Chapter 10

Free Trade and Uneven Development

The North American Apparel Industry after NAFTA

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The Maquiladora Debate in Mexico

The North American Free Trade Agreement (NAFTA) has dramatically increased the export dynamism of the Mexican apparel industry. The sheer increase in the country's clothing exports to the United States, from $1.6 billion in 1994 to almost $6.5 billion in 1998, is impressive evidence of this claim. NAFTA has also promoted the consolidation of apparel export-production centers. This chapter concentrates on one of these production centers, the Torréon region, which has been called the new blue jeans capital of the world.

Torreyón is a dynamic industrial cluster of five hundred thousand people located in the northern Mexican state of Coahuila, about four hours by car from the Texas portion of the U.S. border. It is located in the heart of La Laguna region, well known for its cotton and dairy products. Torreyón's apparel industry as discussed in this chapter is actually a cluster of three cities, as it straddles the nearby municipalities of Gómez Palacio and Lerdo in the neighboring state of Durango. Following an economic recession in the early 1990s, Torreyón has been one of the main beneficiaries of Mexico's recent export boom. Although Torreyón is also home to other export-oriented manufacturing sectors, such as auto parts and machinery, the apparel and textile industries have been the star performers in terms of export growth and job creation.

Despite these undeniable gains, a verdict on the consequences of NAFTA for both Torreyón and Mexico has yet to be reached. Much of the debate about NAFTA in academic and policy-making circles on both sides of the border has addressed the question “Is NAFTA good policy, and if so, for whom?” The maquiladora form of production occupies center stage in this debate. Maquiladoras are factories that assemble products for export from imported components that enter the country duty-free. Proponents of the maquiladoras assert that the system is a valuable source of export revenue and job creation for Mexico. The program's critics, however, see it as the ultimate example of a “new international division of labor” that traps developing countries in the dead-end role of providing cheap labor for low-value-added assembly operations. Because the vast majority of inputs assembled into final products in the maquiladoras are imported, the maquiladoras do not stimulate growth in the rest of the economy.
This debate rests implicitly on three assumptions: (1) that the change in Torrón (and in other Mexican production centers) from local production to export manufacturing is a direct consequence of NAFTA; (2) that the unavoidable consequence of the free-trade agreement is the maquilization of Mexico; and (3) that maquiladora production does not promote development. These assumptions conceal and oversimplify the dynamics of export industrialization and regional development in Mexico. The question should not be whether NAFTA promotes Mexican development but rather under what conditions particular regions in Mexico benefit from free trade. Is NAFTA promoting the maquilization of Mexico, and if so, which factors could be expected to lessen this effect? What role does foreign capital play in establishing favorable or unfavorable conditions for local firms? How do local institutions and conditions mediate this process?

Before answering these questions, it is necessary to identify what it is about the maquiladora production system that creates undesirable developmental outcomes. Mexico’s maquiladoras are foreign- or domestically owned factories that traditionally have been geared toward assembling products for export from imported components. These inputs are imported to Mexico duty-free, and when the assembled products are exported after assembly, only a minimal duty is assessed on the value added in Mexico, chiefly labor. Maquiladoras exist in a number of manufacturing sectors, although the main products assembled in maquiladoras are autos and auto parts, consumer electronics, and apparel. Although the maquiladora system began with the U.S.-Mexico Border Industrialization Program in 1965, most of the growth in maquiladora production has occurred since the mid-1980s. The program initially applied only to in-bond factories located along Mexico’s northern border, but this geographic restriction has since been eliminated and maquiladoras currently are located throughout the country. Because of the labor-intensive, low-value-added nature of maquiladora production, critics argue that this system promotes almost no industrial upgrading or technology transfers, creates minimal linkages to the local economy, and generates very little wealth that can be retained in the country.

In contrast to this traditional view of the maquiladoras, a revisionist perspective about the significance of this export-oriented sector for Mexican development emerged in the late 1980s and early 1990s. Researchers began to call attention to a so-called second generation of maquiladoras. Although local inputs to the production process remained low, the mix of activities being performed by Mexican workers in the maquiladoras became more diverse, expanding beyond low-value-added assembly. The empirical focus of this research included production of auto parts in northern Mexico, televisions and other electronics in Tijuana, and computers in Guadalajara. In each of these industries, scholars argued, the maquiladoras were maturing from assembly sites based on cheap labor to manufacturing and even profit centers whose competitiveness lay in a combination of high productivity, good product quality, and wages well below those prevailing north of the border (Shaiken 1987; Gereffi 1996; Carrillo 1998).

NAFTA presents yet another twist in the ongoing maquiladora debate. Because NAFTA removes most of the restrictions on backward and forward linkages between the maquiladoras and national firms, the enclave nature of the maquiladoras could change as export-oriented plants become more integrated into the rest of the economy. In effect, NAFTA levels the playing field and allows all companies to set up the same kinds of cross-border production networks that traditionally characterized only the maquiladora sector. These developments present two scenarios, which are
reflected in the literature on the maquiladora sector in the era of NAFTA. Some see regional integration as an opportunity for a wide array of Mexican firms to attain the productivity and quality levels associated with the country’s leading maquiladoras and therefore to increase their competitiveness in foreign (primarily U.S.) markets. Others argue that NAFTA further exacerbates the existing asymmetries in Mexico’s industrial landscape, with large U.S. firms standing to obtain all the main benefits that NAFTA provides. Instead of expecting the maquiladora sector to become integrated with the rest of the Mexican economy, this camp predicts the “maquilization of Mexico,” whereby the entire country is converted into a site for low-value-added export-oriented production for the U.S. market, to the benefit of foreign capital and the detriment of national firms and Mexican workers (Dussel Peters 2000; Tardenico and Rosenberg 2000).

Our own research suggests that Mexico in general and Torreón in particular appear to be moving away from typical maquiladora manufacturing toward a more integrated form of full-package production. Instead of just doing assembly, firms in Torreón are performing all the other required manufacturing activities, including the purchase and production of raw materials, cutting, laundering, finishing, and, to a lesser extent, distribution. This new full-package system differs from maquiladora production in terms of both external linkages and local linkages. As apparel production in the Torreón region moves from maquiladora to full-package manufacturing, we expect to see a transformation in the relationships between Torreón suppliers and their American clients. Linkages among local firms, which are nonexistent under the maquiladora system, should become more salient. Full-package production forces local firms to develop ties with suppliers and subcontractors (both local and foreign) in order to satisfy the demands of marketers and retailers, which generally do not engage in any production activities.

