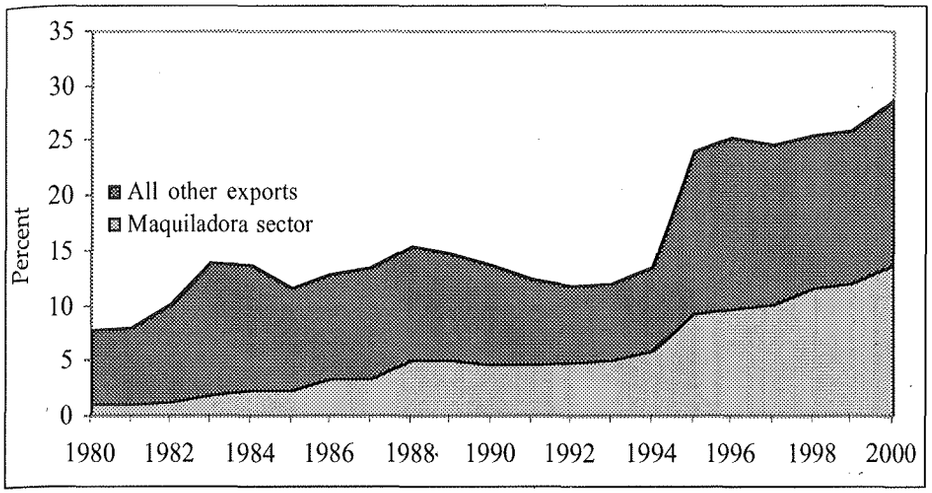
- Beginning in the mid-1990s, the network of Regional Centers for Business Competitiveness (CRECE) offered consulting support to micro, small, and midsize enterprises that were 100 percent Mexican owned, established in Mexico, and had at least two years in operation. CRECE's overall objective was to solve these firms' technical and organizational problems. It offered financial consulting that included an evaluation and overall diagnosis of the firm, as well as suggestions to increase competitiveness. Regional business chambers and SECOFI together provided the financing for CRECE. By June 1999, CRECE was established in all Mexican states and had provided support to more than 5,150 small and midsize firms—an average of about 160 firms per state. These firms increased their income by 33 percent on average, preserved some 20,000 jobs, and created almost 2,000 new jobs.
- The National Committee for Productivity and Technological Innovation (COMPITE) was created in 1996. It offered specialized courses for manufacturers, of which the firm paid half the cost (about US$1,500 in 1999). By 1999, COMPITE had conducted more than 800 of these courses—on just-in-time inventory, inventory optimization, new equipment, and space- and cost-saving measures. In some cases, firms participating in the program increased their productivity by over 100 percent.
- The Program for Subcontractor Development (Programa de Desarrollo de Proveedores), established in March 1999 by SECOFI and NAFIN, was one of Mexico's most important new industrial programs. To speed the development of forward and backward value-added linkages, this program provided quick working capital for subcontracting firms. NAFIN also provided automatic guarantees for commercial banks as well as direct loans for demonstration processes or products.[17] The program initially offered these options to firms subcontracting to the government. Forty-three such agreements were signed in 1999–2000.

STRUCTURAL CHANGES IN MEXICO'S MANUFACTURING SECTOR

Mexico's macroeconomic and industrial policies since 1988 have accorded particular importance to export promotion for all economic units (firms, regions, and the country as a whole). The following sections analyze the performance of Mexico's manufacturing industry from

[17] These loans were limited to 50 percent of the value of the contract or approximately US$650,000.

FIGURE 7.1. Exports of Goods and Services as a Proportion of Mexico's Gross Domestic Product, 1980–2000



Source: Author's calculations based on INEGI data (www.inegi.gob.mx).

this perspective, with a special focus on exporting sectors. The first of the following subsections examines general trends in Mexican manufacturing, and their relevance for macroeconomic evolution; sectoral and firm-level data reflect some of these trends. The second subsection describes key characteristics of Mexico's export-oriented subsectors.

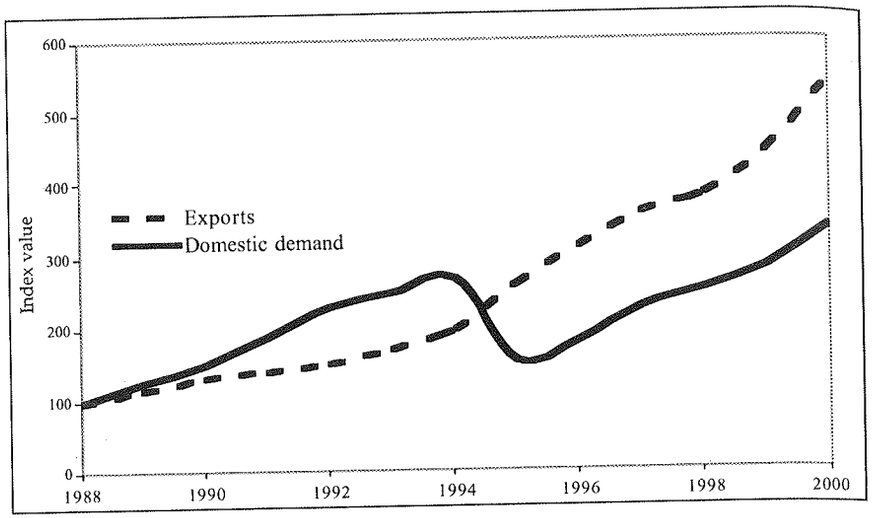
General Trends, 1988–2000

Since 1988, exports have been the leading—indeed, practically the only—component of Mexico's economic growth. GDP rose at an annual average inflation-adjusted rate of 3.6 percent from 1988 to 2000; exports increased at an average annual rate of 15.1 percent over the same period. Moreover, exports as a share of GDP have increased substantially since 1988, from less than 20 percent in the 1980s to over 25 percent since 1995 (see figure 7.1). This contrasts with domestic demand,[18] which has remained relatively flat or increased only moderately since 1994 (see figure 7. 2).

