Gary Gereffi
January 31, 2005

Export-Oriented Growth and Industrial Upgrading: Lessons from the Mexican Apparel Case[1]

A case study of Global Value Chain analysis

The Maquila 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 $1.8 billion in 1994 to a peak of $8.7 billion in 2000 and $7.2 billion in 2003, is impressive evidence of this claim. NAFTA has also promoted the consolidation of apparel export production centers. This case study concentrates on one of these production centers, the Torreon region of Mexico, which has been called the new blue jeans capital of the world.

Torreon is a dynamic industrial cluster of 500,000 workers located in the northern Mexican state of Coahuila, about four hours from the Texas portion of the U.S. border by car. It is located in the heart of La Laguna region, well known for its cotton and dairy products. Torreon's apparel industry is actually a cluster of three cities, as it straddles the near-by municipalities of Gómez Palacio and Lerdo, in the neighboring state of Durango. Following an economic recession in the early 1990s, Torreon has been one of the main beneficiaries of Mexico's recent export boom. Although Torreon is also home to other export-oriented manufacturing sectors, such as autoparts and machinery, the apparel and textile industries have been the star performers in terms of export growth and job creation.

Despite this undeniable growth, a verdict on the consequences of NAFTA for both Torreon 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 maquila form of production occupies a 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 it is a valuable source of export revenue and job creation for Mexico. However, the program's critics see it as the ultimate example of a "new international division of labor" that traps developing countries into 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 maquilas are imported,[2] the maquilas do not stimulate growth in the rest of the economy.

---

[1] This case study draws substantially from Bair and Gereffi (2001) and Gereffi, Martinez, and Bair (2002), along with more recent material on the topics covered.
[2] Historically only 1-3% of these inputs have been produced locally within Mexico.

This debate rests implicitly on three assumptions: a) that the change in Torreon (and other Mexican production centers) from local production to export manufacturing is a direct consequence of NAFTA; b) that the unavoidable consequence of the free trade agreement is the conversion of Mexico into a giant maquila (or assembly-oriented) economy; and c) that maquila production does not promote local 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 do 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 is the role played by foreign capital in establishing favorable or unfavorable conditions for local firms? How do local institutions and conditions mediate this process? [3]

The New Blue Jeans Capital of the World

Torreon is one of several rapidly growing post-NAFTA apparel production clusters in Mexico, reflecting the increased importance of this industry to the country's overall export profile in recent years. Mexico emerged as a world-class player among global textile and apparel exporters during the second half of the 1990s. In 1991, Mexico was the seventh largest exporter of apparel to the United States. By the decade's close, Mexico topped China to gain the number one spot, with the value of Mexican apparel exports increasing from $1.2 billion in 1990 to $8.8 billion in 1999 (SECOFI, 2001). However, China pulled ahead of Mexico in 2001 and is predicted to widen its lead after the phase-out of Multi-Fiber Arrangement (MFA) quotas in 2005.[4]

While overall apparel exports from Mexico have increased dramatically over the past five years, we focus on the leading item in Mexico's garment export repertoire: blue jeans. In 1999, the United States imported more than $2.6 billion of trousers from Mexico, accounting for 34% of total apparel imports from its southern neighbor (USITC, 2001). Torreon specializes in denim blue jeans, which account for the lion's share of cotton trousers. In 2000, firms in the Torreon area were producing an average of six million garments a week, of which 90% were exported. Jeans accounted for 75% of the exported apparel, and thus the region made over four million pairs of jeans each week (see Table 1).

[Table 1 about here]

In contrast, El Paso, Texas— Torreon's predecessor as the blue jeans capital of the world and a major manufacturing center for Levi Strauss & Co. before the company closed its last factories there in 1999—produced two million pairs of jeans a week at its peak in the early 1980s. To keep pace with this dramatic increase in output, employment in Torreon's 360 apparel factories grew considerably from 12,000 jobs in 1993 to an estimated 75,000 in 2000. In addition, the share of Mexican denim used in Torreon's exported blue jeans increased from 1-2% in 1993 to 15% in 2000, and the piece rates paid to firms for blue jean assembly rose two- to threefold (Table 1).

[3] For an extensive treatment of these issues by a variety of researchers in the context of the North American apparel industry, see Gereffi, Spener, and Bair (2002).
[4] Illustrations of China's rapid expansion in production capacity abound. See, for example, de Jonquieres (2004), McGregor and Harney (2004), and Barboza (2004).