Although in an era of globalization both local and external linkages are vital for the survival of firms, there is no integrated framework that analyzes their interplay. The global commodity-chains literature, with its distinction between producer-driven and buyer-driven commodity chains (Gereffi 1994), suggests multiple models of export-oriented industrialization. Development outcomes depend largely on the type of industry and the type of lead firm coordinating the international trade and production networks that are dominant during a particular phase of a country’s development strategy (Gereffi and Wyman 1990). In the same way, the movement of a country or a firm from one segment of the commodity chain to another explains changes in profit margins, quality of jobs, and technology transfers, among other factors. While producer-driven chains have received significant scholarly attention in research on large, integrated multinational corporations, the dynamics of buyer-driven chains, such as the ones responsible for Torreón’s rapid growth as a jeans-production center, are less well understood despite their growing importance in terms of Mexico’s export-oriented strategy.

The importance of local linkages is addressed by the industrial-districts literature. The original industrial-district model was based on the Emilia-Romagna region—the so-called Third Italy—where small and medium-sized enterprises with a craft tradition in products such as footwear and apparel organized into geographically concentrated and sectorally specialized clusters. The advantages provided by participation in the clusters allowed these small-scale manufacturers to compete successfully in global markets on the basis of high quality and flexible specialization. Features of this model include high wages for a local workforce with strong skills, significant horizontal
networks between firms within the cluster based on cooperative competition, and supportive government policies and institutional infrastructure. The ability of industrial districts to succeed in global markets despite high labor costs led to the conclusion that these clusters represented a "high road to competitiveness" for firms and workers in developed countries (Piore and Sabel 1984; Pyke and Sengenberger 1992; Humphrey 1995; Markusen 1996).

The global commodity-chains and industrial-district frameworks are complementary. While the former concentrates on the power dynamics created by global production systems and the consequences of having a particular location within these systems, the latter focuses on the local linkages that can be used to create competitive advantages in a global economy. Development outcomes depend not only on the dynamics of the global economy but also on the local resources (social, material, financial, or institutional) that are available or can be created. A change of the maquiladora system would necessarily imply transformations in both internal and external linkages in order to move toward higher-value activities and positions. The rest of this chapter attempts to show how Toreón's blue jeans firms have been transformed from producers for the domestic market to maquiladora exporters, then to full-package exporters and, possibly in the future, to lead firms. Particular attention is placed on comparing the network arrangements, both local and international, related to the Toreón region under the maquiladora system and under the new model of full-package production. Finally, once we have established how much Toreón's production setup differs from typical maquiladoras, we discuss the consequences of such a system on key developmental variables: local linkages, technology transfer, employment, wages, working conditions, and rural-urban disparities.

Methodology

We conducted our fieldwork in Toreón in July 1998 and July 2000. Open-ended strategic interviews with Mexican-owned, U.S.-owned, and joint-venture firms, industry associations, and local government organizations were coupled with plant visits and the use of secondary materials to document recent changes in the industry. Our initial contacts with major export firms in Toreón were made through earlier interviews with U.S.-based textile manufacturers, apparel companies, and retailers. This strategy enabled us to identify and interview the majority of Toreón's leading textile and apparel manufacturers, as well as a number of their second-tier contractors.

Our sample included nine apparel companies and two textile mills. Although around 350 different apparel firms operate in the Toreón area, the nine companies included in our sample directly produce or coordinate around one-third of the total production of the region. Given the disproportionate role played by leading firms in the sector and our interest in understanding the power dynamics that exist in the industry, our oversampling of large and foreign firms is justified. We should note, however, that additional research is needed to complement our findings in terms of wages and working conditions in the factories that occupy the lowest tier of Toreón's hierarchical production and subcontracting networks.

This method is superior to random sampling techniques for two reasons. First, a relatively small number of firms in the United States are driving the restructuring of the North American apparel commodity chain, and our approach allows us to identify these firms and the companies they work with in specific sites such as Toreón—in terms of both their main suppliers or partners in the...
local cluster and the tiers of smaller subcontractors that are not linked directly to the U.S. market. Second, this approach guarantees us better access to these firms since we do not contact them “cold” but rather are referred to them by a company we have already interviewed higher up on the commodity chain, another local firm in the cluster, or the local chamber of apparel manufacturers.

Interviews were conducted primarily in Spanish on-site with the company’s plant manager, director of foreign operations, or owner, depending on the firm, and they lasted an average of two hours. The interviews were followed by a tour of the production facilities. In Torreón these included, in addition to the traditional sewing factory associated with apparel production, textile mills; laundries; finishing plants where the garments are pressed, inspected for quality, and packed; and a distribution center. As well as providing an opportunity to evaluate the working conditions and industrial relations, these tours permitted us to speak with additional informants, such as production trainers and line supervisors, whose perspectives on the operation complement the data collected in the initial interview.

We conducted strategic interviews with lead firms in the United States as well as with our informants in Torreón. The strategic interview is a semistructured interview format and differs from a traditional survey-style interview in that there is no standardized questionnaire. Rather, the interviewers use a protocol that lists key questions as a template to ensure that critical issues are addressed with each respondent. The questions listed in the protocol are open-ended, and the protocol is not intended as an exhaustive list of the topics the interview will address. Instead, these questions are used as probes that help the informant understand the kind of information the interviewer is interested in.

Torreón’s Emergence as the New Blue Jeans Capital of the World

At the time of our fieldwork in July 1998, the Torreón area was producing an average of 4 million pairs of jeans a week. In contrast, El Paso, Texas—a major production center for Levi Strauss and Company and Torreón’s predecessor as the blue jeans capital of the world—produced only 2 million pairs of jeans a week at its peak in the early 1980s. To keep pace with this dramatic increase in production, employment in Torreón’s approximately 350 apparel factories had also grown considerably from twelve thousand jobs in 1993 to sixty-five thousand in 1998.

There are several reasons for Torreón’s export success. Although not located along the northern border where the country’s in-bond, export-oriented maquiladora sector has historically been strongest, Torreón is still close and well connected to the United States. This gives it a distinct advantage over other production sites in the interior of Mexico, particularly since quick turnaround time and reliable delivery of even basic apparel products such as blue jeans (which are not generally considered to be high-fashion items) are critical for U.S. retailers and manufacturers. The Torreón area has a significant cotton textile tradition, which is allowing the site to emerge as a model of integrated manufacturing, with denim production and apparel assembly occurring in the same Mexican cluster.