Mexico's export performance as a result of liberalization should be viewed from at least two different perspectives: firms' performance acc-

[18] Domestic demand was calculated as the coefficient of GDP minus exports and imports.

FIGURE 7.2. Index of Mexico's Exports and Domestic Demand, 1988–2000 (1988=100)



Source: Author's calculations based on INEGI data (www.inegi.gob.mx).

ording to their size, and aggregated firm-level data. Data from the Mexican Social Security Institute (IMSS) concerning employment in micro, small, midsize, and large manufacturing firms permit us to draw some preliminary conclusions regarding the impact of liberalization policy (see tables 7.1 and 7.2).[19]

- Micro, small, and midsize firms accounted for 97.9 percent of all manufacturing firms in operation during the period 1988–1998.

[19] IMSS data have several advantages (and limitations) vis-à-vis those from other sources. By definition, IMSS-affiliated workers include both independent workers and those employed under a collective contract. IMSS employment data allow for comparisons of changes in employment patterns since 1980 at the regional and national levels, and they can be disaggregated into employment in micro, small, midsize, and large firms and then correlated with the number of firms. However, IMSS figures only include a fraction of total employment. Whereas INEGI's figure for total employment in 1996 was 28.3 million (INEGI 1999), the IMSS figure was 11.3 million, covering only Mexico's "most formal" labor market. Nevertheless, these differences largely disappear for manufacturing, where INEGI counted 3.3 million employed in 1996, versus 3.4 million according to the IMSS.

The 1988–1998 IMSS classifications of micro, small, midsize, and large firms appear as notes in tables 7.1 and 7.2. In March 1999, IMSS revised the classification as follows: micro firms, 1–30 workers; small firms, 31–100 employees; midsize firms, 101–500 workers; large firms, more than 500 employees.

- In general, employment rose at an annual average of 3.6 percent in 1988–1998, significantly below the annual growth rate of Mexico's economically active population, which has been above 5 percent since 1988 (Dussel Peters 2000).
- Large firms accounted for significantly more job creation than micro, small, and midsize firms. During the 1988–1998 period, employment in large firms rose at an average annual rate of 4.9 percent, more than twice the 2.0 percent found in micro, small, and midsize firms.
- As a result, the share of total employment corresponding to micro, small, and midsize firms fell from 49.8 percent in 1988 and 51.0 percent in 1992 to 42.8 percent in 1998. This dramatic shift in employment patterns reflects the difficulties that liberalization has posed for smaller firms.
- On the other hand, large firms (which numbered 3,165, or 2.5 percent of total manufacturing establishments, in 1998) accounted for 57.2 percent of total employment in 1998, some seven percentage points above 1988 levels.
- Even in terms of the creation of new business establishments, large firms outperformed micro, small, and midsize firms, with an average annual growth rate of 4.2 percent over the 1988–1998 period.

An examination of the structure and dynamics of Mexico's leading exporters—most of them manufacturing firms, including maquiladora plants—for 1993–1999 reveals the following (see tables 7.3 and 7.4):

- Mexican exports are highly concentrated. During the 1993–1999 period, between 264 and 302 firms accounted for 93.1 percent of total exports.
- The maquiladoras' share of exports has increased importantly. Maquiladora exports for the period increased by 17.5 percent annually and accounted for 46.7 percent of all exports in 1999.
- Majority-foreign-owned manufacturing firms represented the most dynamic part of the export sector. They increased their share of total exports from 14.4 percent in 1993 to 16.9 percent in 1999. In contrast, the leading domestic firms' share of total exports dropped from 35.8 percent in 1993 to 25.3 percent in 1999.[20]

[20] Falling petroleum prices accounted for part of this decline during the 1997-1999 period.

TABLE 7.1. Business Establishments and Employment, by Firm Size, in Mexico's Manufacturing Sector, 1988–1998
(percentage of total)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1988–1998 average
						Business Establishments						
Micro	77.1	77.4	78.5	79.3	79.9	80.5	80.6	81.2	79.9	79.4	78.8	79.4
Small	17.8	17.4	16.7	16.1	15.7	15.1	14.8	14.2	15.0	15.3	15.6	15.7
Midsize	3.0	3.0	2.8	2.7	2.6	2.6	2.7	2.7	2.9	2.9	3.0	2.8
Subtotal	97.9	97.8	98.0	98.1	98.1	98.2	98.1	98.0	97.8	97.6	97.5	97.9
Large	2.1	2.2	2.0	1.9	1.9	1.8	1.9	2.0	2.2	2.4	2.5	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
						Employment						
Micro	11.0	10.9	11.8	12.2	12.7	12.8	12.2	11.9	10.9	10.4	9.9	11.5
Small	23.0	22.2	22.6	22.4	22.7	22.2	20.9	19.9	19.1	18.7	18.2	21.0
Midsize	15.8	16.1	15.7	15.6	15.6	15.7	15.7	15.6	15.3	14.8	14.7	15.5
Subtotal	49.8	49.3	50.0	50.2	51.0	50.8	48.9	47.4	45.4	48.3	42.8	47.9
Large	50.2	50.7	50.0	49.8	49.0	49.2	51.1	52.6	54.6	56.2	57.2	52.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author's calculations based on Instituto Mexicano del Seguro Social (IMSS) data.

