Upgrading, uneven development, and jobs in the North American apparel industry

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Abstract *In this article we examine the developmental consequences of globalization at multiple scales, using a commodity chains framework to investigate the case of the North American apparel industry. In the first section we outline the apparel commodity chain and offer a brief typology of its lead firms. In the second section we discuss the concept of industrial upgrading and describe several main export roles in the global apparel industry. In the third section we focus on the regional dynamics resulting from the North American Free Trade Agreement (NAFTA). We contrast the Mexican experience with that of countries in the Caribbean Basin to show the impact of distinct trade policies on export-oriented development. We argue that NAFTA is creating upgrading opportunities for some Mexican firms to move from the low value-added export-oriented assembly (or* maquila*) model to full-package production. In the fourth section we explore the unevenness of upgrading dynamics through a comparison of two blue jeans manufacturing clusters in the United States and Mexico: El Paso and Torreon. Our conclusions about upgrading and uneven development in the North American apparel industry emphasize the importance of local, national and regional institutional contexts in shaping inter-firm networks and their development impact.*

Globalization is changing the nature of work and business in the contemporary world economy. Debate today revolves around the implications of globalization's transformative influence for firms and workers, particularly in the developing world. While capital is increasingly mobile, workers remain relatively place bound, and this tension between the global and the local demands new tools for policymakers studying labour issues, as well as new strategies for labour activists. The International Labour Office has focused on the relationship between globalization and employment in numerous studies, which explore a range of issues from working conditions in *maquiladora*s to the impact of information and communication technologies on the quantity, quality, and location of jobs (see ILO 2001). Many of these studies have focused on the cross-border production and trade networks that are at the heart of economic globalization, asking about the impact of these networks in the communities where they touch down. The consensus that emerges from this literature is that cross-border networks can have positive as well as negative developmental consequences: 'Globalization in a regional framework can boost development opportunities, but it may also undermine established local networks of backward and forward linkages' (ILO 1996: 120).

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This article offers a theoretical and empirical assessment of the developmental consequences of globalization. We contend that the global commodity chains framework, which provides a network perspective on the production and distribution of goods and services in the global economy, is a useful tool for analysing globalization's implications at multiple levels of analysis, including for local communities and workers.

Our discussion focuses on the apparel industry, one of the oldest and most global export industries in the world (Dickerson 1999). Garment making is the typical 'starter' industry for countries engaged in export-oriented industrialization and, as has been amply documented, it played the leading role in East Asia's early export growth (Bonacich et al. 1994; Gereffi 1998, 1999). The East Asian experience is notable not only for the importance of clothes in the export profile of newly industrializing economies such as Hong Kong and Korea, but also because the region is home to countries that have managed to parlay their export activities into upgrading trajectories. This upgrading dynamic reflects a shift between two different production systems that characterize export-oriented production in the contemporary world economy: the assembly model of industrial subcontracting and the full-package model of commercial subcontracting. In this article, the recent emergence of full-package production in the Mexican apparel industry is seen as part of a wider transformation of the North American apparel commodity chain. This process produces winners as well as losers and it creates uneven upgrading opportunities benefiting some firms and workers more than others. Uneven outcomes reflect the ways in which particular communities become linked to international production networks, and the impact of the various institutional environments (supranational, national and local) in which they are embedded.

Section one introduces the concept of the apparel commodity chain and offers a brief typology of its lead firms or chain drivers. In the second section we discuss the concept of industrial upgrading and provide a description of the main export roles characterizing apparel-producing countries in the global apparel industry. Section three focuses on the regional dynamics resulting from the North American Free Trade Agreement (NAFTA). We contrast the Mexican experience with that of the region's other dynamic apparel exporters, the countries of the Caribbean Basin, to show the impact of trade regimes on export-oriented development trajectories. In the fourth section we explore the unevenness of the upgrading process within North America through a discussion of two blue jeans manufacturing clusters in the United States and Mexico: El Paso and Torreon. In the final section we summarize our findings regarding upgrading through networks in the North American apparel industry and we conclude by underscoring the importance of linking the commodity chains perspective with territorially based approaches that emphasize social and institutional contexts in order to advance the debate about globalization and its consequences.

The apparel commodity chain

The rise of globalization as a central concern of contemporary social science has generated a vast literature regarding its implications for development. Among the key issues that have been posed about the relationship between globalization and development is that of scale: At what level of analysis should we focus our efforts to

understand contemporary processes of development, and at what level should policy interventions be directed? While some scholars focus on the rise of supranational institutions and processes that challenge traditional constructions of sovereignty and transform the role of states (Sassen 1996), contributors to the so-called new regionalism underscore the renewed importance of the sub-national locality as a space of development (Amin 1999; Storper 1997). While disagreements in this literature abound, one can identify an emerging consensus that globalization has led to what Peter Dicken and his colleagues call a 'relativization of scale'. They argue that 'a distinctive feature of contemporary capitalism is the ability to operate on multiple scales, but none of these scales should, in themselves, be considered a privileged level of analysis' (Dicken et al. 2001: 95). These authors conclude that the study of globalization requires a grounded, network-based approach capable of ranging across multiple spatial scales while elucidating the dynamic relationships between them.

We believe that the global commodity chains (GCC) framework contributes to the development of such an approach. It emphasizes the organizational dynamics of contemporary capitalism – that is, the role of firms in constructing transnational networks for the production and distribution of goods and services. While commodity chains are often global in the sense that they traverse national borders and incorporate firms and workers in several different countries, they are also local because particular links of the chain are rooted in distinct communities. The chain approach illuminates the flows (of capital, goods, services, and labour) between and across space, the implications of these flows for the various places that are incorporated into global chains, and the ways in which local contexts shape and mediate these networks, even as they are, in turn, transformed by them.

Commodity chains have four characteristics: (1) an input–output structure, which describes the process of transforming raw materials into final products; (2) a territoriality or spatial dispersion of the activities involved in this transformation; (3) a governance structure, which describes the power relations that are exercised along and through the chain; and (4) an institutional context that shapes the inter-firm networks that connect the various links in the chain and mediate the outcomes associated with the operation of the chain in different environments (Gereffi 1995). The governance dimension is particularly critical for understanding the potential of the GCC approach to shed light on the distributional consequences of globalization by highlighting the ways in which firms and workers in developing economies become incorporated into the global economy. In his work, Gereffi (1994, 1999) identifies two ideal types of governance structures in global commodity chains, which correspond to different organizational forms of international economic coordination.

Producer-driven commodity chains are established by industrial capital in sectors such as automobiles, computers and heavy machinery, while buyer-driven commodity chains are controlled by commercial capital in industries such as apparel, footwear and toys. Producer-driven chains are typical of capital- and technology-intensive industries in which large, usually transnational, manufacturers play the central roles in coordinating production networks. Buyer-driven chains, in contrast, refer to those industries in which retailers, marketers and branded manufacturers play the pivotal roles in setting up decentralized production networks.[1]

The distinction between producer-driven and buyer-driven chains recognizes that there are various forms of coordination and control in global industries, depending on

the type of firm that is dominant. The task for commodity chain analysis lies in identifying the lead firms in a particular industry, whose strategic position in the chain allows them to create and appropriate higher returns relative to other chain participants (Gereffi 2001). The power of lead firms and their ability to control actors at other segments of the chain are derived from their ability to construct and reproduce various barriers to entry at the segments of the chain they occupy (Kaplinsky 1998). The forms of governance in particular chains affect the distribution of profits and costs among firms and workers that participate in these economic networks: 'What it [the concept of governance] does is throw light on those factors determining the nature of the insertion of different producers into the global division of labour. … [I]t is not just a matter of whether producers participate in the global economy which determines their returns to production, but how and on what terms they do so' (Kaplinsky 2000: 12). Through empirical analysis of global industries, the GCC framework makes possible an understanding of how local developmental outcomes are affected by the networks through which particular firms (and thus the workers they employ, and the communities in which they are located) become incorporated into cross-border chains.