This dynamism in the export of jeans is a relatively new phenomenon in the Torreón region. In 1993, Torreón produced only five hundred thousand pairs of jeans a week, most of them under the provisions of the 8076802 maquiladora program and mostly limited to assembly activities. Apparel export manufacturing became important for the region only in the mid-1980s. Prior to that time, apparel production was almost exclusively dedicated
to the domestic market. The blue jeans industry in Torreón since has undergone a series of shifts: from local production to maquiladora exporting to full-package manufacturing. Four historical factors have driven this evolution:

1. the peso devaluations;
2. the implementation of NAFTA and the subsequent elimination of tariffs and trade barriers;
3. the presence of new organizational buyers, especially retailers and brand marketers; and
4. the existence of local capital and expertise applied to apparel production.

The effects of each these factors are explained in the subsequent sections.

The Peso Devaluation Effect

The Torreón region has a strong tradition in the apparel and textile industry. Textile mills have been located in the region since the late nineteenth century. During the 1940s and 1950s companies such as Fábricas El Venado, Fábricas de Ropa Manjai, Metro, and Guadiana were founded to satisfy the need of the national market for work clothes, particularly for rural settings. These companies specialized in the production of jeans and other denim items. During subsequent decades, as jeans evolved from being “work clothes” to an object of fashion and moved from rural communities to the streets of cities, local companies developed their own brands (e.g., Jesús, Medalla Gacela). Under the import-substitution strategy, which prevailed in Mexico from the 1940s through the 1970s, there was little international competition, and Mexican suppliers dominated the domestic market.

The Mexican peso crises in 1982, 1985, and 1988 and the subsequent hyperinflation changed the environment for these companies. Since they were totally dependent on the local market, the reduction in buying power and the related contraction of local demand jeopardized their income. However, inflation affected these companies in a more fundamental way. The jeans industry requires the availability of working capital to acquire the raw materials and labor necessary for production; this working capital is recovered by selling the jeans (plus a profit), and then the production cycle begins again. But jeans manufacturers must wait a period of time (generally a month) to receive payment for their products. Under conditions of hyperinflation, the money received for a pair of jeans produced a month ago may not be enough to make a new pair of jeans now, which left manufacturing unprofitable and impossible to sustain.

The only viable option for the survival of these companies was to redirect their efforts from a stagnant local market to the more solid U.S. market. Export prices are set in dollars and therefore are not affected by the changes in a volatile economy. However, this shift in orientation had its downside for Torreón companies. Although these firms performed all production activities related to the manufacturing of jeans (assembly, cutting, laundering, finishing, marketing, and design), they discovered that their quality was not up to international standards. Torreón firms were unable to offer full-package production with the quality requirements of the American clients. For this reason the few companies that managed to survive had to specialize in assembly and became maquiladora subcontractors for American manufacturers such as Sun Apparel, Levi Strauss and Company, and Parah. This transformation meant, in reality, a de-skilling and a reduction in the value added by Torreón firms.

Although this reorientation toward the international market signified an increased dependency on American manufacturers and brokers, the basis for an export boom in the region was being created. Even though they concentrated on sewing, Torreón firms learned how to man-


<table>
<thead>
<tr>
<th>Type of Clients</th>
<th>1993</th>
<th>1998</th>
</tr>
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<tbody>
<tr>
<td>Manufacturers</td>
<td>Farah (M)</td>
<td>Sun Apparel—Jones of NY (BM, M)</td>
</tr>
<tr>
<td></td>
<td>Sun Apparel (M)</td>
<td>Aalfs (M)</td>
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<tr>
<td></td>
<td></td>
<td>Kentucky Apparel (M)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grupo Libra (M)</td>
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<tr>
<td></td>
<td></td>
<td>Sicte Leguas (M)</td>
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<tr>
<td></td>
<td></td>
<td>Tarrant (M)</td>
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<tr>
<td></td>
<td></td>
<td>Tropical Sportswear (M)</td>
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<tr>
<td></td>
<td></td>
<td>Red Kap (M)</td>
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<tr>
<td>Brand Marketers</td>
<td>Wrangler (BM,M)</td>
<td>Wrangler (BM,M)</td>
</tr>
<tr>
<td></td>
<td>Levi Strauss and Company (BM,M)</td>
<td>Levi Strauss and Company (BM,M)</td>
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<tr>
<td></td>
<td></td>
<td>Action West (BM,M)</td>
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<tr>
<td></td>
<td></td>
<td>Polo (BM)</td>
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<tr>
<td></td>
<td></td>
<td>Calvin Klein (BM)</td>
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<tr>
<td></td>
<td></td>
<td>Liz Claiborne (BM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Old Navy (BM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tommy Hilfiger (BM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Donna Karan (BM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Guess? (BM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chaps (BM)</td>
</tr>
<tr>
<td>Retailers</td>
<td></td>
<td>Gap (BM,R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Limited (BM, R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kmart (R)</td>
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<tr>
<td></td>
<td></td>
<td>Wal-Mart (R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JCPenney (R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sears (R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Target (R)</td>
</tr>
</tbody>
</table>

*Note: Firms aligned to the right are hybrids.*

M, Manufacturers; BM, Brand Marketers; R, Retailers.

Manufacture quality products and deliver them in a timely fashion. Lead firms such as Sun Apparel played an active role in "pushing" Mexican suppliers to meet international standards and to increase their production capacities, which helped them to become full-package producers.

The Mexican peso devaluation crisis in December 1994, after three years of relative stability, had mixed effects on the blue jeans industry. The exchange rate jumped from 3.4 pesos per dollar in December 1994 to 6.8 pesos per dollar in January 1995 (IMF 1999). For the apparel industry the immediate consequences of the devaluation were an increase in the number of U.S. clients interested in the Torreón region, an increase in the number of Mexican apparel assembly plants, and an increase in the production capacity of already existing firms. Table 10.1 shows that prior to 1994 only four U.S. manufacturers—Farah, Sun Apparel, Wrangler, and Levi Strauss and Company—had a significant presence in the region. By 1998 the number of clients had grown to more than two dozen. At the same time the number of jeans manufactured in the
TABLE 10.2. Apparel Industry Indicators for La Laguna Area