Note: In the IMSS classification, micro firms are defined as those employing between 1 and 15 workers; small firms, 16 to 100 employees; midsize firms, 101 to 250 workers; large firms, more than 250 employees.

TABLE 7.2. Annual Growth Rate in Business Establishments and Employment in Mexico's Manufacturing Sector, 1988–1998[1]

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1988–1998 average
						Business Establishments						
Micro	–	6.3	13.8	7.7	1.8	-2.1	-1.3	-4.9	0.4	4.1	2.6	2.7
Small	–	3.5	7.7	3.0	-1.9	-6.3	-3.0	-9.9	7.8	6.9	5.9	1.2
Midsize	–	9.1	1.8	3.0	-2.0	-4.0	2.1	-5.6	10.9	5.8	7.9	2.8
Subtotal	–	5.9	12.3	6.8	1.1	-2.9	-1.5	-5.7	1.8	4.6	3.3	2.5
Large	–	8.3	4.7	1.7	-2.5	-4.1	3.4	-2.6	15.1	11.6	7.9	4.2
Total	–	5.9	12.2	6.7	1.0	-2.9	-1.4	-5.6	2.0	4.8	3.4	2.5
						Employment						
Micro	–	6.7	13.6	7.3	0.8	-3.3	-2.0	-7.4	2.7	4.7	3.5	2.5
Small	–	4.0	6.7	2.6	-2.1	-6.0	-3.2	-9.4	7.7	7.6	5.9	1.2
Midsize	–	9.2	2.3	2.4	-2.7	-3.4	2.7	-5.4	9.9	6.2	8.6	2.8
Subtotal	–	6.2	6.8	3.6	-1.6	-4.5	-1.1	-7.6	7.2	6.4	6.2	2.0
Large	–	8.4	3.8	2.5	-4.5	-3.6	6.7	-2.1	16.4	13.3	10.7	4.9
Total	–	7.3	5.3	3.1	-3.0	-4.1	2.7	-4.8	12.0	10.2	8.7	3.6

Source: Author's calculations based on Instituto Mexicano del Seguro Social (IMSS) data.

Note: In the IMSS classification, micro firms are defined as those employing between 1 and 15 workers; small firms, 16 to 100 employees; midsize firms, 101 to 250 workers; large firms, more than 250 employees.

[1] Percent change on preceding year.

TABLE 7.3. Aggregate Sales and Employment in Mexico's Export Sector, 1993–1999 (millions of current U.S. dollars and thousands employed)

	1993	1994	1995	1996	1997	1998	1999	1993–1999 average
Maquiladora sector								
Exports	21,853	26,269	31,103	36,920	45,166	53,083	63,749	39,735
Employment	547	601	681	799	938	1,039	1,197	829
Principal exporting firms[1]								
Exports	26,008	32,011	44,811	56,795	56,976	55,121	57,657	47,054
Employment	1,002	994	1,243	1,348	1,276	1,391	1,440	1,242
Foreign[2]								
Exports	7,452	10,084	12,878	20,308	22,310	22,761	23,091	16,983
Employment	147	169	216	239	227	200	155	193
National[3]								
Exports	18,556	21,927	31,933	36,487	34,667	32,360	34,566	30,071
Employment	855	825	1,027	1,110	1,049	1,191	1,285	1,049
Total exports	51,886	60,882	79,542	96,000	110,431	117,460	136,391	93,227
Total employment[4]	32,534	33,208	33,881	35,226	37,360	38,618	39,069	35,699

Sources: Author's calculations based on Banco de México 1999, *Expansión* (several years), Poder Ejecutivo Federal 1999, and Dussel Peters 2000.

[1] The number of firms in this category varied from year to year, ranging from 264 (1993) to 312 (1996) and averaging 293 for the 1993–1999 period.

[2] Firms with majority foreign capital. The number of firms in this category varied from year to year, ranging from 54 (1993 and 1994) to 78 (1995) and averaging 66 for the 1993–1999 period.

[3] Firms with majority national capital. The number of firms in this category varied from year to year, ranging from 210 (1993) to 246 (1996) and averaging 226 for the 1993–1999 period.

[4] Total employed population, as defined in Poder Ejecutivo Federal 1999. Data for 1994 are the author's estimates based on this source.