Explaining Torreon's Export Success

There are several reasons for Torreon's export success. Although not located along the northern border where the country's in-bond, export-oriented maquila sector has historically been strongest, Torreon 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 turn-around 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 Torreon area also 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.

However, this dynamism in the export of jeans is a relatively new phenomenon. In 1993, Torreon produced only 500,000 pairs of jeans a week, most of them under the provisions of the 807/9802 maquila program[5] and mainly limited to assembly activities. Apparel export manufacturing only became important for the region in the mid-1980's. Prior to this time, apparel production focused on the domestic market. During the last 15 years, the blue jeans industry in Torreon has undergone a series of shifts: from local production to maquila exporting to full-package manufacturing. This evolution has been driven by four main factors:

1. Mexico's peso devaluations
2. NAFTA and the subsequent elimination of tariffs and trade barriers
3. New organizational buyers, especially apparel retailers and brands
4. Upgraded capabilities and local expertise applied to apparel production

The effects of each one of these factors will be examined below.

The Peso Devaluation Effect

The Torreon region has a strong tradition in the apparel and textile industry. Textile mills have been located in the region since the late 19th century. During the 1940's and 1950's companies like 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 the following 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. 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

[5] In the United States, the maquila 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.

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. However, jeans manufacturers must wait a period of time in order 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 domestic 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 Torreon companies. Although these firms performed all production activities related to the manufacturing of jeans (assembly, cutting, laundering, finishing, marketing and design), their quality was not up to international standards. Torreon firms were unable to offer full-package production with the quality requirements of the American clients. Thus, the few companies that managed to survive had to specialize in assembly and became maquila subcontractors for American manufacturers like Sun Apparel, Levi's, and Farah. This transformation meant, in reality, a de-skilling and a reduction in the value added by Torreon firms.

After three years of relative stability, the Mexican peso suffered a dramatic devaluation at the end of 1994. 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 peso devaluation were an increase in the number of U.S. clients interested in the Torreon region, an increase in the number of Mexican apparel assembly plants, and an increase in the production capacity of already existing firms.

The NAFTA Effect

The upsurge of apparel assembly in the Torreon region was initially due to the Mexican peso devaluations and not NAFTA. What then was the effect of NAFTA on the industry? The most elementary consequence of NAFTA 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 non-monetary barriers to all garment production activities, including laundering, cutting and finishing, as well as the use of Mexican inputs such as textiles (denim), buttons, labels, etc. 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. Companies that decided to move their operations to Mexico after the implementation of NAFTA would enjoy lower production costs than other companies.

Figure 1 shows how these new conditions reoriented production activities in the Torreon 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. This deepening of the apparel commodity chain in Mexico suggests that NAFTA has allowed

Mexico to develop full-package production capabilities, where not only assembly but also all other required manufacturing activities, including the production and purchase of raw materials, are performed within the country. However, marketing and retail, the most profitable activities in the apparel industry, are still exclusively performed in the United States.

[Figure 1 about here]

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. The coordination functions in the Torreon region have been intensified by an additional factor: 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

Prior to NAFTA, the lead firms in the apparel commodity chain (retailers, marketers, and branded manufacturers) sourced primarily from East Asia because countries like Hong Kong, South Korea, and Taiwan were home to contract manufacturers that could producer orders for finished apparel according to the buyers' specifications[6] (Gereffi and Memodovic, 2003). After NAFTA, retailers and marketers became eager to transfer as much of this business to Mexico as possible because NAFTA's rules of origin give apparel produced under full-package arrangements the same preferential access to the U.S. market as apparel exported under the maquila regime, as long as it is manufactured from North American textile inputs.

In 1993, only four U.S. manufacturers—Farah, Sun Apparel, Wrangler, and Levi Strauss & Co.—had a significant presence in Torreon. By 2000, the number of clients grew to more than two dozen (see Table 2). Table 2 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, like Nike, Tommy Hilfiger, or Liz Claiborne) and retailers (such as Gap and The Limited, as well as department stores and discount chains). Both retailers and marketers require full-package supply because they dedicate themselves to design, distribution, and marketing, rather than to production activities.

[Table 2 about here]

The contrast between manufacturers and other big buyers (retailers and marketers) in their capabilities and needs gives rise to the difference between assembly and full-package networks. Figure 2 shows the typical manufacturer-dominated assembly network, which was prevalent in Torreon from the mid-1980s until the mid-1990s. The assembly plants on the Mexican side of the border received cut parts from U.S. manufacturers or brokers. In turn, these assembly plants often subcontracted out a portion of their production to smaller firms known as submaquilas.