The buyer-driven designation aptly captures the dynamics of the global apparel industry, which has been transformed in recent decades by the dramatic increase in offshore production by US and European firms, the emergence of regional production blocs, the phase-out of the Multi-Fiber Arrangement and its replacement with the Agreement on Textiles and Clothing, the prominence of branding as a key strategy, and a dramatic consolidation at the retail end of the chain (Jones 1998; Klein 1999, Taplin 1994). The last two trends capture the growing importance of the organizational buyers or lead firms in this industry. One of the main characteristics of many lead firms that fit the buyer-driven model, including retailers like Wal-Mart, Sears Roebuck, and JC Penney, athletic footwear companies like Nike and Reebok, and fashion-oriented apparel companies like Liz Claiborne, Gap and The Limited, is that these companies design and/or market – but do not make – the branded products they order. They are part of a new breed of 'manufacturers without factories' that separate the physical production of goods from the design and marketing stages of the production process. Profits in buyer-driven chains derive not from scale, volume and technological advances, as in producer-driven chains, but rather from unique combinations of high-value research, design, sales, marketing and financial services that allow the retailers, designers and marketers to act as strategic brokers in linking overseas factories and traders with evolving product niches in their main consumer markets (Gereffi 1994).

Diversity of lead firms

There are three types of lead firms in the apparel commodity chain: retailers, marketers and branded manufacturers (Gereffi 2001). As apparel production has become globally dispersed and the competition between these firms intensifies, each type has developed extensive global sourcing capabilities. While moving out of production, they are fortifying their activities in the high value-added design and marketing segments of the apparel chain, leading to a blurring of the boundaries between these firms and a realignment of interests within the chain.

Retailers

In the past, retailers generally purchased the merchandise produced and marketed by apparel manufacturers, but the relationship between retailers and apparel manufacturers has been transformed by the advent of 'lean retailing' and the rise of 'private label' or store brands, which are sold alongside competing national brands (Abernathy et al. 1999). For example, retailer JC Penney now offers its customers a choice between traditional brands of jeans, such as Levi's or Wrangler, and its own highly successful private label, called Arizona Jeans. Almost a third of the women's apparel sold in the United States today consists of private label products.

Marketers

A notable feature of buyer-driven chains has been the creation since the mid-1970s of prominent marketers with well-known brand names, but that carry out no production in their own factories. They include companies like Liz Claiborne, Nike and Reebok, which were 'born global' since their sourcing has always been overseas. As pioneers in global sourcing, branded marketers were instrumental in providing overseas suppliers with knowledge that subsequently allowed them to upgrade their position in the apparel chain.

Branded manufacturers

From a GCC perspective, the main significance of branded manufacturers is that they generally coordinate industrial subcontracting networks, while retailers and marketers coordinate commercial subcontracting networks. This set of firms includes companies such as Sara Lee (which owns the Hanes and L'Eggs brands), Levi Strauss and Company, and VF Corporation (which markets Wrangler and Lee jeans). Branded manufacturers have tended to rely heavily on offshore production, often in owned-and-operated plants. However, many branded manufacturers are abandoning production altogether, suggesting that their strategies will become more similar to those employed by marketers and retailers.

Identifying the various lead firms that drive the apparel commodity chain is important because of their role in establishing and coordinating the international production and sourcing networks that are the infrastructure of global apparel trade. The commodity chains perspective directs our attention to the relationship between the type of lead firm, the kind of networks the firm establishes with suppliers and contractors, and the prospects for upgrading associated with these networks. In the next section, we discuss these upgrading prospects in terms of the main export roles that characterize the global apparel industry.

Industrial upgrading as export role shifts

Industrial upgrading, as we define it here, entails moving to higher-value activities in global supply chains. For the apparel industry, industrial upgrading can be conceptualized as a series of role shifts involved in moving from export-oriented assembly to more integrated forms of manufacturing and marketing associated with the original equipment manufacturing (OEM) and original brand name manufacturing (OBM) export roles, respectively (Gereffi 1999). Assembly manufacturing teaches apparel

exporters about the price, quality and delivery standards used in global markets.[2] The most typical upgrading move following assembly is OEM, which involves the devolution of a greater range of activities from the lead firm to the contract manufacturer that receives the order. The OEM role has emerged across a variety of industries, including electronics, automobiles, pharmaceuticals and apparel. While the terminology may be slightly different across industries, in each case the contract manufacturers 'provide complete bundles of manufacturing-related services … including investment in production facilities (in both domestic and international settings), component and material sourcing, the manufacturing process itself, quality assurance, in-bound and out-bound logistics' (Sturgeon 2001: 15). In the apparel industry, OEM is referred to as the full-package model, and the upgrading consequences of the shift from the assembly to the full-package role can be noted at both the level of the individual firms and at the level of the exporting region.

At the level of the firm, full-package can be considered a form of upgrading because it expands a producer's customer base beyond the branded manufacturers that have traditionally favoured industrial subcontracting (or assembly) networks in order to include the retailers and marketers that prefer commercial subcontracting (or full-package) networks. Compared with the mere assembly of imported inputs, full-package production changes the relationship between buyer and supplier in a direction that, at least potentially, gives more autonomy and opportunities for learning to the supplier. Full-package production is needed because the retailers and marketers that order garments typically have little interest or experience in manufacturing apparel. Thus, the suppliers must learn how to do everything, and this process of learning often takes place in the context of a relatively long-term relationship with the buyers. The more stable and open the relationship between the client and the supplier, the more favourable is the environment for observing and learning from the buyer.[3]

At the level of the exporting region or cluster, full-package production can be considered a form of upgrading when it stimulates linkages between different segments of the apparel commodity chain. Unlike assembly networks, which usually require imported inputs, full-package networks provide opportunities for exporting firms to find local suppliers for materials such as fabric, buttons and thread. One of the main criticisms levelled at export-processing zones is that they are islands of assembly production that are essentially unconnected to the domestic economies of the countries that host them. While export-processing zones generate foreign exchange through exports and they also create jobs, the absence of linkages to local firms means that they generate minimal growth beyond the export enclave. Because full-package production is more likely to stimulate local linkages to component suppliers, it may be considered a form of intra-sectoral upgrading.

The term 'full-package production' refers to any production arrangement between a client (the buyer) and a contractor (the manufacturer), whereby the contractor receiving the order is responsible for purchasing the raw materials (for example thread or fabric) and coordinating all the different parts of the production process. The full-package manufacturer is usually a textile or apparel producer though, theoretically, a broker with no production capacity can also be considered a full-package 'manufacturer' if he buys the raw materials and coordinates the various production tasks that are outsourced to subcontractors. Full-package production therefore does not *necessarily* imply a more integrated form of manufacturing with backward

linkages to local suppliers (Schrank 2002), though we argue that full-package production is far more likely to generate such linkages than the export-oriented assembly model, which virtually always entails the importation of foreign-made components.