<table>
<thead>
<tr>
<th>Variables</th>
<th>1993</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apparel Employment</td>
<td>12,000</td>
<td>65,000</td>
</tr>
<tr>
<td>Output of Jeans (pairs per week)</td>
<td>500,000</td>
<td>4 million</td>
</tr>
<tr>
<td>Output per Company (pairs per week)</td>
<td>Max. 50,000</td>
<td>Max. 230,000</td>
</tr>
<tr>
<td>Mexican Denim in Export Production</td>
<td>1–2%</td>
<td></td>
</tr>
<tr>
<td>Assembly Price per Piece</td>
<td>U.S.$0.90–1.10</td>
<td>U.S.$1.20–2.05</td>
</tr>
<tr>
<td>U.S. Retail Price</td>
<td>U.S.$10–40</td>
<td></td>
</tr>
<tr>
<td>Activities with Mexican Ownership</td>
<td>Assembly</td>
<td>Assembly</td>
</tr>
<tr>
<td>Types of Companies</td>
<td>Specialized Apparel Firms</td>
<td>Diversified Corporate Groups and Textile Exporters</td>
</tr>
<tr>
<td>Regulation of Work Conditions</td>
<td>Mexican Legislation</td>
<td>Mexican Legislation and Foreign Buyers' Codes of Conduct</td>
</tr>
</tbody>
</table>

*Torreón is the center of La Laguna, a highly integrated economic region formed by two additional cities, Gómez Palacio and Lerdo, and several rural communities. Although each city is a distinct political entity, together they form an integrated production zone.

*Examples of these new companies are Grupo Lajat, Grupo Soriana, and textile producers such as Parras-Coce and Textiles Lajat.

The NAFTA Effect

The maquilization of apparel activities in the Torreón region was primarily due to the Mexican peso devaluations and not to NAFTA. What, then, was the effect of NAFTA on the industry? The most elementary consequence was a change in the rules of the game for producers in Mexico. For the apparel industry, NAFTA meant the progressive elimination of U.S. tariffs and nonmonetary barriers to all apparel production activities, including laundering, cutting, and finishing, as well as the use of Mexican inputs such as textiles (denim), buttons, labels, and so forth. For the global apparel industry, NAFTA meant a transformation, at least potentially, of the cost structure of production. For the first time activities other than assembly could be performed in Mexico without the restrictions created by the quota system or the 807/9802 program. The cost reductions that NAFTA made possible provided a rare window of opportunity to obtain a competitive advantage. Companies that decided to move their operations to Mexico around or shortly after the implementation of NAFTA would enjoy lower production costs than other companies.

Figure 10.1 shows how these new conditions reoriented production activities in the Torreón region. In 1993 the region was dedicated exclusively to apparel assembly. By 1996 Mexican–made denim, trim, and labels were used for blue jean exports, and laundering and finishing were also carried out in Mexico. By 2000 cutting and distribution were established in the region as well. However, Figure 10.1 indicates that marketing and retail, the most profitable activities in the apparel industry, are still exclusively performed in the United States. This deepening of the apparel com-

region jumped eightfold, from 500,000 to 4 million pairs per week (see Table 10.2).
modity chain in Mexico suggests that NAFTA has allowed Mexico to develop full-package production capabilities, where not only assembly but all other required manufacturing activities, including the production and purchase of raw materials, are performed within the country. It is important to note, however, that the capability to carry out all manufacturing activities in the making of a pair of jeans does not by itself constitute full-package production. An additional activity, which is usually difficult to locate in a value-added chain, is the coordination of all production activities in order to offer clients a finished product. This raises a new factor that has intensified the coordination functions in the Torreón region: the explosive growth in the volume of orders placed by U.S. retailers and brand marketers.

New Organizational Buyers and the Move to Full-Package Production

The 807/802 model of export production before NAFTA was linked to large U.S. apparel manufacturers that provided the inputs for Mexican assembly. The possibility of lower-cost full-package production after NAFTA encouraged U.S. retailers and marketers to consider Mexico as an alternative to Asia for their sourcing needs (Gereffi 1997). Table 10.1 not only shows an increase in the number of U.S. clients with operations in the region but also highlights the entrance of new kinds of players: brand marketers (who develop distinctive labels, such as Nike, Tommy Hilfiger, and Liz Claiborne) and retailers. Both retailers and marketers require full-package supply because they dedicate themselves to design, distribution, and marketing rather than to production activities.

Besides creating demand for full-package supply, retailers and marketers have transformed Torreón’s production patterns in three fundamental ways. First, they introduced high-volume orders to the region. In 1993 the biggest firms could assemble a maximum of 50,000 pairs of jeans per week. In 1998, Sun Apparel and its subcontractors produced...
230,000 pairs per week in Torreón alone, just under half of Sun Apparel’s total jeans production in Mexico. Despite this tremendous jump in capacity, Torreón firms are still experiencing pressure to keep growing. For example, Original Mexican Jean Company (OMJC) and Siete Leguas are two of the jeans manufacturers in the region, and they both dedicate most of their production (all of it in the case of OMJC) to manufacturing jeans for JCPenney’s private-label Arizona brand. With a joint production capacity of 300,000 pairs of jeans per week in 1998, both companies plan to double their production capacity in the near future.

The second transformation is the manufacturing of more-expensive and higher-quality jeans. In 1993 the maximum retail price of a pair of jeans assembled in the region fluctuated around U.S.$40; this price increased to $80 in 1998. Since 1994 the piece rates for local assembly have risen in part because of the increased demand but also because of the production of jeans with higher retail prices.

The third factor is the introduction of branded apparel. One important characteristic of the leading firms is that they base their competitive advantage on the power of their brands and the images they create. Companies such as Liz Claiborne, Calvin Klein, and Donna Karan, and even retailers such as JCPenney, Kmart, and Sears, try to distance themselves from the often exploitative conditions in maquiladora production because they are concerned about tarnishing their image among consumers (see Gereffi, García-Johnson, and Sasser 2001).

As a result of these factors, production in the Torreón region has dramatically changed. Table 10.2 offers several indicators of this transformation in the region. In 1998 the Torreón area produced 4 million pairs of jeans per week, with at least 25 percent being full-package production. Although no accurate estimate can be provided, the rest of production is moving to what is locally known as “half-package”—that is, the assembly, cutting, laundering, and finishing of jeans is performed locally but the inputs, such as denim, trim and other materials, are provided by the U.S. client.

The Role of Local Capital and Knowledge in Torreón’s Development

All three factors mentioned above are to a certain degree external to the Torreón region. However, local industrial development, even after the implementation of NAFTA, is also dependent on the resources and characteristics of the Torreón cluster, as well on the strategies and decisions taken by specific local firms. Brand marketers and retailers have “pushed” American manufacturers to move their operations to Mexico, but due to an explosive demand they have also “pulled” Mexican firms to increase their production volumes and their range of activities. The existence of local knowledge and capital has allowed Torreón firms to take advantage of the opportunities created by the demand for full-package production.