[6] Although traditionally retailers have sold garments made by apparel companies, most retailers now have their own store brands called private labels. Examples of private label jeans include JC Penney's Arizona brand and Sears' Canyon River Blues line.

These cut parts were to be sewn into garments and then re-exported to the United States under the maquila regime.

[Figures 2 and 3 about here]

In Figure 3, the assembly networks typical of the maquila phase have diversified to include the full-package networks characteristic of buyer-driven commodity chains (see Gereffi and Memodovic, 2003). In this full-package model, a local manufacturer receives detailed specifications for garments from the buyer and the supplier is responsible for acquiring the inputs and coordinating all parts of the production process: the purchase of textiles, cutting, garment assembly, laundry and finishing, packaging, and distribution.

The Role of Local Capabilities and Upgrading in Torreon's Development

All three factors mentioned above are to a certain degree external to the Torreon region. However, local industrial development is also dependent on the capabilities and resources of the Torreon 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 performed. Upgrading thus is occurring at the firm level in Torreon, in conjunction with the increasing demands of U.S. buyers for full-package production.

Most orders in Torreon are handled by a small number of first-tier manufacturers with the capabilities and capital needed to coordinate integrated networks. Table 3 lists the top 10 firms in Torreon according to their production volume and the type of activities they perform. Four of these 10 firms are "full-package" manufacturers, meaning that they receive an order from a client and deliver a finished product. Four more are what may be termed "half-package" producers, meaning that they carry out all the production activities (cut, sew, and launder), but do not buy the fabric. The difference between full-package and half-package is indicated in Table 3, where the capabilities of some firms include an "F" denoting that they purchase the fabric for the orders they fill, while others have only C, S, and W listed for cut, sew, and wash, respectively.

[Table 3 about here]

All four of these full-package manufacturers—Kentucky-Lajat, Libra, Siete Leguas, and Pafer Huichita—are Mexican-owned companies. The emergence of local full-package companies competing alongside a U.S.-owned contractor like Maquilas Pami (the sixth-largest manufacturer in Torreon and a subsidiary of Jones Apparel of New York) is significant. Having gained experience through maquila production for U.S. clients and having earned the trust of foreign buyers, Mexican firms are now developing direct links to export markets. These full-package firms are upgrading by eliminating middlemen like brokers or trading companies, which allows them to enjoy the higher profits full-package production offers as compared to maquila orders.

Together these four factors—the peso devaluations, the implementation of NAFTA, the entrance of new lead firms, and the existence of firm capabilities at the local level—reshaped the Torreon apparel cluster from the traditional maquila model to one involving a significant proportion of full-package production. But slumping U.S. apparel demand since 2001 and the looming competitive threat of low-cost Chinese exports raise questions about the long-term sustainability of Torreon’s full-package apparel industry. Furthermore, we need to assess the kinds of local development benefits associated with the full-package model.

Consequences for Local Development

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 maquila production, often linked to the exploitation of cheap labor. Labor-related benefits of the new system can be classified into six different areas: employment; wages and benefits; working conditions; unions; and rural communities.

Employment. Dramatic employment growth in the apparel industry is the most obvious impact of Torreon’s export boom on the local labor market. Apparel and textiles have become the major source of employment in the region. Between 1993 and 1998, apparel jobs increased 300%, while during the same period employment in commerce and services only grew 3%, construction 80%, and the auto industry 100%. In 1993, the area employed 12,000 workers in the apparel and textile industries; by 2000, the number had grown to 75,000 (see Table 1). It is equally important to note that activities associated with the deepening 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 workers.

Wages and benefits. In terms of wages, the evidence is more mixed. Workers in the apparel 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.[7] Companies repeatedly said that in Torreon's tight labor market "no one works for minimum wage" and many of the sewers in the region's factories were earning well in excess of two times the legal minimum. Apparel wage increases in Torreon generally ran ahead of inflation, but in 2001 real wages were just returning to the levels reached prior to the 1994 devaluation (*The Economist*, 2000). So many Mexican workers actually experienced a decline in their standard of living in the late 1990s.

Working conditions. The presence in the region of very visible U.S. 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 like Gap and JC Penney have created and imposed very detailed Codes of Conduct related not only to the final quality of the product, but also to stringent process standards. 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

[7] In 1998, the local minimum wage, which varies by geographic region in Mexico, was 182 pesos per week (US$21.00). With base pay plus incentives, average salaries for Torreon’s apparel workers ranged from 500 pesos ($57.50) to 750 pesos (US$86.20) per week. By July 2000, average sewing wages in Torreon had risen from 650 pesos ($68.40) to 1,000 pesos ($105.30) a week for the most productive workers (Bair and Gereffi, 2001: 1898).