There are five defining elements in this historically and organizationally grounded GCC approach to industrial upgrading. First, *sequences of export roles are contingent, not invariant, features of industrial upgrading.* While the progression from assembly to OEM to OBM export roles is quite typical, success in one role does not guarantee success in subsequent ones. Backsliding is possible and the sequences may vary, especially for more advanced forms of upgrading. Nor are these export roles mutually exclusive. In fact, most nations and many firms are tied to the world economy in multiple ways.

Second, *industrial upgrading involves organizational learning in global supply chains to improve the position of firms or regions in international trade and production networks*. Participation in GCCs is important for industrial upgrading because it puts firms and economies on potentially dynamic learning curves. However, there are many obstacles to moving up these chains, and the barriers to entry for each export role typically are more demanding as one moves along the upgrading trajectory.

Third, *industrial upgrading requires not only physical and human capital, but also social capital – namely, relevant and effective networks*. Economic theories of upgrading indicate that as capital (both physical and human) becomes more abundant relative to labour and the endowments of other countries, nations develop comparative advantages in capital- and skill-intensive industries. Industrial upgrading within the apparel commodity chain involves building and coordinating networks with different kinds of lead firms that have access to distinct pools of design, production and marketing resources needed to create new forms of competitive advantage.

Fourth, *sustaining the upgrading process within a particular commodity chain involves both forward and backward linkages from production, and the kind of learning that occurs across these segments*. There are various ways that industrial upgrading can proceed once the capabilities for integrated manufacturing required by the OEM role have been mastered, whether by individual companies or by networks of firms. One upgrading option is to move forward along the supply chain from production to marketing. For example, Hong Kong apparel companies have gone from OEM to OBM by establishing new retail chains featuring their brands. US apparel giants like Levi Strauss and Company and Sara Lee have chosen to lessen their commitment to manufacturing in order to put more resources into building global brands, which are the most profitable part of the soft goods value chain, while some textile manufacturers have integrated into apparel supply precisely to enhance their manufacturing capabilities and enlarge their potential customer base.

Fifth, *the upgrading processes of firms in terms of shifts along or between commodity chains is an important, but not a sufficient, condition for ensuring positive development outcomes*. The upgrading process is often uneven across regions within one country and between firms within the same cluster. In order to highlight upgrading dynamics and their consequences, particularly for workers, one must move from a discussion of upgrading at the industry level to an examination of how particular places become incorporated into such chains, and how this process is mediated by the

institutional and politico-economic characteristics of the environments in which firms and workers are embedded. In the following section, we focus on the role of regional trade regimes in shaping the upgrading prospects of textile and apparel exporters in two different parts of North America: Mexico and the Caribbean Basin.

Upgrading in the North American apparel industry

No industry better captures the development dilemmas that shape North America's regional integration efforts in the past decade than apparel. Apparel shipments from Mexico and the Caribbean Basin countries to the United States are pacing the boom in manufactured exports from these economies, generating both jobs and foreign exchange. Yet complaints abound about the quality of these jobs, the stability of the export earnings, and the declining standard of living confronted by workers.

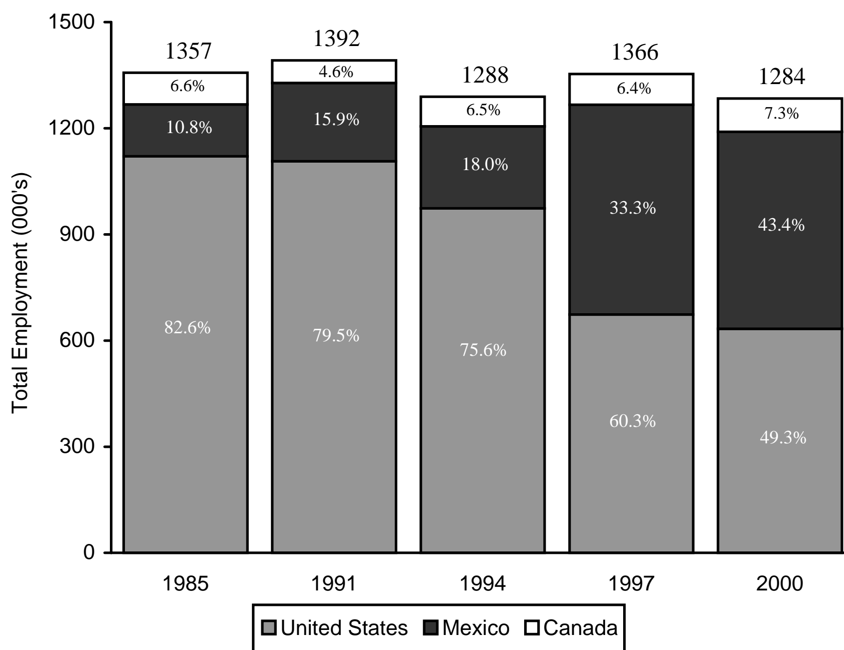
A central question in the North American integration debate is whether NAFTA should be considered a good deal or not, and for whom. Critics of NAFTA in the United States claim that it has escalated the destruction of the US manufacturing base, and they bolster this view with evidence from the apparel industry, which accounts for 30 per cent of all NAFTA-related job losses registered by the US Department of Labor between 1994 and 1999 (Spener and Capps 2001). Between 1985 and 2000, employment in the US apparel industry fell from 1.12 million to 633,000 workers. The number of US apparel jobs lost between NAFTA's implementation in 1994 and 2000 (340,800) was more than twice as great as the number lost between 1985 and 1994 (146,000). In fact, the decline in US apparel employment since NAFTA, is very close in magnitude to the number of apparel jobs created in Mexico (325,700) over the same period (see Figure 1). These aggregate statistics make it look as though NAFTA has created a zero-sum game between the United States and Mexico.[4]

Actually, the story of NAFTA's winners and losers in textiles and apparel is far more complex than these numbers reveal. A disproportionate share of job losses in the US apparel industry has been borne by southeastern states, such as North and South Carolina and Georgia – places that specialize in the mass production of the standardized garments like blue jeans and underwear that Mexico has been exporting in large volumes since NAFTA went into effect.[5] However, these same states have big textile industries, and textile firms supported NAFTA as a defensive manoeuvre to protect the North American market against a flood of cheap Asian imports. For example, Carlos Moore, president of the American Textile Manufacturers Institute, concludes that NAFTA has indeed benefited the US textile industry and its workers: 'Simply put, apparel imports from Mexico help our industry and our workers; apparel imports from the Far East hurt us. … [I]f we didn't have NAFTA, job losses in the textile industry would have been far more drastic because United States garment-making would have continued to move to the Far East and we would not have nearby markets for our textiles' (Moore 1999).

This account suggests that the winners from NAFTA are US textile companies and the Mexican apparel manufacturers that are sewing US fabrics into garments. Indeed, since NAFTA went into effect on 1 January 1994, Mexico has emerged to challenge China as the top US supplier of apparel.[6] However, free trade has proven a lot tougher for North Carolina textile companies than Moore anticipated. Strong supporters of NAFTA, such as Burlington Industries, Galey & Lord, Guilford Mills, and Malden

Mills, have all filed for Chapter 11 bankruptcy protection in 2001 and 2002, blaming their misfortunes on factors such as the Asian currency devaluations, the strong US dollar, a glut of textile products on the world market, and China's transhipments of textile goods through Mexico to evade US quotas[7] (ATMI 2001; Neff et al. 2002). Overwhelming debt has pushed several high profile apparel firms into Chapter 11 bankruptcy as well, including Warnaco Group, the manufacturer and distributor of Calvin Klein jeans and Speedo swimsuits, and Fruit of the Loom, the underwear giant.