TABLE 7.4. Export Sales and Employment as a Proportion of Mexico's Total Export Activity, 1993–1999 (percentages)[1]

	1993	1994	1995	1996	1997	1998	1999	1993–1999 average
Maquiladora sector								
Exports	42.1	43.2	39.1	38.5	40.9	45.2	46.7	42.6
Employment	1.7	1.8	2.0	2.3	2.5	2.7	3.1	2.3
Principal exporting firms[2]								
Exports	50.1	52.6	56.3	59.2	51.6	46.9	42.3	50.5
Employment	3.1	3.0	3.7	3.8	3.4	3.6	3.7	3.5
Foreign[3]								
Exports	14.4	16.6	16.2	21.2	20.2	19.4	16.9	18.2
Employment	0.4	0.5	0.6	0.7	0.6	0.5	0.4	0.5
National[4]								
Exports	35.8	36.0	40.2	38.0	31.4	27.6	25.3	32.3
Employment	2.6	2.5	3.0	3.2	2.8	3.1	3.3	2.9

Sources: Author's calculations based on Banco de México 1999, *Expansión* (several years), Poder Ejecutivo Federal 1999, and Dussel Peters 2000.

[1] Percentages calculated on the basis of totals reported in table 7.3. These values do not add to 100.0 percent because not all exports or employment were accounted for by *maquiladora* (in-bond processing) firms or the principal exporting firms identified by *Expansión*.

[2] The number of firms in this category varied from year to year, ranging from 264 (1993) to 312 (1996) and averaging 293 for the 1993–1999 period.

[3] Firms with majority foreign capital. The number of firms in this category varied from year to year, ranging from 54 (1993 and 1994) to 78 (1995) and averaging 66 for the 1993–1999 period.

[4] Firms with majority national capital. The number of firms in this category varied from year to year, ranging from 210 (1993) to 246 (1996) and averaging 226 for the 1993–1999 period.

TABLE 7.5. Evolution of Mexico's Manufacturing Sector, 1988–2000

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Growth rate of manufacturing product[1]	3.5	7.9	6.8	3.4	4.2	-0.7	4.1	-4.9	10.8	9.9	7.4	4.2	7.1
Manufacturing product as share of gross domestic product (GDP) (percent)	22.1	20.2	19.1	18.9	18.5	17.5	17.2	19.0	19.6	19.4	19.5	19.3	19.3
Growth rate of manufacturing employment[1]	NA	4.4	3.4	1.0	2.2	-2.1	-2.1	-5.3	6.9	8.8	5.8	3.7	3.0
Manufacturing employment as share of total employment (percent)	12.6	12.8	12.6	12.4	12.4	12.0	11.5	11.2	11.6	12.2	12.3	12.4	135.0
Index of manufacturing labor productivity[2]	100.0	103.4	106.7	109.3	111.4	113.0	120.2	120.7	125.1	126.4	128.3	129.0	135.0
Comparative index of manufacturing labor productivity[3]	100.0	101.3	101.5	102.8	104.8	105.6	107.6	104.0	105.7	108.8	109.4	110.8	115.0
Index of manufacturing capital productivity[2]	100.0	111.1	124.0	127.5	129.5	120.4	116.7	105.5	115.0	NA	NA	NA	NA
Comparative index of manufacturing capital productivity[3]	43.2	46.0	48.6	49.8	50.8	48.1	46.4	46.2	49.5	NA	NA	NA	NA
Growth rate of manufactured exports[1]	17.7	6.7	13.5	117.4	12.0	17.5	20.2	31.9	20.2	18.0	11.5	15.3	18.3
Manufactured exports as share of total exports (percent)	59.7	57.3	55.4	75.7	78.3	81.9	83.9	84.7	84.4	86.5	90.7	90.0	87.3
Index of manufactured exports[2]	100.0	106.7	121.1	263.3	294.8	346.4	416.3	549.2	660.4	779.0	868.5	1,001.1	1,184.1
Growth rate of imports[1]	52.9	26.0	24.9	64.7	24.0	5.7	20.9	-9.3	20.2	25.2	14.6	14.4	24.0

TABLE 7.5 continued

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Manufactured imports as share of total imports (percent)	89.4	89.8	91.2	94.0	93.7	94.2	93.8	93.2	90.7	92.5	92.9	93.8	94.7
Index of manufactured imports[2]	100.0	126.0	157.4	259.2	321.4	339.8	410.7	372.5	447.8	560.6	642.6	735.0	911.5
Trade balance (million US$)	-5,852	-9,740	-13,662	-14,660	-22,066	-19,068	-23,350	-117	-124	-6,023	-9,881	-10,363	-19,889
Trade balance as share of GDP (percent)	-14.0	-21.2	-25.0	-23.8	-32.0	-26.3	-30.4	-0.2	-0.2	-7.2	-11.2	-10.7	-17.9

Sources: Author's calculations based on Instituto Nacional de Estadística, Geografía e Informática (INEGI, www.inegi.gov.mx) and Banco de México data (www.banxico.mx). All trade data were calculated in U.S. dollars, based on the peso/dollar exchange rate published by the Banco de México. After 1991, trade data include *maquiladora* (in-bond processing) activities. Data for the year 2000 on the growth rate of manufacturing employment and manufacturing employment as a percentage of total employment are the author's estimates.

Note: The data in this table include information concerning the *maquiladora* (in-bond processing) industry. However, trade data include maquiladora activities only beginning in 1991.

[1] Percent change on preceding year.

[2] 1988 equals 100.

[3] Average productivity in the economy as a whole equals 100.

NA = Not available

- Despite earlier trends, major exporting firms and maquiladoras accounted for only 5.8 percent of total employment on average from 1993 to 1999. In fact, one of the most striking features of Mexico's export sector is its inability to absorb the country's growing economically active population. For the 1993–1999 period, the main exporting firms and maquiladoras accounted for only 16.7 percent of new employment growth. Even more striking, the leading majority-foreign-owned exporting firms accounted for only 0.5 percent on average of total employment during 1993–1999.