1994, they were designed to provide a safe working environment with proper ventilation, lighting, ergonomic equipment, etc. Thus, the working conditions of many of the larger and more modern Mexican plants were superior to those offered by local competitors and often better than those in similar factories in the United States.

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 Torreon 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 non-existent. 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 non-monetary benefits, like transportation, free lunch, classes, raffles, and prizes. However, this is a benefit contingent upon a continued high demand for labor.

Rural Communities. . A few manufacturers attempted to evade the turnover problem in Torreon 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 (1988-1994) are located around Torreon 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% lower than in urban areas. Furthermore, rural communities often perform only assembly work and have little or no access to the technological advances mentioned above.

Downturn in Torreon and Future Challenges for Export-Oriented Development

The apparel industry in Torreon has evolved well beyond the traditional maquila model. A comparison between La Laguna today and in 1993, when the assembly model was dominant, shows how value chain linkages, both external and internal to Torreon, have been profoundly transformed in less than a decade. New types of organizational buyers have emerged, providing additional resources and a wide variety of upgrading opportunities for local apparel suppliers. In addition, working conditions in the apparel industry have improved, but real wages for Torreon's workers have not risen significantly above their pre-1994 levels.

Recent events in Torreon indicate that links to the global economy can produce disruption as well as growth. A slowdown in the U.S. economy had a dampening effect on the export boom in Torreon at the end of 2000. Around 8,000 apparel jobs were lost between October 2000 and May 2001 (Bair and Gereffi, 2001: 1899). Weekly output in La Laguna declined from 6 million garments in 2000 to 4 million in 2004, the same level as 1998, and apparel employment in Torreon fell from 75,000 in 2000 to just 40,000 in 2004 (see Table 1).

Theoretically, a value chains approach would lead us to expect that job losses and plant closings will be concentrated among the small subcontractors located at the bottom tiers of the chain. Furthermore, we would expect that companies possessing the additional capabilities associated with full-package production to be less negatively impacted than the assembly-oriented maquilas. Evidence from Torreon confirms that the companies that have suffered most to date are smaller, locally owned subcontractors. However, the negative implications of the slowdown could spread beyond this group of firms. Plus, the absence of institutional support mechanisms in Torreon means that the adjustment to a sustained economic downturn will be harder to manage given the heavy reliance on the U.S. market as the source of export growth.

More broadly, there are several sets of questions that emanate from the challenges raised by the Torreon experience in the 1994-2004 period. First, will Torreon be able to continue to upgrade in the apparel industry, or has the downturn in the U.S. export market and the substantial loss of output and employment since 2000 pushed the region into an irreversible decline? Full-package production is a dynamic model, and it must evolve in conjunction with changes in international competition and the needs and capabilities of the lead firms in the global apparel value chain. Key to any significant upgrading in Torreon will be the ability of major suppliers in the region to move into the high-value added activities in the apparel supply chain, to find a way to deal with low-cost competition from China and elsewhere, and to develop stronger sources of institutional support from the government and related firms in the Laguna region.[8]

Second, what is the relevance of the Torreon case to the neighboring apparel export industries in Central America and the Caribbean? Like Mexico, they rely almost exclusively on export sales to the U.S. market, and economies such as Nicaragua, Honduras, and the Dominican Republic are far more dependent than Mexico on apparel as a percentage of total national exports.[9] While the Caribbean Basin economies have traditionally relied on the assembly model for their apparel exports, they have been making significant strides, in conjunction with Asian intermediaries from Taiwan, South Korea, and Hong Kong, to move in the full-package direction. Today Honduras has become the third most important supplier of apparel to the United States (after China and Mexico), and 34% of Honduran apparel companies offer full-package services to their clients. Nicaragua is still a relatively small apparel exporter to the U.S. market, but textile and apparel export sector is growing very fast and the maquila sector (mainly apparel items) accounted for 42% of Nicaragua's total exports in 2003 (World Bank, 2005).

Third, what will be the impact of the phase out of MFA quotas in 2005 on apparel exports from Mexico, Central America and the Caribbean to the world's largest apparel importer, the United States? China's share of U.S. apparel imports is predicted to increase from 16% in 2004 to 50% in 2008, with India moving to second place with a 15% import share. Mexico is predicted to fall from 10% of total U.S. apparel imports in 2004 to just 3% in 2008, and the rest of the Americas will drop from 16% to 5% (de Jonquieres, 2004). Can regional proximity and time to market advantages overcome the lower production costs in textiles and apparel associated with giant Asian exporters, such as China and India?