Figure 1: North American apparel employment, 1985–2000



Source: Statistics Canada, Employment, Earnings and Hours; US Bureau of Labor Statistics; Censos Económicos.

In response to the textile crisis, a new lobbying organization spearheaded by Roger Millikin, head of one of the Carolinas' largest textile companies, Millikin & Co., and UNITE (Union of Needletrades, Industrial and Textile Employees) President Bruce Raynor, was launched in March 2002 to take a more aggressive protectionist stance on textile trade issues. The new group, known as the American Textile Trade Action Coalition (ATTAC), is protesting against the loss of about 180,000 textile jobs, nearly one-third of the industry's total workforce, and the shutting down of at least 220 textile plants in the past five years (Mecia 2002). The move is a throwback to the mid- and late 1980s, when a coalition of labour unions, textile mills, apparel firms, cotton growers and chemical companies pushed three bills through the US Congress that would have capped the growth of textile imports to 1 per cent per year.

These efforts by the textile lobby fell short, with Presidents Ronald Reagan and George Bush vetoing the protectionist trade bills in 1985, 1988 and 1990.

Of course, NAFTA and subsequent trade deals alone cannot be blamed for US job losses in labour-intensive industries such as apparel. Companies in the United States have been investing overseas for decades in order to cut costs. But free-trade agreements do accelerate the trend toward global sourcing, and the pain is distributed unevenly. Only one-fifth of the 50,000 North Carolinians displaced by trade-related layoffs since 1998, when the state began keeping count, enrolled in worker-retraining programmes that they are entitled to through NAFTA. Less than one quarter of the 10,000-plus workers in North Carolina who completed retaining programmes landed the kind of jobs they trained for, and those experiencing trade-related layoffs who did find a job earned 12 per cent less than before the layoff (Rives and Neff 2002).

Mexico and the Caribbean Basin: the maquila *model*

Within Latin America, the labour-intensive assembly of manufactured goods from imported components is disproportionately concentrated in Mexico (whose in-bond factories are called *maquiladoras*) and the Caribbean Basin (where assembly production is usually carried out in Free Trade Zones) because of these countries' low wages and proximity to the US market. The US market dominates Mexico and the Caribbean Basin's export profile and is the destination for over 90 per cent of their apparel exports.

Mexico's *maquiladora* industry, which was established in 1965 by the Border Industrialization Program, is made up of assembly plants that use imported components to make goods for export to the US market. Historically, Mexico's *maquiladora* plants typified low value-added assembly, with virtually no backward linkages. In the 1980s, a second generation of *maquiladora* plants began to push beyond this enclave model to a more advanced type of production, making components for complex products like automobiles and computers. By the mid-1990s, a third generation of *maquilas* was said to be emerging (although this claim was based largely on a case study of Delphi, a General Motors plant), signalling a move beyond manufacturing to involve activities such as research and development and product design (Carrillo 1998).

The *maquila* sector in Mexico has expanded dramatically since NAFTA. *Maquiladora* employment more than doubled between 1990 and 2000 from 439,000 to 1.3 million workers. In 1993, the year prior to NAFTA, there were 400 apparel *maquiladoras* employing 66,000 workers; by 2000, 1120 apparel *maquiladoras* provided jobs to nearly 290,000 Mexicans (Bair and Gereffi 2002: 33). This expansion mirrors the extraordinary export dynamism of Mexico's apparel industry in the post-NAFTA period, which is shown in Table 1. Mexico's total apparel exports increased from $1.9 billion in 1994 to $8.1 billion in 2001 and the vast majority of this growth occurred after NAFTA's implementation in 1994. As the last column of Table 1 reveals, 807/9802 trade (linked to the US production-sharing programme) has historically dominated the US import profile in garments, accounting in 1994 for 78 per cent of imports from Mexico and 80 per cent of those from Central America and the Caribbean. Because NAFTA has reduced the incentive of Mexican companies to register their exports under the *maquiladora* programme, we estimate that the

percentage of Mexico's exports that were full-package (namely, *non*-807/9802 goods) in 2001 to be about one-third, instead of the one-half indicated in Table 1.[8]

Table 1: US apparel imports: total and 807 Trade (9802), by Mexico and Caribbean Basin Initiative (CBI) countries, 1994–2000

Year	*Total apparel imports (US$ millions)*	*807/9802 trade (US$ millions)*	*807/9802 trade as a share of total imports (%)*
World			
1994	36,878	5707	15
1995	39,438	7631	19
1996	41,679	8719	21
1997	48,287	11,322	23
1998	53,874	12,791	24
1999	56,376	13,474	24
2000	64,181	12,953	20
2001	63,789	12,273	19
Mexico			
1994	1889	1470	78
1995	2876	2282	79
1996	3850	2967	77
1997	5349	4096	77
1998	6812	5102	75
1999	7845	5417	69
2000	8730	5071	58
2001	8128	4030	50
CBI Countries			
1994	4538	3617	80
1995	5487	4497	82
1996	6076	4999	82
1997	7664	6411	84
1998	8349	6929	83
1999	8889	7301	82
2000	9702	7181	74
2001[a]	9602	7602	79

[a] 2001 807/9802 imports from the CBI include apparel imported under the Caribbean Trade and Development Act (CBTDA). CBTDA import data are compiled from statistics of the Office of Textiles and Apparel (available at http://www.otexa.ita.doc.gov).

Source: Compiled from official statistics of the US Department of Commerce, International Trade Administration, Office of Textiles and Apparel; US imports for consumption, customs value.

The development of full-package capabilities among Mexican firms has been driven by NAFTA, and specifically the Agreement's rules of origin that govern trade in textile products. The 807/9802 regime in the United States restricts preferential trade access to the US market to goods assembled abroad from US components. NAFTA has changed the rules of the game by extending preferential access to the US (and Canadian) market to all Mexican goods that meet the rules of origin established in the Agreement. Goods are considered as complying with NAFTA rules of origin if they contain a minimum percentage of 'North American' (Canadian, US or Mexican) content. For textile and apparel products, NAFTA enshrines a triple transformation rule (also known as 'yarn forward'), which means that apparel and textile products qualify as North American as long as the yarns they contain were made in one of the three NAFTA countries.

Following NAFTA's passage, countries in the Caribbean Basin voiced concern that their apparel exports, which were still subject to the value-added tariff, would no longer be competitive with Mexico's.[9] When NAFTA took effect, 'Mexico enjoyed the equivalent of a six-point tariff-rate advantage in the US market, was no longer subject to import quotas on many apparel items, and, most notably, could count Mexican inputs as part of the requisite NAFTA content. That gave Mexico a huge advantage compared to the Caribbean Basin countries' (Mortimore 2002: 300). Eventually, political pressure led the US Congress to grant assemblers in the Caribbean Basin a version of 'NAFTA parity' in the form of the United States–Caribbean Trade Partnership Act, which was approved in May 2000, and enacted as Title II of the Trade and Development Act of 2000 (Rodriguez-Archila 2000). This act provides both duty- and quota-free treatment for garments exported by certain countries of Central America and the Caribbean that use fabric made in the United States.