Torreón firms after the 1980s crisis went through a process of recovery. Although the legislation that made maquiladoras possible had existed since 1965, firms in Torreón had used this export system only when the local market conditions were unfavorable. In a historical context, the reorientation toward maquiladora production meant a momentary relapse for the regional industry. Mexican firms lost status and control, and they were also forced to reduce their value added. The knowledge acquired in more than thirty years of apparel production stopped being useful to them during this period. However, NAFTA and the related entrance of new organizational buyers made it possible for the few traditional companies that survived the turbulent times to use the expertise developed during their years of making apparel for the local market. Grupo Libra and Siete Leguas are two examples of companies that were established decades before NAFTA,
when Mexico was still pursuing an import-substitution strategy. Both managed to survive the turbulent 1980s, emerging as full-package suppliers for U.S. clients.

Grupo Libra has demonstrated great flexibility in adapting to changing environments. By the late 1970s and early 1980s, Libra was beginning to see the potential in the international market. When the crisis of 1982 hit the Mexican economy, 100 percent of Libra’s customers were American firms. By 1985, Libra was already offering full-package production in addition to its assembly services. Grupo Libra benefited greatly from the export boom. It has become the second largest manufacturer in the Torreón area, with a local production capacity of two hundred thousand pairs of jeans per week. Since 1996 the firm has dedicated itself exclusively to full-package production and has developed distribution systems to manage and replenish the stock of some of its U.S. clients. Libra is perhaps the only Mexican firm seriously to consider buying or developing its own brands in order to directly enter the American jeans market.

Siete Leguas represents a similar success story. Founded in 1957 as a producer of jeans for agricultural workers, the company did not reorient itself to the export market until 1988. Although it had always been a relatively small company (producing 25,000 to 30,000 jeans per week in 1982–85), by 1988 its production capacity was reduced to 3,000 pairs per week. The company’s first American customer was Action West, although this association lasted only for three months. At that time Sun Apparel arrived in the Laguna region and offered a better deal. During its association with Sun Apparel, Siete Leguas not only learned international quality standards but also increased its production from 3,000 to 60,000 pairs of jeans per week. No longer in association with Sun Apparel, the firm has constructed its own facilities for cutting, laundering, and finishing jeans. With a production capacity of 150,000 pairs of jeans per week, Siete Leguas is widely recognized as the one of the best and most innovative apparel producers in the Torreón region.

Besides local expertise in the apparel industry, an important characteristic that has allowed Mexican firms and communities to take advantage of free trade is the existence of significant sources of local capital. The Torreón region has highly diversified corporate groups that, although limited in number, are attracted to the apparel industry. Diversified Mexican companies are able to bring capital to the partnerships, while the U.S. firms bring experience and knowledge of the American market and its requirements for export success. Although it is too early to assess the extent to which these relationships will result in skill and knowledge transfer to Mexican companies, the major industrial groups involved in the Torreón ventures are wealthy and sophisticated enough to potentially buy out their U.S. partners and assume control of the interfirm networks that link the Torreón cluster to U.S. buyers.

Together these four factors—the peso devaluations, the implementation of NAFTA, the entrance of new lead firms, and the existence of local resources—are reshaping the Torreón apparel cluster. How different is full-package production as developed in the Torreón region from the traditional maquiladora model? A review of network structures in 1993 and 1998 provides a good indicator of how much the production relationships have changed since NAFTA.

Pre-NAFTA Maquiladora Production Networks

Many of the disadvantages of the typical maquiladora model can be explained by the types of relationships it fosters among firms. Figure 10.2 represents the networks typically formed between Torreón suppliers and the U.S. companies that placed their orders in 1993, under
the provisions of the 8070802 program. The simplicity of the model points out exactly what the problem is: A few manufacturers and brokers provide the orders for a large number of Mexican assemblers. The asymmetry in the relationship is reinforced by several factors. First, the most important survival factor for assembly plants is achieving a continuous flow of orders from U.S. clients, which allows them to maintain constant operations during the whole year. For U.S. companies, by contrast, one of the main purposes of subcontracting assembly in Torreón under the maquiladora program was to handle seasonal “peaks” in demand, which would make permanent relationships with firms difficult or undesirable. Second, all subcontractors offered the same service: assembly. Without the possibility of differentiating themselves from their competitors, Torreón subcontractors were easily replaced. U.S. firms could give orders to certain subcontractors in April and move them to other firms or even different regions in Mexico by May. Third, the subcontractors have few or no horizontal ties between them, so no coordination mechanisms are in place to regulate competition or to mitigate the consequences of this unbalanced power distribution. The lack of horizontal coordination facilitates the mobility of the companies placing the orders, allowing the American firms to “pressure” their subcontractors in order to obtain lower prices.

Another important problem for Torreón subcontractors is only partially addressed by Figure 10.2. The network diagram concentrates on the Mexican firms and their contacts with U.S. clients, particularly manufacturers and brokers. However, the diagram does not show the firms and networks to which Mexican firms do not have access. On the U.S. side of the border a complex set of activities, firms, and relationships form the structure of the blue jeans industry, especially its high-priced fashion segment. A major source of power for the U.S. firms placing the orders was that they monopolized access to the most profitable nodes in the American market. A handful of manufacturers and brokers benefited by serving as a point of contact between the otherwise unconnected Mexican subcontractors and their American clients, in particular brand marketers and retailers.

This “structural hole” (Burt 1992) in the jeans supply chain is based on two dimensions.
First, there is an absence of skills. By providing only assembly services, Mexican firms were unable to deal directly with brand marketers and retailers because these companies were looking only for full-package suppliers that had the ability to manage textiles, cutting, laundering, and finishing. Second, the gap is not only technical but also relational. Torreón subcontractors simply lacked the knowledge of the North American apparel supply chain and its main actors required to generate new options. Most Mexican firms, with the exception of Grupo Libra, which was searching for more clients and had opened sales offices in the United States, were dependent on the few U.S. manufacturers or brokers that were actively looking to subcontract their assembly in Mexico.

*Post-NAFTA Full-Package Networks*

Four years after the implementation of NAFTA, the network configurations created by the maquiladora model and the strategies of U.S. firms regarding their Mexican subcontractors had been profoundly transformed. Figure 10.3 indicates just how much network configurations in the Torreón region were altered in a few years. Changes occurred in the capabilities of the network as well as in the characteristics of the actors and the structure of the relationships between them. Perhaps the most important feature of the post-NAFTA organizational arrangement is that the part of the network located in Mexican territory is offering full-package production. Under the coordination of manufacturers in Mexico, textile production, cutting, laundering, and finishing are carried out in order to deliver finished products to U.S. retailers and manufacturers. Some companies, such as OMJC, distribute the jeans directly to American stores and manage their inventory information.