---

[8] See Appendix A for a summary of new developments within the cluster of blue jeans manufacturers in Torreon.

[9] For example, in 2002 apparel was less than 5% of Mexico's total exports, but it represented 45% of the Dominican Republic's national exports, and it was the most important export item for both Honduras and Nicaragua.

References

Bair, Jennifer and Gary Gereffi. 2001. "Local clusters in global chains: The causes and consequences of export dynamism in Torreon's blue jeans industry." *World Development* 29, 11 (November): 1885-1903.

Barboza, David. 2004. "In roaring China, sweaters are west of socks city." *New York Times*, December 24.

de Jonquieres, Guy. 2004. "Garment industry faces a global shake-up." *Financial Times*, July 19.

Gereffi, Gary and Olga Memodovic. 2003. "The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries?" United Nations Industrial Development Organization (UNIDO), Sectoral Studies Series, 2003, available for downloading at http://www.unido.org/doc/12218.

Gereffi, Gary, Martha Martínez, and Jennifer Bair. 2002. "Torreon: The new blue jeans capital of the world." Pp. 203-223 in Gary Gereffi, David Spener, and Jennifer Bair (eds.), *Free Trade and Uneven Development: The North American Apparel Industry after NAFTA*. Philadelphia, PA: Temple University Press.

Gary Gereffi, David Spener, and Jennifer Bair (eds.). 2002. *Free Trade and Uneven Development: The North American Apparel Industry after NAFTA*. Philadelphia, PA: Temple University Press.

IMF (International Monetary Fund). 1999. *International Financial Statistics*. Washington, DC: IMF.

McGregor, Richard, and Alexandra Harney. 2004. "China gets set to clothe America when quotas end." *Financial Times*, July 20.

SECOFI (Secretaría de Comercio y Fomento Industrial). 2001. Official data of the Mexican Commerce and Industrial Development Ministry, now Secretaría de Económia, available at <www.economia-snci.gob.mx>.

The Economist. 2000. "Mexico's trade unions stick to the same old tune." October 23, pp. 35-36.

USITC (United States International Trade Commission). 2001. Official statistics from the Office of Textiles, U.S. Department of Commerce, available at <www.usitc.gov>.

World Bank. 2005. "Honduras and Nicaragua value chain analysis," draft report. January.

Appendix A:
New Developments in the Blue Jeans Cluster of Mexico's Laguna Region[10]

Chinese competition is pushing Mexican suppliers from standardized to "fashion" jeans

In response to stiff Chinese wage competition, the major producers in the Laguna region have largely abandoned the single style, large production runs of the late 1990s. Instead of basic jeans, most of the region's production now has some aspect of "fashion" to it. This commonly involves hand sanding, destruction, chemical treatment, multiple washes, or artistic ornaments. Fashion jeans require small, customized production runs and short product cycles, utilizing Mexico's fast speed to market to capitalize on rapidly shifting U.S. clothing trends. Fashion production increases the value of a pair of jeans 40-70%, and it usually generates a higher profit margin per piece.

La Laguna producers are creating a new, expanded version of "full package" production

The definition of full package has changed in recent times as the Laguna region has incorporated many aspects of production that were formerly regarded as core competencies of their American customers. Many of the largest firms in the Laguna area now have a team of designers and are able to use a photograph supplied by the customer – rather than a pattern – and return a packaged and tagged pair of jeans through the maquila's wholly owned distribution network.

Another aspect of the "new" full package is that the maquilas are increasingly being entrusted with sourcing decisions. Consequently, the past three years have seen some maquilas use a significantly higher percentage of Mexican inputs, thus building important backward linkages to domestic industry. Nonetheless, almost all inputs are still NAFTA-made, and the wide use of Asian hardware (snaps, buttons, etc.) does not disqualify the finished jeans from tariff-free entry into the United States.

A few firms have begun to design their own collections in order to propose either designs or fabric sources to their clients. Using lavish showrooms, these producers are developing designs to be incorporated into a customer's product line. Many of their proposed pieces are customized, drawing heavily on the style of the garments that the maquilas already make for a given customer.

The Laguna region has had some success with Own Brand Manufacturing (OBM), and there are a number of established brands in the region that sell to the domestic market. OBM for export, however, has seen more mixed results. One maquila's branded retail venture recently folded in the United States, but another maquila has had tremendous success selling its own brand of jeans through medium-sized chain stores in the American northeast. This latter one was able to successfully introduce a high-quality brand with minimal advertising costs, and it plans to eventually convert all of its production to OBM, which yields higher profit margins.