In reality, the Caribbean Basin countries have not received NAFTA parity. Although the Trade and Development Act levels the playing field between the Caribbean Basin countries and Mexico, it does not replace the old 807 rules of origin with new North American ones, and therefore, unlike NAFTA, it does not encourage the development of a local supply base for textiles and other inputs in the region. One scholar, who asked 'if the Dominican Republic's export processing zones can survive NAFTA', concludes that the Caribbean Trade and Partnership Act's restrictions on local value-added limit the possibilities for vertical integration of the garment industry beyond the stage of export-oriented assembly (Mathews 2002: 316).

Mexico's ability to export clothing that is assembled from fabrics manufactured in Mexico gives it an edge over other apparel exporters, and Mexico thus figures prominently in the strategies of the lead firms that drive the North American apparel commodity chain. While the institutional context created by NAFTA sets the stage for the development of full-package production in Mexico, inter-firm networks linking the apparel industry's lead firms to local manufacturers are the mechanism enabling the shift from the assembly to the export role.

Reconfiguring the apparel supply chain and Mexico's transition to full-package production

The key to Mexico's transition from assembly to more integrated export production are networks organized by US firms that want to increase their security and enhance

profits by coordinating the activities associated with full-package supply in North America. Large firms in different segments of the apparel chain, mainly from the United States, are vying to become coordinating agents in new North American networks that could strengthen Mexico's capabilities to carry out full-package supply (Bair and Gereffi 2002):

- *Synthetic fibre companies* in the United States and Mexico have been lobbying downmarket with US apparel manufacturers and retailers, trying to get the apparel firms to develop products using their fibres and trying to get retailers to bring these orders to Mexico.
- *Textile mills* have been forging alliances with apparel suppliers that could allow for more integrated textile and apparel production in different regions of Mexico; in addition, textile firms are exploring the possibility of creating their own product development teams for select apparel categories.
- *US branded apparel manufacturers* are rationalizing their supply chains in Mexico, looking for smaller numbers of more capable suppliers, or 'de-verticalizing' their domestic and offshore production operations by divesting themselves of manufacturing assets in favour of building up the marketing side of their business, with an emphasis on global brands.
- A handful of *Mexican integrated apparel manufacturers*, who own modern plants that go from spinning and weaving through apparel production and finishing, have developed strong reputations with US retailers and marketers that are looking to place full-package orders in Mexico.
- *US and Latin American retailers* are beginning to set up sourcing networks in Mexico, aided by government-supported vendor certification programmes.

Among the most prominent players in the post-NAFTA restructuring of the North American apparel industry are US textile companies. A prime example of this trend is North Carolina-based Burlington Industries, which grew through acquisitions to become the world's largest textile maker by 1980. Burlington had only three plants in Mexico in 1994, two of which were for the production of cotton and synthetic fabrics. In 1998 Burlington announced that it would invest $80 million over the next three years in five apparel plants as part of its effort to develop garment services. The Casual Wear Division of Burlington launched a strategy of integrated denim apparel production in Mexico, which included an owned-and-operated sewing factory and an industrial laundry for pre-washing the jeans it produced in Mexico. One Burlington executive described this move as 'one-stop shopping' for the company's clients: 'The strategy is to offer fabric in garment form as a service to branded customers, many of whom have to outsource production anyway' (Hill 2000: 29). Burlington Industries filed for Chapter 11 bankruptcy protection in November 2001, and both the apparel plant and Burlington's share of the laundry joint venture in the Casual Wear Division were sold as part of the company's restructuring effort. However, the company continues to produce fabric in Mexico and uses a number of Mexican contractors to fill its full-package apparel orders for brand-name clients (Bair 2001).

Guilford Mills, under the leadership of its late CEO Chuck Hayes, has also been active in Mexico. Unlike some of his counterparts in the US textile industry, Hayes believed that NAFTA provides an opportunity to strengthen the fibre–textile–apparel

chain in North America, thereby repatriating textile and apparel production that had gone to Asia. Hayes was the driving force behind the creation of 'NuStart', an industrial park dedicated to garment production located outside Cuernavaca in central Mexico. In addition to Guilford, Alpek (the petrochemical division of the Mexican conglomerate, Grupo Alfa) provided financial support for the project, and eventually DuPont and Burlington Industries also signed on. NuStart was inaugurated in July 1997 and, in June 2000, seven companies from Canada, the United States and Mexico were operating in the park. Despite a host of problems that have plagued NuStart, Guilford Mills is heading an initiative to create a second industrial park in Tamaulipas.

A Mexican textile company called Kaltex is also attempting to secure its position in the post-NAFTA apparel commodity chain. Founded in 1925, Kaltex is one of the largest companies in the Mexican textile industry. Kaltex expanded beyond its textile roots in yarn and fabric production to include garment making, including full-package apparel programmes in 1994. Kaltex inaugurated its first denim mill in 1996, and it is considered one of the largest denim manufacturers in Mexico, as well as a major player in the full-package jeans market. Kaltex's denim branch, Denimex, exports virtually all its denim to the United States in the form of fabric or apparel. Denimex has a close relationship with the Lee jeans company, and much of its apparel production is sold to Lee's parent company, VF Corporation.

US retailers are a growing presence in Mexico. JC Penney established a buying office in Mexico City in 1994 with the goal of sourcing apparel from Mexican manufacturers for its private label lines. In 1994, it procured $7 million of apparel in Mexico, an amount that increased to about $100 million in 1999. JC Penney sources from 22 Mexican companies, and tee-shirts, underwear, and jeans are the principal products. Some of the apparel for JC Penney's most successful private label line, Arizona Jeans Wear, is manufactured in the northern Mexican town of Gómez Palacio by the Original Mexican Jean Company (OMJC), which is a joint venture between a US manufacturer, Aalfs, and a Mexican partner. The networks linking JC Penneys, Aalfs, OMJC, and local subcontractors in Torreon exemplify the role of inter-firm networks in restructuring the North American apparel commodity chain in the context of the institutional environment created by NAFTA (Bair and Gereffi 2001). In the next section we underscore the impact of this restructuring in particular communities, returning to the debate about who benefits and who loses as a result of NAFTA.

NAFTA and uneven development: the rise and fall of the blue jeans industry in El Paso and Torreon

One of the most intriguing chapters in the North American apparel story is the comparison of Torreon, a city located in the cotton-growing region of La Laguna in northern Mexico, with El Paso, Texas, whose former title of the 'Blue Jeans Capital of the World' has been claimed in recent years by Torreon.[10] In 2000, there were about 350 apparel factories operating in Torreon, virtually all oriented to the export market. According to industry estimates, these factories made about six million pairs of jeans a week. The year before NAFTA's implementation, the cluster's total production volume was only 500,000 garments a week – a volume that is only slightly

greater than the production capacity of the single largest apparel manufacturer in Torreon in 2000. Approximately 75,000 of Torreon's population of a half million people were employed in the apparel and textile industries in 2000, up from just 12,000 workers in 1993 (Bair and Gereffi 2001: Table 1, p. 1889).