For Mexico's manufacturing sector more generally, the period since 1988 has been characterized by the following trends (also see table 7.5):

- GDP growth in manufacturing fluctuated markedly between 1988 and 2000, averaging 4.3 percent annually (compared to 3.4 percent for the economy as a whole). As a result, manufacturing's share of total GDP increased slightly over the period, remaining at around 19 percent of total GDP since 1995.
- Manufacturing employment as a share of total employment fell slightly, from 12.6 percent in 1988 to 12.4 percent in 1999. This trend reflected the sector's relatively high capital intensity, but it also demonstrated its limited capacity to generate jobs.
- In terms of productivity, manufacturing outperformed the rest of the economy. Labor productivity increased by 35.0 percent over the 1988-2000 period, rising at a higher annual rate than labor productivity in the economy as a whole.
- The manufacturing sector performed most successfully in terms of exports. Including maquiladora activities, manufacturing's share of total exports increased from 59.7 percent in 1988 to 87.3 percent in 2000.
- However, despite GDP and export growth, manufacturing has not been able to overcome its most severe structural limitation since the ISI period: a persistent trade deficit. Although exports have expanded, so have imports, resulting in a high, increasing, and unsustainable trade deficit. Indeed, Mexico's trade deficit rose from US$6.3 billion in 1988 to US$32.6 billion in 1994. It began dropping in 1995 as a result of the country's severe economic crisis, but with macroeconomic recovery in 1996, the trade deficit in manufacturing resumed its sharp upward pattern. Because the trade deficit has no automatic financing mechanism, these deficits must be financed either by achieving a trade surplus in other sectors (petroleum, ag-

riculture, tourism or other services, and so on) or by attracting foreign investment through high real interest rates.

- Independent of the absolute value of the manufacturing trade deficit, it is important to relate the trade deficit to manufacturing GDP—that is, as a coefficient that reflects the penetration of net imports in the manufacturing sector. For the manufacturing sector as a whole, the trade balance (exports less imports)/GDP coefficient rose from –14.0 percent in 1988 to –30.4 percent in 1994 (that is, net imports increased very rapidly). Import penetration in the 1990s reached levels not seen in Mexico since the 1960s.

Trends in Manufacturing Subsectors

Mexico's national accounting system divides the manufacturing sector into forty-nine branches, not including maquiladoras (INEGI 1999). For the purposes of this analysis, these subsectors were classified in three groups according to their export performance during the 1988–1996 period, and these groups were further subdivided according to their GDP performance over this period. Six subsectors (group I.A in table 7.6) are the leaders within both Mexico's manufacturing sector and the economy as a whole. The main characteristics of these manufacturing subsectors are:

- With the exception of soft drinks and flavorings, the subsectors in group I.A—particularly automobiles, electronic equipment, and machinery and electrical equipment—are strongly influenced by transnational corporations and foreign firms.
- Subsectors in groups I and I.A markedly increased their share of total GDP over the 1988–1996 period. Indeed, group I.A's share of manufacturing GDP rose from 10.6 percent in 1988 to 18.3 percent in 1996. This trend was driven by the automobile and electronic equipment sectors, whose annual average rates of GDP growth were 12.8 percent and 9.8 percent, respectively.
- As noted earlier, export-oriented subsectors generate much less employment than might be expected given their export and GDP performance. The subsectors in group I, which represented 37.7 percent of manufacturing employment in 1996, increased their share by less than 2 percent over the preceding eight years. However, subsectors such as those in group III.A did better, increasing their employment share from 14.0 percent in 1988 to 17.0 percent in 1996, mainly as a result of job creation in automotive engines and auto parts, fruits and vegetables, and other food products. Yet the automotive sector as a whole generated only 1.3 percent of manufacturing employment during 1988–1996 and 0.1 percent of total employment during this period.

- Trends in real wages in export-oriented subsectors are striking. Real wages for the subsectors in group I, particularly those in group I.B, were the lowest in all of Mexico's manufacturing sector. Even the automotive sector, which had the highest real wages in manufacturing after basic petrochemicals, fell from an index value of 246.3 percent in 1988 (100 = average real wages in the manufacturing sector as a whole) to 188.8 in 1996. In contrast, the subsectors in groups III and III.B (that is, those with the lowest export levels and GDP growth) had the highest real wages for the period. Although further analysis is needed, these data demonstrate that there is no automatic, positive association between export-oriented activities and real wages. Instead, these wage trends paralleled the pattern of dramatically falling wages throughout the period.[21]
- As a result of trends in GDP and employment, the most dynamic groups in terms of GDP and exports have increased capital and labor productivity substantially. Nevertheless, capital productivity fell after 1991 for subsectors in group I, dropping in 1996 to a level below that for manufacturing overall and for the other groups included in this analysis.[22] Labor productivity, on the other hand, showed impressive growth for manufacturing as a whole and for each of the groups examined here.[23] Most notable in 1996 were groups I and I.A, with labor productivity levels 30.0 percent and 49.1 percent, respectively, above 1988. Iron and steel and the automotive sector led the rise in labor productivity.
- Manufacturing-sector exports (excluding maquiladoras) increased by 92.9 percent from 1988 to 1996, and groups I and I.A increased their share significantly, from 23.6 percent and 18.6 percent, respectively, of all exports in 1988 to 49.1 percent and 41.0 percent in 1996. The automotive sector alone increased its share from 11.3 percent of manufacturing exports to 29.6 percent over the 1988–1996 period. Although all these groups increased exports by at least 30 percent, none compared with the dynamism of groups I and I.A, particularly the automotive sector.