---

[10] These are preliminary results from research conducted in La Laguna by H. Michael Rosenberg, Harvard University, during the summer of 2004. A more definitive analysis will be available in a Harvard thesis to be completed by Mr. Rosenberg in the spring of 2005.

Mexican companies are going directly to the United States for orders

A key to the dominance of the major producers in the Laguna region remains their access to U.S. orders, and most have at least one, if not more ,offices in the United States. El Paso, Texas is a popular location, as is New York City. In many cases, the U.S. office is simply a sales agent, but in a few cases it is a design shop as well.

Government attitudes toward the apparel industry are more supportive

The local government's attitude toward the garment industry has changed dramatically since the late 1990s. The city of Torreon and the state of Coahuila have done away with many of the subsidies of the boom era, and their economic development strategy is now almost entirely focused on the promotion of other industries, such as automobile production and aerospace.

With the help of the government and a team of academics, a very complex integrated enterprise is emerging in the Laguna region. Mostly made up of medium-sized producers, the 13-member group has two distinct projects: the completion of a local design center, and the inauguration of a U.S. office to help launch a commonly held brand. Members of the enterprise, who have already put up a reasonable amount of capital to share the fixed costs of acquiring full package capabilities, will get preferential treatment in each of these two institutions, which will be completed in the near future.

Attitudes toward cooperation are changing gradually in Mexico, pressured in part by strong foreign competition. There is a new willingness to support common ventures in order to resolve common problems. Ideas like a common fashion-training program or a shared childcare are more popular now than they were during the boom years.

The economic burden is greatest for small and isolated firms

Subcontracting remains an important part of business in the Laguna region, but the drop in order volume and employment has been most harshly felt be the smallest producers. In the boom years, many dozen-machine shops sprang up to handle excess volume from the larger maquilas. Now that many of the big players have surplus capacity, there is little business left to spill over, devastating the small operations.

Table 1

APPAREL INDUSTRY INDICATORS FOR TORREON / LA LAGUNA*

Variables	1993	1998	2000	2004**
Total Output (garments per week)	500,000	4.0 million	6.0 million	4.0 million
Output per Company (garments per week)	Max. 50,000	Max. 230,000	Max. 480,000	Max. 300,000
Mexican Denim in Export Production	1-2%	5%	15%	15%
Assembly Price per Piece	US$0.90-1.10	US$1.20 - 2.05	US$1.60-3.00	US$2.00 - 3.00
Employment	12,000	65,000	75,000	40,000

* Torreon is the center of La Laguna, a higly integrated economic region formed by two additional cities (Gomez Palacio and Lerdo) and several rural communities. Although each city is a distinct political entity, they form an integrated production zone.

**These statistics are preliminary estimates from research carried out in Torreon by H. Michael Posenberg, Harvard University, during July-August 2004. Permission to cite these figures is gratefully acknowledged.

Table 2

MAIN U.S. CLIENTS FOR TORREON APPAREL EXPORTS

Type of Clients	1993	2000
Manufacturers	Farah (M) Sun Apparel (M)	Sun Apparel-Jones of NY (M) Aalfs (M) Kentucky Apparel (M) Red Kap (M)
Branded Marketers	Levi's (BM,M) Wrangler (BM,M)	Levi's (BM,M) Wrangler (BM,M) Action West (BM,M) Polo (BM) Calvin Klein (BM) Liz Claiborne (BM) Old Navy (BM) Tommy Hilfiger (BM) Donna Karan (BM) Guess (BM) Chaps (BM)
Retailers		Gap (BM,R) The Limited (BM, R) K-Mart (R) Wal-Mart (R) JC Penney (R) Sears (R) Target (R)

M=Manufacturers
BM=Brand Marketers
R=Retailers

Note: Firms aligned to the right are hybrids.

Table 3

Top 10 Apparel Manufacturers in Torreon, Mexico -- July 2000

Rank	Firm	Capacity[1]	Employment	Capability[2]	Ownership
1	Wrangler	480,000	1,900	C,S,W	U.S. subsidiary[3]
2	Kentucky-Lajat	400,000	5,500	F,C,S,W	Mexican[4]
3	Libra	400,000	5,000	F,C,S,W	Mexican
4	Siete Leguas	250,000	3,200	F,C,S,W	Mexican
5	Grupo Denim	245,000	3,300	C,S,W	Mexican
6	Maquilas Pami	240,000	3,800	C,S,W	U.S. subsidiary[5]
7	Red Kap (RKI)	156,000	1,430	S	U.S. subsidiary[6]
8	Pafer Huichita	150,000	2,450	F,C,S,W	Mexican
9	Grupo Impeccable	150,000	1,500	C,S,	Mexican
10	Original Mexican Jeans Co. (OMJC)	135,000	3,000	C,S,W	Joint venture[7]
Total		***2,606,000***	***31,080***		

Notes:

[1]Pairs of jeans per week.