El Paso

Dramatic growth in garment employment in Torreon can be contrasted with a striking decline in apparel employment in El Paso, Texas,[11] where the number of apparel jobs fell by half between 1993 and 2001 (from 23,581 to 11,851). Of course, one cannot conclude that El Paso's losses have translated directly into Torreon's gains. In the post-NAFTA period, garment manufacturing has migrated to many low-cost locales, not just Torreon, and this process has meant a decline in apparel employment in cities across the United States, not just El Paso. However, no place has been as hard hit as El Paso, which has suffered more job losses attributable to NAFTA (as certified by the US Department of Labor under the Transitional Adjustment Assistance programme) than any other American city. Though El Paso's experience of deindustrialization is typical among America's urban manufacturing centres, aspects of the city's profile make it a particularly compelling illustration of the dynamics of NAFTA's uneven development. While Mexican-Americans and Mexican immigrants comprise the majority of El Paso's overall labour force (65 per cent in 1990), their dominance in the apparel industry is nearly total. Virtually all El Paso's garment workers are of Mexican origin, with a full two-thirds of these workers having been born in Mexico. Thus, as El Paso's apparel factories close and a portion of these jobs are relocated to Mexico, large numbers of Mexican-born workers who migrated north in search of better employment opportunities find themselves losing jobs to compatriots south of the border.

Despite the recent attention NAFTA has received as the widely perceived and most proximate reason for local job losses (Medaille and Wheat 1997; Moreno 1997), the fate of El Paso's apparel industry has been linked to developments on the southern side of the US–Mexico border for more than a decade prior to NAFTA. Its trajectory underscores the importance of trade regimes in shaping commodity chains, as well as the precariousness of the industrialization and employment patterns that result and the vulnerability of local communities to a change in the regulatory environment.

El Paso's apparel industry peaked in the early 1970s when it employed 60 per cent of all manufacturing workers and 20 per cent of all private-sector workers. By 1990 these percentages had declined to 33 and 8 per cent respectively (Spener 2002: 142). Among other factors, including labour strife following the historic strike at local manufacturer Farah in the mid-1970s, pre-NAFTA job losses were attributable to the rise of *maquila* production in Mexico. Several companies were drawn to Mexico following the sharp devaluations of the Mexican peso in the early 1980s, which made Mexican labour only one-tenth to one-eighth as expensive as minimum-wage labour in El Paso.

However, while the expansion of *maquiladora* exports from Mexico contributed to the loss of local sewing jobs, the regulations governing this cross-border production sharing actually helped to stabilize El Paso's overall apparel industry employment, which *increased* between 1990 and 1993. The *maquiladora* trade regime extended

preferential access to the US market to apparel assembled in Mexico from fabrics cut and formed in the United States. In addition to cutting, post-assembly processes such as laundering had to be done in the United States. The result of this trade regime was the consolidation of El Paso as a cut-and-finish centre, whose firms complemented the sewing activities carried out in Mexican *maquiladora*s. In addition to this 807-related employment, the early 1990s witnessed an expansion in the production operations of several large local employers. In the immediate pre-NAFTA period, 'El Paso was in the midst of a boom in garment employment, with the local industry dominated by three large employers. Levi Strauss and Company, Lee, and Wrangler had, respectively, 4600, 2000, and 2600 El Paso employees' (Spener 2002: 146).

When NAFTA was implemented in 1994, the complementarity between El Paso's cutting rooms and laundries and Mexican *maquiladora*s that had helped sustain the local industry was destroyed. The result was a relocation of cutting and laundering operations from the southern United States to export-oriented apparel clusters in Mexico, such as Aguascalientes, Puebla, and especially Torreon. In the remainder of this section, we discuss the results of research we conducted in Torreon in the summers of 1998 and 2000. Our study of the region's post-NAFTA export boom reveals the role of inter-firm networks in the restructuring of the North American apparel commodity chain and the uneven developmental consequences that this process entails for communities on both sides of the US–Mexico border.[12]

Torreon

Interviews with firms and industry associations in both the United States and Mexico revealed that the networks between retail, textile and apparel companies in Torreon and the United States are creating a dynamic apparel cluster in the area and creating upgrading opportunities for local firms. In particular, Torreon has emerged as Mexico's leading centre for export-oriented blue jeans production. Its development as the world's new blue jeans capital has been driven, in part, by the same firms that were once major employers in El Paso, such as Levi Strauss and Company, VF Corporation (which makes both Lee and Wrangler jeans), and Sun Apparel.

Levi Strauss and Company's presence in the region has been indirect, as a major client for a number of Torreon's export-oriented manufacturers. Several of the 39 contractors that Levi Strauss trained and certified in Latin America between 1994 and 1998 are located in Torreon (Spener 2002). Outsourcing to garment manufacturers (many of whom are located in Mexico, as well as the Caribbean Basin and China) has allowed Levi's to reduce its US employment by more than one-half since NAFTA – from 36,500 in 1994 to 16,700 in 2001. The El Paso region has been reeling from Levi's plant closings since 1997, at which point the company still employed over 17,000 workers in 31 factories in the United States. When Levi Strauss and Company announced in February 1999 that it would be closing 11 US plants and laying off 5900 workers, the move was thought to be the culmination of a series of layoffs that had left the company with only 11 plants in the United States (Emert 1999). However, by 2002 Levi's was operating only eight factories in the United States, and in April of that year it announced that it would close six of them as part of its effort to cut worldwide staff by an additional 20 per cent. When completed, this round of layoffs will leave Levi's with fewer than 1000 US employees (Bloomberg News 2002).

VF Corporation and Sun Apparel are major employers in the Torreon cluster. VF Corporation has built a factory for its Wrangler line of denim wear in a new industrial park in Torreon, where fabrics are cut and finished jeans are laundered. This facility is the hub in a 'hub and spoke' system that includes sewing facilities in three nearby towns. Sun Apparel was one of the first US apparel manufacturers to develop a presence in the region, arriving in Torreon in 1988. The company owns a local *maquiladora* called Maquilas Pami. Since NAFTA, Sun Apparel has expanded its enormous base of subcontractors in the Torreon region and throughout Mexico. In addition, Sun Apparel, which was purchased by Jones of New York in 1998, has added cutting and laundering capabilities in Torreon.

Investments like the ones made by VF Corporation and Sun Apparel in cutting and laundering facilities are upgrading Torreon's apparel manufacturing base. In anticipation of the elimination of tariffs on the cutting of denim cloth in Mexico on 1 January 1999, many jeans manufacturers moved their cutting operations to Mexico in 1997 and 1998. Post-production links of the chain have also emerged in Torreon, most notably the laundering of jeans and other pants. Companies could begin to wash their production in local laundries in 1994, as this was one of the production processes liberalized immediately under NAFTA's phase-in schedule. NAFTA reduced the duty on stone washing (a common laundering process for blue jeans) from 17 per cent to 0 per cent, encouraging several manufacturers to establish industrial laundries in the region.

The expansion of the apparel commodity chain beyond the garment assembly link, which is the *raison d'être* of the *maquiladora* industry, is demonstrated by the fact that four of Torreon's ten largest firms are full-package manufacturers. In other words, all these companies receive orders from their clients, finance the purchase of the fabrics and other materials needed, and deliver the finished product (Bair and Gereffi 2001: Table 3, p. 1895). Aside from the small number of the cluster's largest companies that are able to finance full-package production, there is a second tier of firms in Torreon that are known as 'half-package' manufacturers – namely, they carry out all the production activities (cut, sew, launder and finish), but do not buy the fabric, usually because they have limited amounts of working capital.