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[21] The minimum wage in 1998 was less than 30 percent of its 1980 value, and the average real wage in 1998 was at less than 60 percent of its 1980 value (Dussel Peters 2000).

[22] Capital productivity was measured as net capital stock over GDP. The author obtained data for net capital stock from the Banco de México.

[23] Labor productivity was measured as GDP over employment.

TABLE 7.6. Typology of Mexico's Manufacturing Sector by Growth Rate of Exports, 1988–1996[1]

	Annual Average Growth of Exports (percent)	Annual Average Growth of GDP (percent)
Group I	25.2	5.1
Group I.A	25.6	8.5
Automobiles	27.3	12.8
Electronic equipment	22.9	9.8
Other textile products	23.2	6.4
Household appliances	24.2	6.0
Machinery and electrical equipment	21.8	5.6
Soft drinks and flavorings	21.1	4.4
Group I.B	23.0	2.2
Apparel	21.3	3.9
Soaps, detergents, cosmetics	20.7	3.4
Fats and oils	23.6	2.5
Milled corn	21.3	1.8
Non-electrical machinery	21.2	1.8
Other transportation equipment	21.1	1.3
Milled wheat	23.5	1.1
Pesticides and fertilizers	36.4	0.3
Metal furniture	36.1	-0.1
Animal feeds	28.5	-0.4
Group II	14.4	3.2
Group II.A	15.2	5.2
Steel and iron	16.0	6.0
Other manufactured goods[2]	15.4	5.6
Glass and glass products	10.2	5.2
Meat and milk products	16.8	5.1
Other metal products	16.7	4.2
Group II.B	13.8	1.6
Other chemicals	14.4	3.3
Plastic products	10.5	3.2
Basic inorganic chemicals	13.0	3.0
Basic petrochemicals	12.0	2.4
Electrical equipment	15.5	2.3
Ceramics	15.5	2.3
Tobacco	18.0	1.3
Leather and footwear	12.7	0.8
Cotton, wool, and synthetic textiles	12.4	-1.4
Lumber and plywood	10.5	-3.5
Group III	4.8	3.4
Group III.A	3.4	4.8
Fruits and vegetables	9.0	7.3
Other food products	6.5	5.1
Beer and malt	5.8	5.0
Automotive engines and autoparts	3.0	4.4
Paper and paperboard	0.9	4.4
Sugar	-4.9	4.1
Group III.B	6.7	2.1
Medicinal products	9.0	3.8
Plastic resins, synthetic fiber	9.3	3.6
Cement	4.2	2.4
Alcoholic beverages	7.6	2.3
Other wood products	4.3	2.0
Structural metal products	8.8	1.8
Rubber products	8.7	1.7
Non-ferrous metals	8.2	1.6
Coffee	6.2	1.6
Jute, rough textiles	-3.6	1.6
Refined petroleum	3.8	1.3
Printing	3.3	0.7
Agriculture	5.4	1.9
Mining	0.9	1.9
Manufacturing	14.4	3.9
Total economy	13.4	2.7

Source: Author's calculations based on Instituto Nacional de Estadística, Geografía e Informática (INEGI) data.

[1] Average annual growth rate for the 1988–1996 period. *Maquiladora* (in-bond processing) activities are not included.

[2] This category includes such products as jewelry, musical instruments, weight-lifting and other sports equipment, office and drawing accessories, toys, and brooms and brushes.

- Just as noteworthy as the dynamism of exports was that of imports. For the manufacturing sector as a whole, imports increased by 179.4 percent from 1988 to 1994 and then declined following the 1994–1995 economic crisis. Although the import share of group I increased by only 1.6 percent over 1988–1996, the figure for the six subsectors in group I.A was 3.6 percent. Sectors such as soft drinks and flavorings, textiles, and automobiles increased their imports by more than 350 percent over this period.
- As a result of earlier trade trends, Mexico's manufacturing sector amassed a trade deficit of US$161 billion for the entire 1988–1996 period. For most groups (with the exception of group I.A for certain years) and for manufacturing in general, the trade deficit increased sharply from 1988 to 1994, fell during the 1994–1995 crisis, and then rose once again after the economy regained momentum. Groups II.A and III.A contributed more to the trade deficit than did the B groups.[24] These patterns reappeared in the trade balance/ GDP coefficient, demonstrating the dramatic structural changes that occurred in the subsectors in groups I and I.A. These subsectors generated a significant surplus after 1995 while, with few exceptions, the other groups generated a deficit. Thus, excepting group I, all subsectors significantly increased their coefficient during the 1988–1996 period.