[2]Capabilities: F=fabric, C=cutting, S=sewing, W=washing & finishing.

[3]Wrangler's parent company is the VF Corporation.

[4]Kentucky-Lajat was set up in 1995 as a joint venture between Kentucky Apparel, a U.S.-based jeans manufacturer, and the Lajat Group in Mexico, but Lajat bought out its U.S. partner in July 1999.

[5]Maquilas Pami is owned by Sun Apparel, which was purchased by Jones Apparel of New York in 1998.

[6]Red Kap is a division of VF Workwear, Inc.

[7]OMJC is a joint venture between Aalfs, a U.S.-based jeans manufacturer, and the Martín Group in Mexico.

Figure 1

U.S.-TORREON APPAREL COMMODITY CHAIN: ACTIVITIES AND LOCATION

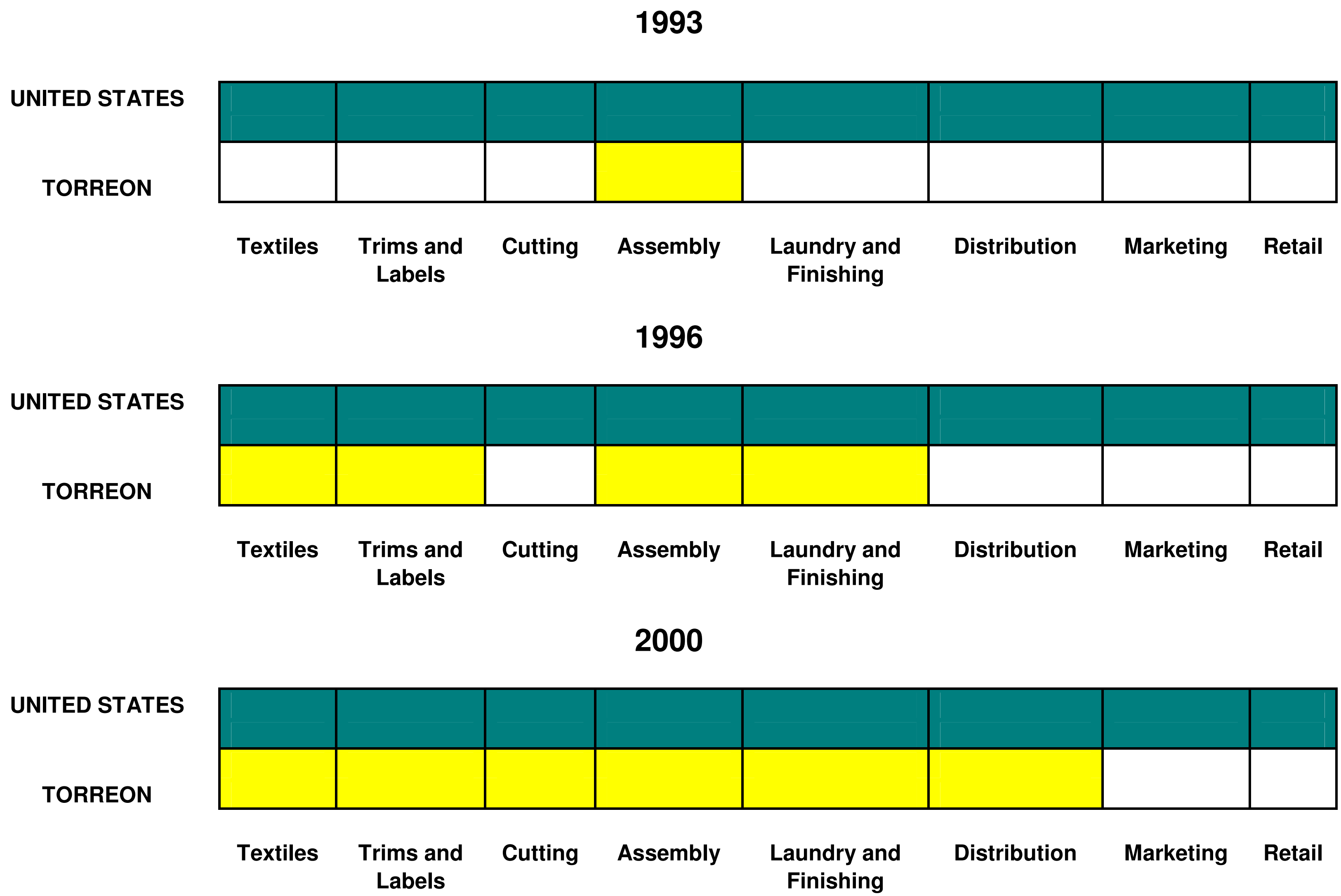

Figure 2

Pre-NAFTA Maquila Networks in Torreón

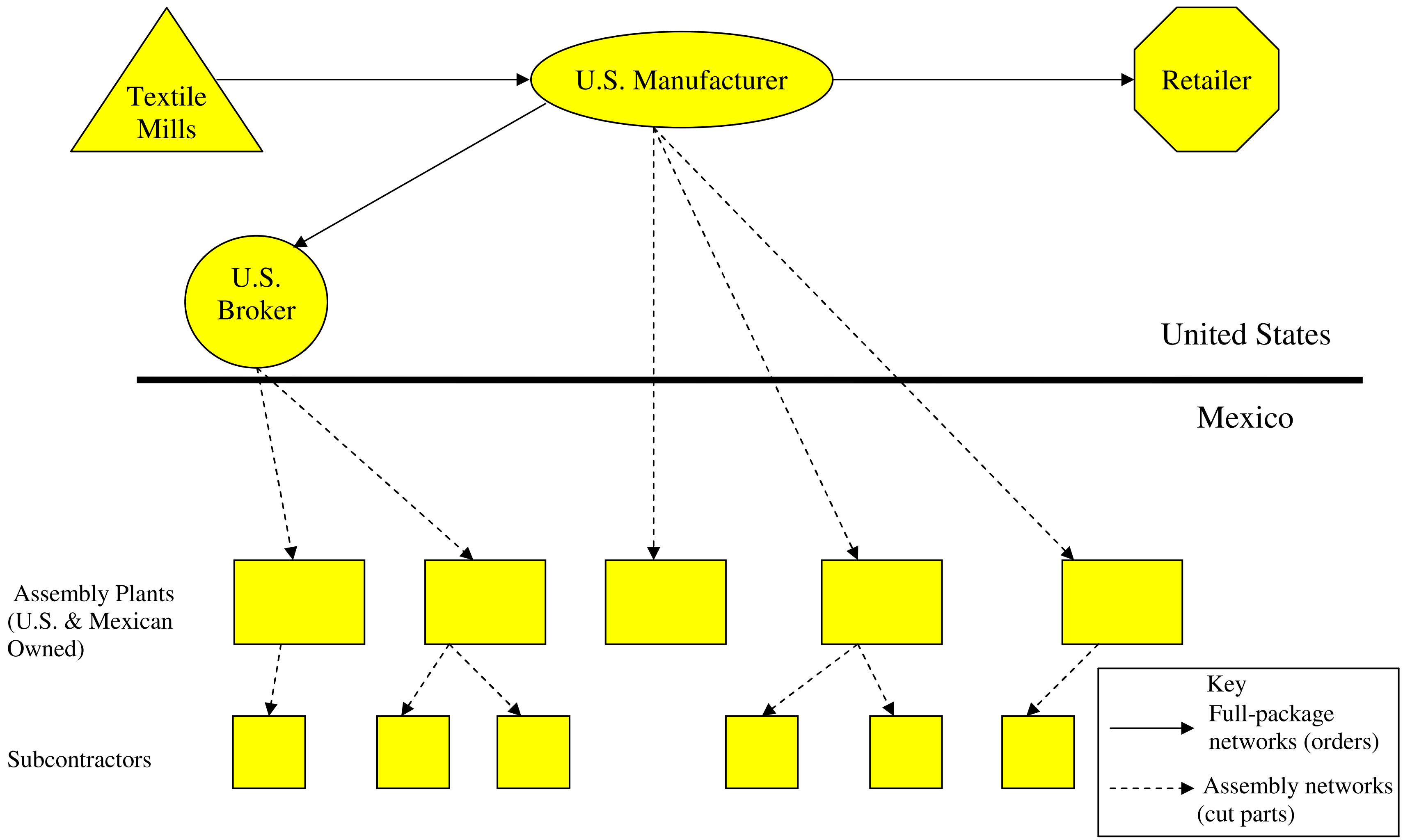

Figure 3

Post-NAFTA Full-Package Networks in Torreón