This process of 'lengthening' the commodity chain to include segments of the apparel chain beyond assembly constitutes upgrading at the level of the local cluster. In addition, the particular firms that are making the full-package and half-package transitions are upgrading via the acquisition of new capabilities, which increases their competitiveness by adding greater value to the manufacturing process and providing more services to the client.

There has also been growth in Torreon's textile industry, spurred by US companies that have established manufacturing operations in the area. Among the firms making new textile investments in the Torreon region is Cone Mills, a denim manufacturer that has established a joint venture with the Mexican textile firm, Compañía Industrial de Parras. Together these two companies built Parras-Cone, a denim mill located in the town of Parras, about two hours from Torreon. Grupo Lajat, a large Mexican corporation with interests in agriculture and oil, also helped expand Torreon's textile base. Although the company had no previous experience in making textiles, its owners believed that NAFTA would stimulate increased demand for Mexican-made fabrics. The textile mill that they built, Textiles Lajat, began manufacturing denim in 1995. By 1998, it was producing around three million yards

of denim a month, most of which was used in garments destined for the United States. Although Textiles Lajat was sold to Parras in December 1998, Grupo Lajat stays involved in the apparel business through another of its subsidiaries, Kentucky Lajat. This company began in 1995 as a joint venture with the US-based apparel firm, Kentucky Apparel. Together the two companies built a cutting room, two industrial laundries, and two finishing plants (where jeans are pressed, inspected and packed) in the Torreon cluster, as well as six sewing factories located in small towns around Torreon. In a decided reversal of most joint ventures between US and Mexican companies, Grupo Lajat bought out its smaller US partner in July 1999.

Like several of Torreon's larger full-package manufacturers, Kentucky-Lajat counts among its present or former clients a number of the US apparel industry's most prestigious firms, such as Gap and Tommy Hilfiger. The client profiles of local exporters such as Kentucky-Lajat indicate a shift in the customer base of Torreon's apparel manufacturers, which is a critical feature of the post-NAFTA upgrading process in the cluster. Prior to 1994, most of the region's export-oriented apparel production was organized and managed by a few large US apparel companies, such as Farah and Sun Apparel, which owned and operated local *maquiladora*s. The two branded manufacturers that were once the largest employers in El Paso's apparel industry – VF Corporation (which owns the Lee and Wrangler labels) and Levi Strauss and Company – have also played an important role in Torreon's recent rise as North America's leading blue jeans production centre. Although brand-name marketers and retailers have been the driving force behind the development of international production and sourcing networks in the global apparel industry, prior to NAFTA these types of lead firms placed no orders directly in Torreon. By 2000, there were about twenty brand-name clients sourcing jeans from Torreon. These included retailers, such as K-Mart, Gap, and JC Penney, as well as marketers, such as Tommy Hilfiger and Calvin Klein (Bair and Gereffi 2001: Table 2, p. 1892).

This diversification of the customer base reflects Torreon's shift from the *maquila* to the full-package export role. The *maquila* model of export production was linked to the large US apparel manufacturers that coordinated the region's pre-NAFTA garment production and provided the inputs for assembly. After NAFTA, retailers and marketers also arrived in the region. These new organizational buyers were looking for full-package manufacturers because they dedicate themselves to design, distribution and marketing as opposed to production. The networks between brand-name foreign buyers and the local manufacturers that shifted from *maquila* to full-package production to service them are the organizational infrastructure of Torreon's transformation from a *maquila* outpost to the blue jeans capital of the world.

Four of Torreon's major full-package manufacturers are Mexican-owned firms (Bair and Gereffi 2001: 1895–6). One such company is Pafer-Huichita. This full-package manufacturer used to work as a *maquiladora* for foreign firms, at which time it sent its fabrics to be cut in El Paso so that the apparel it assembled in Mexico could be imported under the 807 regime. Since NAFTA's implementation, Pafer-Huichita has opened its own cutting room in Torreon. The emergence of domestic full-package companies like Pafer-Huichita competing alongside US-owned contractors shows that post-NAFTA, export-oriented production has produced significant opportunities for the cluster's largest and most capable local firms. Having gained experience through *maquila* production for US clients and earned the trust of foreign buyers, Mexican

firms are now developing direct links to export markets. These full-package firms upgrade by eliminating middlemen like a broker or trading company, which allows them to enjoy the often-higher profits and relatively greater security full-package production offers compared with *maquila* orders.

In addition to the upgrading dynamics we were able to identify at the cluster and firm levels, the post-NAFTA arrival of new organizational buyers may also be having an upgrading effect at the plant level. Most of the brand-name buyers placing orders in Torreon inspect the local factories producing their apparel to ensure that they are meeting a host of standards that apply not only to the quality of their products but also to the quality of their workplaces. The standards range from environmental regulations to safety measures designed to reduce the risk of workplace injury. This trend reflects the anxiety generated by recent publicity surrounding several cases of labour abuses in sweatshops ranging from Los Angeles to Guatemala to Southeast Asia, which has made many United States companies more cautious about producing and sourcing apparel offshore. This is particularly true of branded manufacturers such as Levi Strauss and Company, marketers like Tommy Hilfiger and retailers like JC Penney. Because the consumer associates these companies' products so closely with their brand names, negative publicity surrounding labour abuses in their production networks can seriously tarnish the enormous investment that carefully cultivated brand names represent. The importance branded firms attach to the preservation of their public image has become an Achilles heel of major US apparel companies, which make ideal targets for anti-sweatshop campaigns sponsored by human rights groups, student activists and labour organizations (Gereffi et al. 2001). As a result of their heightened sensitivity to negative publicity, companies producing or sourcing apparel in places like Torreon appear to be raising the standards of sewing factories in terms of maintaining clean, well-ventilated and well-lit facilities. Equipment in the cluster's larger, full-package factories is similar to or better than what is typically found in US plants producing for the same buyers.

While this is not to suggest that labour abuses do not occur in Torreon, or that all the companies producing in the area have facilities identical to the largest firms, we believe that Torreon's transition from an assembly site to a dynamic manufacturing cluster is having two positive impacts on employment in the region. First, the development of new segments of the chain, such as textiles, laundering and cutting, is bringing new types of jobs to the region that complement the growing number of sewing jobs. These new jobs include not only basic production activities such as those involved in cutting fabric, but also the supervisory and technical positions needed to maintain highly automated, capital-intensive operations like Parras-Cone. Second, there is a process of upgrading at the plant level in terms of working conditions in the cluster's large and medium-sized factories, which can be traced to the arrival of prominent marketers and retailers with corporate codes of conduct that make their business with local firms at least nominally contingent on the manufacturer's ability to meet the standards and requirements enumerated in these codes.

The limitations of upgrading at the local level

We have presented evidence suggesting that the emergence of full-package apparel production in Torreon is facilitating upgrading at the level of the cluster by extending

the region's apparel commodity chain beyond apparel assembly and encouraging the development of related activities such as textile manufacturing. At the firm level, some of the cluster's largest companies are also able to upgrade via networks connecting them to powerful foreign clients placing full-package orders. However, there are also a number of pitfalls created by the type of export-led industrialization that the Mexican apparel industry exemplifies.