Although full-package production represents an undeniable improvement in capabilities that go well beyond the maquiladora model, a structural gap still exists between the

![Diagram of Post-NAFTA Full-Package Networks in Torreón](Image)
networks located in Mexico and those across the border controlled by the U.S. buyers placing the orders. Marketing and design, the two most profitable segments in apparel, remain completely under the control of U.S. companies. Of the largest Mexican-owned apparel firms in the area, only Grupo Libra and Kentucky-Lajat (a U.S.-Mexican joint venture) have sales offices in the United States. No Mexican firm has its own brand in the U.S. market. The next big step for firms located in the Torreón region is thus to create or acquire their own brands so that they can target and contact prospective U.S. clients directly.

Another salient transformation in local networks is in the characteristics of the firms forming the networks. Although the majority of assembly operations comprised small Mexican firms in 1998, a new set of organizational actors has emerged. American manufacturers that did not have any significant operations in Mexico before the implementation of NAFTA have moved to Torreón. At the same time, because of the new activities and higher profit margins of full-package production, diversified Mexican corporate groups are developing an interest in the apparel industry. Both trends have promoted the creation of new joint ventures. For example, one of the firms shown in Figure 10.3, OMJC, the third largest manufacturer in Torreón in terms of output, is a joint venture between Aalfs, a U.S. apparel manufacturer, and a Mexican family (the Martín family) that has interests in retail, restaurants, dairy farming, bakeries, and banks. A more unorthodox joint venture was formed by Grupo Lajat (which owns LP Gas, a major supplier to Mexico City) and Kentucky Apparel in 1995. Kentucky-Lajat was launched as a joint venture with production in both Mexico and United States, in which each partner owned 50 percent of the business in both countries. In July 1999, Grupo Lajat bought out its U.S. partner, and in November of the same year Kentucky Lajat’s U.S. manufacturing operations were shut down.

Grupo Lajat also exemplifies the entrance of a new kind of player into the Torreón region: textile firms oriented to the export market. At the same time that the Kentucky-Lajat joint venture was being established, Grupo Lajat, which has significant investments in cotton production in several regions of Mexico, decided to establish a textile mill. Textiles Lajat made around 3 million yards of denim per month in 1998. Most of this production (around 90 to 95 percent) was destined for products exported to the United States. The mill at the time had a total of six or seven clients; the two other major customers, in addition to Kentucky-Lajat (which bought only 30 percent of its sister company’s production), were VF Corporation’s Lee and Wrangler.

The second major textile manufacturer that produces much of the denim used in jeans marketed under major U.S. brand names is Parras-Cone. This textile mill represents a collaborative effort between North Carolina–based Cone Mills and one of Mexico’s oldest and largest textile companies, Compañía Industrial de Parras, S.A. de C.V. Their new denim mill, which produced around 570,000 yards of denim per month in 1998, is located in the town of Parras, about two hours outside Torreón.

Besides attracting new actors to apparel production, the fundamental changes that took place in the late 1990s have forced companies that were established in the region before 1994 to reconfigure their structures and strategies. For some Mexican firms the new conditions have meant moving up the ladder of apparel manufacturing. Those local firms that are able to develop high-quality production and increase their capacity and the variety of activities they perform become “hot commodities” for American clients. But what about the American manufacturers that used to hire assembly firms in the region? For them the
growth in demand and in the number of clients has reduced their control over subcontractors and has increased assembly prices. Sun Apparel, Wrangler, and Levi Strauss and Company have responded to these new challenges not by moving their operations out of Torreón but by consolidating them.

Sun Apparel responded to the challenge of reduced control and higher prices by injecting direct investment into the region and constructing its own assembly and laundering plants. Although in 1998 it still had thirty-one subcontractors in its supply network, Sun Apparel directly assembled 180,000 pairs of jeans and laundered 280,000 jeans per week (around 35 percent of its exports to the United States) through its subsidiary, Maquilas Pami. Likewise, Wrangler changed from occasional subcontracting to the construction of a high-technology hub and a series of assembly plants in Torreón's neighboring rural communities. Although Levi Strauss and Company has avoided setting up its own plants in Mexico, it has faced the new competitive environment by dramatically reducing the number of its subcontractors in Mexico from 120 in 1997 to 17 in 1998, even though production capacity was kept at 1 million pairs of jeans per month by increasing the size of orders with the remaining subcontractors. One of Levi's biggest suppliers in the Torreón region, Fábricas de Ropa Manjai, constructed a new, highly automated sewing, cutting, and laundering facility in order to meet the demands of high-volume, high-quality production for Levi Strauss and Company.

The nature of interfirm networks has also been reorganized. First, the emergence of more segments of the apparel commodity chain in the Torreón area allows for greater local linkages, as Mexican producers of denim, trim, labels, dyestuffs, chemicals for laundering, and so forth are supplying the export-oriented industry. Second, higher demand and a larger number of possible clients have relieved some of the pressures of dependency. Although exclusivity is still important for the survival of Mexican firms, particularly in the case of small assembly contractors, American clients are now competing to get the services of the best assemblers and manufacturers. For the first time Mexican firms can begin to choose their clients.

Consequences for Local Development

The ultimate critique of the maquiladora is and has always been the exploitation of cheap labor. Do the new relationships and opportunities for Mexican firms that we identify above translate into real advantages for Mexican workers? We believe that the full-package system has clear advantages over maquiladora production. Labor-related benefits of the new system can be classified into six different areas: employment; wages and benefits; working conditions; upgrading of personnel; unions; and rural communities.

Employment

Between 1993 and 1998 apparel employment in the Laguna region where Torreón is located increased 300 percent, while employment in commerce and services grew only 3 percent; construction, 80 percent; and the auto industry, 100 percent. The general dynamics of employment in the region can be summarized as follows:

- Total employment in the region has grown significantly (30 percent from 1993 to 1998).
- Most of this growth has been concentrated in manufacturing (68 percent of new employment created from 1993 to 1998 represents manufacturing jobs).
Apparel and textiles have become the most important source of employment in the region.

As a consequence of this growth, unemployment in the city of Torreón decreased from 7.6 percent in February 1995 to 3.1 percent in December 1997.