REGIONAL TRENDS

The polarization of the Mexican economy that has occurred among companies and subsectors has also taken place at the regional level since the adoption of economic liberalization policies. In the context of liberalizing the flows of capital, goods, and services, two features of globalization merit special note in the Mexican case. One is the emergence since the 1980s of global commodity chains, a worldwide trend in which transnational corporations (but not only transnationals) have come to depend increasingly upon the international organization of inputs, production, and distribution. Global commodity chains have become a leading mechanism for maximizing flexible production processes, increasing quality, implementing just-in-time strategies, reducing inventories, and integrating production operations with problem-

[24] With the exception of the automobile industry, no branch of Mexican manufacturing generated a significant trade surplus during the 1988–1996 period. The automobile industry had a surplus of US$39.6 billion for the period, but if we include engines and auto parts (which import most of the inputs for the automotive sector), the trade surplus fell to US$3 billion for 1988–1996.

solving and benchmarking approaches (Dussel Peters 1999; Gereffi 1994). Thanks to global commodity chains, firms are much freer in deciding where to locate their operations and facilities, and they can avoid duplicating their efforts in several regions or countries.

On the other hand, flexible production has brought important changes in industrial organization. Fordism has been replaced by a tendency to transform products and services in an increasingly diversified manner. Diversified demand requires significant changes in industrial organization, including an abbreviated production cycle, "lean production," just-in-time inventory management, and the ability to change supplier and production systems to meet demand (Dussel Peters, Piore, and Ruiz Durán 1997).

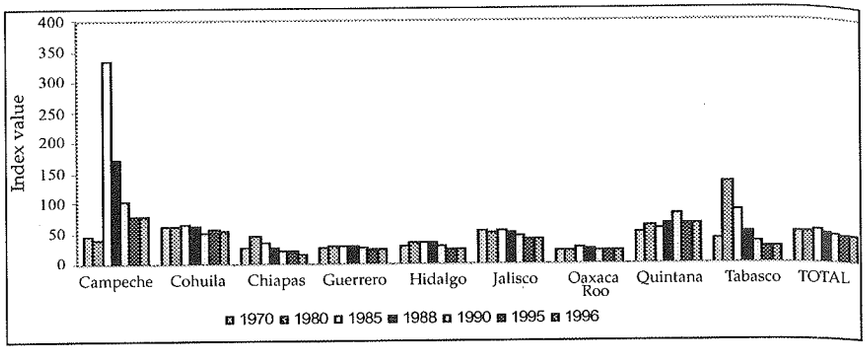
Global commodity chains and flexible production are extremely important from an international perspective because networks, not firms, are increasingly the competitors in world markets (Borrus and Zysman 1998). In a context of greater national liberalization of goods, capital, and services, global commodity chains and flexible production can generate strong but geographically contained regional- and local-level impacts. For example, were IBM to increase its investments for producing liquid-crystal displays at its El Salto, Jalisco, plant, this would have minimal impact, if any, in Chiapas. In like manner, policy challenges also appear at the local and regional levels. Thus a single national industrial policy will have little effect on most regions given their increasing differentiation as a result of global commodity chains and flexible production.[25]

What, then, has been the impact of liberalization on Mexico's regions? Ruiz Durán (1997, 1999) argues that since 1988 Mexico's states have experienced different degrees of economic concentration and have been exposed to different types of state intervention and foreign investment (oriented to the domestic market, exports, and maquiladoras).[26] For the 1980–1993 period, the foreign investment model (characterized by a high degree of industrialization and higher GDP growth in the manufacturing sector) was far more dynamic than other models. Other studies (Dávila Flores 1998, among others) have found that, based on specialization coefficients of employment, Mexico's states were characterized by a process of relative convergence in terms of GDP growth during 1980–1993, although variability coefficients were very high. The performance of micro, small, and midsize firms particularly varied across states. Although some of these firms were able to

[25] The same holds for policies concerning education, poverty reduction, technological development, and so on.

[26] See also Mungaray 1998.

FIGURE 7.3. Gross Domestic Product per Capita for Selected Mexican States, 1970–1996 (Federal District = 100)



Sources: Author's estimates based on Poder Ejecutivo Federal 1999; author's estimates for population (1985, 1988) and gross domestic product (1990).

enter the supplier networks of large exporting firms, most still lacked financial and technological support, and they suffered from an overall lack of coordination among federal programs and mechanisms (Kuri Gaytán, Pacheco Ibarra, and Noriega Valdez 1999). Finally, there is an increasing consensus that economic and social disparities and polarization have increased at the regional level since 1988 (Asuad Sanén 2000; Ruiz Durán 1999).

Data for the 1970–1996 period on regional GDP, employment, and GDP per capita depict several important trends in this regard (INEGI 1999; Poder Ejecutivo Federal 1999).[27] First, the share of GDP accounted for by the four leading states—the Federal District, the State of México, Nuevo León, and Jalisco—fell significantly between 1970 and 1985, from 49.2 to 44.7 percent. Yet since 1988 these four states—along with the northern border states of Baja California, Coahuila, Chihuahua, Sonora, and Tamaulipas, all of which have very significant maquiladora and export activities (Mendiola 1997)—have increased their share of total GDP substantially (see figure 7.3). Second, other states (Campeche and Tabasco) showed strong economic fluctuations over the 1970–1996 period, resulting primarily from the petroleum boom of the 1980s and the activities of Mexico's state-owned oil company, Petróleos Mexicanos (PEMEX). Meanwhile, Quintana Roo was able to increase its share of national GDP from 0.2 percent in 1970 to 1.2 percent in 1996, mainly as a result of tourism. Third, during the 1970–1988 period, the

[27] Unfortunately, there are no homogeneous data available on regional GDP before 1999. INEGI and Poder Ejecutivo Federal have published data on GDP in current pesos, but one cannot calculate growth rates for the earlier period.