In addition to the expansion of employment opportunities in the Torreón apparel cluster, it is equally important to note that activities associated with the strengthening of the supply chain—such as textile production, laundering, and cutting—are bringing new types of jobs to the region to complement the growing number of sewing jobs. These new jobs include not only basic production activities, such as cutting fabric, but also the supervisory and technical positions needed to maintain highly automated, capital-intensive operations like Torreón’s new textile mills. The growth of textile production in Torreón is particularly significant in terms of employment, since textile jobs typically pay more than apparel jobs. For example, 1998 average hourly labor costs in the Mexican textile industry were $2.23 an hour, as compared to $1.51 in apparel (Werner International, Inc. 1998).

Wages and Benefits

Workers in the industry are paid according to a piece-rate system whereby they receive a base wage, which is typically a multiple of the local minimum wage, plus additional earnings “per piece” when they achieve certain productivity levels or fulfill set production quotas. It is widely agreed that Mexico’s minimum wage, which varies by geographic region, is not a living wage, and consequently many companies pay a multiple of it, such as 1.5 times the legally allowed minimum. When we completed our fieldwork in Torreón in July 1998, the local minimum wage was 182 pesos per week. Base wages in the companies we interviewed generally ranged between 220 and 280 pesos a week, but most workers earned more due to the piece-rate system. Maximum average salaries ranged from 500 pesos to 750 pesos a week. The exchange rate in July 1998 was approximately 8.7 pesos to the dollar, meaning that the minimum wage was equivalent to U.S.$21.00 per week and the maximum salaries ranged between U.S.$57.50 and $86.20 a week.

High turnover and a tight labor market in Torreón have been driving wages up in the region’s apparel plants, and this trend has not gone unnoticed by the factory’s owners. High and persistent turnover was repeatedly cited in our interviews as the most pressing problem Torreón’s employers face. In the summer of 1998 the employers initiated discussions among themselves in an effort to find a “solution” to the problem of wages rising as a result of Torreón’s increasingly tight labor market. The employers particularly wanted to address the practice of companies pirating away each other’s workers with wage increases, but at the time of our fieldwork their efforts in this regard had not been successful.

Working Conditions

The presence in the region of visible clients with high investments in their brand names prompts improved working conditions. Large retailers and marketers do not want their brands associated with the exploitation of workers or with unsafe working conditions. Companies such as the Gap and JCPenney have created and imposed detailed codes of conduct related not only to the final quality of the product but also to the quality of the process. Any plant or company that fails to fulfill these requirements, including compliance with local labor laws, safety practices, and even the conditions of the bathrooms, is in danger of losing its contracts. In addition, since most plants and factories
have been constructed since 1994, they were designed to provide a safe working environment, with proper ventilation, lighting, ergonomic equipment, and the like. In general the working conditions of many of these Mexican plants are better than those offered by local competitors and often are better than those in similar factories in the United States.

Upgrading of Personnel

The analysis of this dimension is complicated by the characteristics of the local labor market and of the industry. Highly competitive labor markets have forced many companies to slash educational requirements to a minimum, with some companies not even asking for basic writing and reading skills. In general U.S. companies are more likely to require a minimum educational level (typically completion of elementary school) than are their Mexican counterparts. Given the greater technological complexity of textile production, the area’s textile mills are more demanding than the region’s sewing factories, requiring a high school education for all their workers. Companies provide limited options for upward mobility and relatively few positions for skilled workers and professionals. However, the low educational requirements can be seen as favoring the most impoverished stratum of Mexican society. Wages are not tied to education but to productivity, offering an opportunity for the most disadvantaged workers in Mexico to earn a decent wage. Furthermore companies frequently provide opportunities for workers to continue (or even begin) their education.

Unions

In tandem with the liberalization of the economy, the Mexican government has reduced the power of unions to a minimum. The role of unions in the apparel industry in the Torreón region has been limited in many cases to helping the firms and their managers deal with the workers. Effective representation and collective bargaining are virtually nonexistent. Instead, workers exercise their power by moving from one company to another fairly often. They use their mobility as a source of bargaining to obtain small wage increases and nonmonetary benefits such as transportation, free lunch, classes, raffles, and prizes. However, this is an advantage contingent on a continued high demand for labor.

Rural Communities

A few manufacturers are evading the turnover problem in Torreón by relocating production to outlying rural areas. Many of the collective farms that were a centerpiece of Mexico’s agricultural program for decades and that were privatized under the administration of Mexican president Carlos Salinas de Gortari are located around Torreón in the Laguna region. The privatization of these cooperatives, known as ejidos, has created a supply of landless rural workers with few employment opportunities. Consequently, rural communities have become a dependent periphery, with wages 30 percent lower than in urban areas. Furthermore, rural communities often perform only assembly work and have no access to the technological advances mentioned above.

Although concerns may be raised about the proletarianization of this formerly agricultural labor force with the arrival of sewing factories, such objections must be evaluated in light of the limited employment and industrialization opportunities available to these communities. At the time of our fieldwork, the practice of relocating apparel production to these areas was limited. Around 10 percent of apparel jobs are located in rural communities, while the rural labor force represents 30 percent of the total labor force in the greater Torreón region.
Conclusions

The main conclusion that can be drawn from the Torreón case is that the apparel industry in the region is far removed from the standard maquiladora model. Although the number of assembly firms has grown considerably in Torreón since the implementation of NAFTA in 1994, new developments challenge the “maquilization of Mexico” scenario. A comparison between the region today and in 1993, when the maquiladora model was dominant, shows how the network linkages, both external and internal to Torreón, have been profoundly transformed in less than five years. New types of organizational actors have emerged, providing additional resources and a wide variety of organizational strategies and structures. Finally, the combination of full-package networks, the explosive growth of demand for Torreón’s exports, and the emergence of new actors has contributed to an amelioration in the conditions for workers. Since these shifts are quite apparent, two questions become pertinent: First, if not maquiladora, then what exactly is the production model in the Torreón region? Second, is this kind of transformation likely to occur in other regions of Mexico?

Answering the first question returns us to the global commodity-chains and industrial-district approaches. Since external as well as internal linkages have been created in the Torreón region, both literatures are relevant for the description and explanation of changes in production relations. In at least one sense, however, the commodity-chains literature better describes the process and the driving forces of the transformation to full-package supply in Torreón. (See Bair and Gereffi 2001 for a more detailed analysis of these issues.) The establishment of direct linkages with a variety of lead firms, particularly retailers and brand manufacturers, has been the engine running the growth and transformation of the Torreón region. The strategic needs of these lead firms led them to transfer diverse activities to Mexico. The economic forces unleashed in the apparel supply chain have attracted new investments, created pressures for growth, and promoted the transfer of technologies. The transformation process is thus explained by the power and ability of these actors to take advantage of the opportunities that NAFTA has created.

Even if external actors are the main drivers of change, we should not underestimate the importance of local factors. Local expertise, capital, and entrepreneurial vision have contributed significantly to the shape and structure of the apparel industry in the region. However, Torreón is far from being an industrial district. If what characterizes a district is the formation of effective institutions as well as cooperative mechanisms among firms, these elements appear to be in short supply in the Laguna region. If certain firms in Torreón have acquired the role of network coordinators, their relationship with small firms tends to be hierarchical and unequal. Horizontal cooperation between firms is rare. Networks are created to fulfill volume demands, and standardization is the norm. Neither the firms nor their clients frequently seek flexibility and adaptability. Furthermore, any institutional development seems to be two steps behind externally driven changes. For example, it was only after NAFTA that the local industry association was created, and even in 1998 its scope and influence were limited. Although the industry association tries to create a forum to address common issues confronting local firms, the main ones being labor shortages and rising wage rates, few specific measures have been implemented.

This argument is closely related to our second question: Is this kind of development likely to occur in other regions of Mexico? Both the peso devaluations and the imple-
The implementation of NAFTA are events with national implications. The unsustainability of production for the local market, the attractiveness of export production, and the potential advantages of exporting by way of NAFTA are factors that have affected not only the Torreón region but the rest of Mexico as well. However, we believe that the expanded U.S. market access provided by new lead firms and the available local resources have been key factors in preventing the "maquilization" of Torreón. Furthermore, these factors are subject to regional variations.

Continued growth and expansion of the Torreón apparel cluster are not guaranteed. Follow-up fieldwork conducted in 2001 revealed that a slowdown in the U.S. economy had negatively impacted on the region, and U.S. clients were placing fewer orders with local apparel manufacturers (Bair and Gerelli 2001). Industry experts estimated that jeans production had declined by as much as 20 percent between October 2000 and May 2001, compared with the previous year. During the same period, an estimated eight thousand Torreón apparel workers lost their jobs. This vulnerability to consumer demand north of the border is the unfortunate consequence of increased dependence on the U.S. market.9

The risks caused by a high level of concentration on one export market apply to all apparel-exporting clusters in Mexico. The decline in demand from U.S. clients that has hurt the Torreón cluster has undoubtedly affected virtually all apparel-producing regions in Mexico. Compared to these other exporting regions, the overall prospects for Torreón remain bright. The Torreón case makes clear that being able to attract the right kind of lead firms to a particular region is a prerequisite for Mexican communities to move away from maquiladora production toward a more development-oriented, full-package manufacturing model. These new lead firms create opportunities for Mexican suppliers to go beyond the typical maquiladora role, but they create only "opportunities," not guarantees of success. The presence of local capital, skills, entrepreneurial drive, and other resources are necessary but not sufficient conditions to strengthen the position of Mexican firms in the apparel commodity chain. The demonstration effect that lead firms have created may encourage more U.S. manufacturers to move their operations to Mexico, but this must be coupled by the efforts of savvy Mexican entrepreneurs to upgrade their operations or to start new export firms. Thus, even though external forces drive the changes in Torreón, local factors mediate this process.

Since the conditions that foster full-package production and a more favorable position for Mexican firms are local, the possibility for uneven consequences of NAFTA among different regions of Mexico is high. Due to labor shortages and relatively high wages, some manufacturers (even the new big Torreón manufacturers) are moving their assembly operations to rural communities around Torreón or to the southern part of Mexico (e.g., the Yucatán and Campeche). What these manufacturers are trying to do is partially to replicate the conditions of the maquiladora model. By establishing factories or subcontracting work with small plants in rural communities with few alternative sources of employment and limited access to lead firms, they seek to retain the high degree of control over cheap production that we associate with the maquiladora model. If NAFTA has not resulted in the maquilization of Mexico as a whole, it may still result in the maquilization of rural and southern Mexico (Tardanico and Rosenberg 2000).

The role of regional policy under the new conditions created by NAFTA is clear. Regional and local governments should create incentives to attract U.S. buyers (retailers,
brand marketers, and manufacturers) to their locations and provide support for Mexican firms so that they can satisfy the needs of these demanding clients. This experience provides a basis for Mexican firms to move up the apparel commodity chain into higher-value-added activities themselves. Without this process, the maquilization of many communities may be the unavoidable outcome of NAFTA.

Notes

1. Historically only 1 to 3 percent of these inputs have been produced locally within Mexico.

2. For example, the duty-free importation of U.S.-made inputs for assembly in Mexico—the primary advantage of the maquiladora program—is now generally available for all firms with cross-border trade and production networks, not just the maquiladoras. While the full phase-in of NAFTA implied the official end of the maquiladora program in January 2001, “maquiladoras,” defined as companies that perform mainly assembly operations for the export sector, will continue to exist.

3. All three authors participated in the July 1998 fieldwork, while Jennifer Bair and Gary Gereffi carried out the July 2000 fieldwork. For a more detailed discussion of the latter research, see Bair and Gereffi (2001).

4. In the United States the maquiladora program is also referred to as the 807 program, for the numbered clause of the U.S. trade law that described this type of cross-border production sharing. The numbering of the relevant clause was later changed to 9802, so it is commonly referred to in the literature as 807/9802 production.

5. OMJC produces about 140,000 pairs of jeans a week for clients such as JC Penney, Levi Strauss and Company, and Tommy Hilfiger.

6. Textiles Lajat was sold to Parras by Grupo Lajat in December 1998.

7. Wrangler is a subsidiary of VF Corporation, a major U.S. apparel manufacturer whose brands include Lee, Vanity Fair, Jansport, and Healthtex. (See Chapter 2 in this book for a discussion of VF.) Wrangler was formerly the largest division of the Blue Bell Corporation, which was acquired by VF in November 1986, and it remains the largest company within VF Corporation. Wrangler has a high degree of autonomy vis-à-vis its parent company, and decisions about where to locate production facilities such as the one in Torreón are made at the divisional level.

8. The incorporation of these regions into full-package networks may even be creating ownership opportunities for workers. At least one Mexican manufacturer whose subcontracting network includes a number of factories located in the former ejido areas was instrumental in establishing these factories as worker-owned companies controlled by the employees living in the community.

9. Heavy reliance on the U.S. export market is a general feature of the Mexican economy. In 2000 the United States received 89 percent of Mexico’s total exports, up from 83 percent in 1993 (INEGI 2001).

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