Mexico City area—Mexico's economic and political center—lost its primacy of place in terms of GDP per capita to the northern border states, to petroleum-producing states, and to Quintana Roo, though it has recovered its position since 1988.

Polarization at the regional level is particularly significant for states like Chiapas, Guerrero, and Oaxaca, where per capita GDP levels have declined since 1988 and were 20 percent below those for Mexico City in 1996. In Chiapas, for example, GDP per capita declined from an index value of 25.5 in 1988 to 18.4 in 1995 and 17.5 in 1996, when measured against the comparable figures for the Mexico City area (Federal District = 100).

These data suggest an increasing North-South polarization in Mexico. Whereas the country's traditional economic and political centers (the Mexico City area, the State of México, Jalisco, and Nuevo León) and states with strong export and maquiladora activities have increased their share of total GDP, states south of Mexico City have been excluded from regional and global integration. This territorial polarization in the distribution of the benefits of liberalization could have serious economic, social, and political implications for Mexico in the future.

CONCLUSION

Trends in Mexico's manufacturing sector reflect impressive structural change within a small group of firms—transnational corporations, maquiladoras, and large Mexican industrial groups (Garrido 1998)—that have been able to integrate into global markets through exports and that display a high degree of intrafirm and intra-industry trade (León González Pacheco 1999). As one might have anticipated under liberalization, they have also increased their overall productivity and promoted GDP growth as a result of increased exports. Several of these success stories have been studied in depth, including the automobile and auto parts industries (Carrillo and González López 1998; CEPAL 1998; Ruiz Durán, Dussel Peters, and Taniura 1997), the electronics industry (Dussel Peters 1998; Mortimore 1999), and the apparel industry (Gereffi and Bair 1998). *Expansión*'s 1998 phrase—"*Exporto, luego existo*" ("I export, therefore I am") is certainly a reality for a small number of firms, sectors, and regions.

Unfortunately, however, most government and academic sources overstate the importance of export-oriented activities, while paying relatively little attention to the remainder of the Mexican economy. Exports are clearly important. Nevertheless, it is also true that exporting firms are generally characterized by low levels of job creation. One of

the most striking features of Mexico's liberalization experience is the manufacturing sector's inability to generate endogenous growth conditions, as reflected in the balance of trade/GDP coefficient. This has led to increasing polarization in the Mexican economy, particularly in its manufacturing sector. The lack of integration has meant that benefits from liberalization have accrued to only a small number of firms, sectors, and regions—a fact that is reflected in the increasing disparity between domestic demand and export growth.

The export sector's overall inability to generate linkages with the rest of the economy—in terms of employment, learning processes, and technological innovation, among many other aspects—creates unsustainable macroeconomic conditions in the medium and long term. As soon as the economy (particularly manufacturing) grows in terms of GDP and exports, it requires larger quantities of imports for capital accumulation. This cycle has operated since 1988, and it helped produce the 1994–1995 crisis. Imports fell as a result of the crisis, but they surged again as soon as the economy recovered.

The industrial organization that has emerged since Mexico liberalized its economy has proven to be macroeconomically unsustainable. Economic polarization has increased as only a small number of firms and sectors have been able to integrate themselves into the world market through exports. Unsustainability refers not only to the size of the trade deficit but also to its tendency to spiral upward in absolute terms and relative to GDP. Macroeconomic unsustainability also raises a financial—and political and social—question: which sectors are able and willing to pay for these growing external shortfalls? Not only has dependence upon foreign capital since 1988 made Mexico vulnerable to a variety of international disruptions, but it has also revealed the fragile nature of the country's export-oriented industrialization and liberalization strategy.

The implication, of course, is that continued liberalization will have significant economic and social costs for Mexico. Either the economy expands at a rate that enables it to absorb some or most of the growing economically active population (but at the cost of unsustainable trade and current account deficits), or growth is much lower (leaving most would-be job market entrants without employment). This rather perverse situation, in which the economic sectors that are most dynamic in terms of exports and GDP growth are also relatively high in capital intensity and relatively low in real wage levels, merits much further discussion.

Mexico's list of priority macroeconomic and industrial policy needs should include generating linkages between the dynamic export sector and other parts of the economy, "recovery" of the domestic market, national and regional policies designed to produce endogenous growth conditions in a globalized context, and programs to promote micro, small, and midsize firms (De Maria y Campos 1999; Dussel Peters 2000). However, any effort to promote a higher degree of economic integration of export-oriented firms, sectors, and regions carries costs, which must be paid by either the public or the private sector. Because of continuing budgetary constraints, economic and political priorities will compete for funding: spending for industrial policies and public higher education, for example, versus a bailout of the financial sector.

Nonetheless, one must recognize that Mexico's liberalization strategy has been relatively successful on its own terms—that is, in promoting exports, raising productivity, and, to a lesser degree, stimulating economic growth. Thus any discussion of Mexico's emerging industrial organization since 1988 must necessarily go beyond industrial policy. The vision, logic, and assumptions of export-oriented industrialization and of liberalization more generally are theoretically and empirically questionable, and they should be subjected to critical review. Otherwise, even though generating domestic economic linkages might become a key feature of Mexico's liberalization program, this objective might be sacrificed to macroeconomic priorities such as control of inflation and the fiscal deficit.

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Part IV

Social Policy and Rural Development