First, Mexico's adoption of an export-oriented growth strategy entails a significantly heightened degree of dependence on the US market. The decline that Mexico's export sector has experienced as a result of the economic downturn in the United States is a case in point. During the peak of the post-NAFTA boom in the late 1990s, export dynamism and employment creation in Mexico were attributed to tighter integration of the Mexican and US economies. However, the recent crisis in the country's *maquiladora* industry is the opposite side of this NAFTA coin. Between October 2000 and March 2002, over 280,000 *maquila* jobs were lost (INEGI 2002). Many of these jobs were in *maquiladora*s making garments for the US market, as suggested by the fact that Mexico's apparel exports to the United States, which had grown by over 10 per cent per annum since NAFTA, fell almost 7 per cent between 2000 and 2001. The hardship caused by the decline in US demand has occasioned some Mexican apparel manufacturers to consider the possibility of exporting to Europe and South America in order to reduce their dependence on the American market (Romney 2001).

Second, even in the midst of the post-NAFTA boom, a relatively small number of firms were reaping most of the benefits generated by Torreon's export dynamism. While the presence of both domestic and foreign manufacturers in the Torreon cluster might be interpreted as a positive development outcome, the emergence of full-package networks in Torreon is primarily benefiting a wealthy local elite whose control over the industry is strengthened by its access to the US companies placing orders in the region. Torreon's full-package club is an exclusive group, and its membership roster to date is limited to a small set of very large and well-connected companies. The Torreon apparel cluster is criss-crossed not only by production networks and subcontracting relationships, but also by kinship networks and social relationships. The extent to which the leading firms in the local industry are related by blood or marriage is one of the most intriguing findings to emerge from our research. Of the cluster's ten largest firms, six are owned by members of two families. Thus, Torreon's recent export dynamism is serving not only to promote economic upgrading, but also to reinforce the stratified nature of the local industry structure. When viewed in this light, the consequences of the cluster's export boom are not unambiguously positive.

Third, the vertical structure of the cluster's export-oriented production networks has negative consequences for the region's smaller firms and their workers. While a few large manufacturers in Torreon are receiving full-package orders (either directly or indirectly) from big US buyers, these orders are actually being filled by several tiers of contractors and subcontractors organized into hierarchical networks that are controlled by the cluster's dominant firms. Because the buyers in the United States are benchmarking Mexican full-package manufacturers against other exporters, firms in Torreon are under pressure to reduce their production costs to a minimum so that they can offer a competitive price. They, in turn, exert pressure on their sub-

contractors by trying to procure assembly services for the lowest possible price per piece, and this search for ever lower costs has negative implications that cascade down the network pyramid, from manufacturer to contractor to subcontractor. The end result of this competitive dynamic is significant downward pressure on the manufacturers' profit margins, and consequently on workers' wages. Small firms that are incorporated at the bottom rungs of these export networks experience the highest risks, the lowest wages and the poorest working conditions.

Fourth, because Mexico is characterized by substantial inter-regional variations in terms of labour costs, rising wage rates in Torreon may well result in the relocation of apparel assembly to less expensive areas of the country. However, while the 'footloose' nature of the apparel industry means production is unlikely to be permanently rooted in Torreon or any other area, the nature of the full-package production networks in Torreon makes the area less vulnerable to a total collapse if apparel assembly moves elsewhere. Unlike the basic sewing factory needed for apparel assembly, the other segments of the commodity chain that are moving to Torreon – textile mills, modern laundries and computerized cutting rooms – represent investments that companies are less likely to walk away from when wages rise, largely because the more capital-intensive nature of these operations make labour costs less critical than other factors, such as the availability of water and the cost of electricity.

Apparel is, however, unlikely to remain a top industry in Torreon over the long-term. All countries or sub-national regions that have been successful apparel exporters have experienced a similar trajectory of growth and eventual decline when the relatively narrow window of opportunity in the industry is fully exploited. Torreon already hosts other manufacturing industries (such as auto parts and machinery). Although the apparel industry is likely to remain important for the local economy in the near future, it should not be viewed as a permanent pole of Torreon's industrial development. A more likely trajectory for Torreon is one of intra-sectoral upgrading within apparel, with the area emerging as a coordination centre for full-package networks throughout Mexico and perhaps eventually even the Caribbean, or inter-sectoral upgrading with other manufacturing sectors emerging as the area's leading industries.

Apparel production has begun to move from the urban areas of Torreon and Gómez Palacio to the rural hinterland, partly as a response to the high turnover rates that characterized the cluster's tight labour market in the late 1990s.[13] Employers in the Torreon area that we interviewed identified excessive turnover as their most serious problem. Local manufacturers met to try to develop a unified front against the practice of 'pirating' workers from competing firms by bidding up wages, but they have not yet developed a solution. A few have tried to mitigate the turnover by relocating production to outlying rural areas. Many of the collective farms that anchored Mexico's agricultural programme for decades are located around Torreon in the Laguna region, and they were privatized in the early 1990s under the administration of Mexican President Carlos Salinas. The privatization of these cooperatives, known as *ejido*s, created a supply of landless rural workers with few employment opportunities. The incorporation of former *ejido* lands into the Torreon apparel cluster reflects the importance of the national economy as an institutional arena affecting development outcomes. Mexico's neo-liberal turn has entailed a wholesale disavowal of the import-substituting industrialization strategy that was the region's development

orthodoxy for several decades and the enthusiastic adoption of an export-oriented growth strategy in its place (Dussel Peters 2000). This process of economic and political transformation also entails the destruction of the Mexican Revolution's institutional legacies. It is in this context that the privatization and sale of the *ejido*s – the centrepiece of a land reform process that was one of the Revolution's most far-reaching products – must be understood. In other words, changes in the fabric of Mexico's politico-economic institutions are reflected in the transformation of the rural areas around Torreon and their development as low-wage production sites on Torreon's periphery.

As the example of Torreon's *ejido*s illustrates, the nation-state remains a major player in shaping globalization and mediating its outcomes. In fact, the national economy is the context most directly affecting wages and working conditions in Mexico's textile mills, garment factories, cutting rooms and industrial laundries. Despite the efforts of anti-sweatshop campaigns and the rise of corporate codes of conduct among leading US apparel firms doing business in Mexico, the declining standards of living that many Mexican workers have experienced since the 1994 devaluation cannot be understood solely by analysing the ways in which these workers have become incorporated into the apparel commodity chain. Instead, the extent to which Mexicans benefit from the processes of industrial restructuring, political-economic reform and trade liberalization depends in large part on the nested institutional environments within which they live and work (Bair 2002).

Conclusions

The commodity chains framework is a valuable tool for studying the implications of globalization because it is able to move across multiple scales: the global, regional, national and local. It focuses on inter-organizational networks in global industries to illuminate the dynamics of contemporary capitalism. This article has shown that the apparel commodity chain in North America is driven by lead firms that coordinate international production and sourcing networks, and their decisions have compelling implications for workers in many communities. Numerous studies of exporting clusters in developing countries, whether they utilize the commodity chains framework (Kessler 1999; van Dooren 2002) or other approaches such as the industrial districts or cluster paradigms (Rabellotti 1999; Vangstrup 1999), have confirmed the importance of external linkages in shaping the experiences of local firms in export-oriented apparel industries.[14] These findings suggest, as we have argued elsewhere (Bair and Gereffi 2001), that commodity chain analyses can usefully complement studies of exporting clusters in industrializing countries by highlighting how local producers become incorporated into global markets.

However, we agree with those who point out that institutional environments are a critical factor in shaping international networks and mediating their consequences in the particular communities where the links of commodity chains touch down. Upgrading prospects, and developmental outcomes more generally, are determined not just by the organizational dynamics of commodity chains but also by several layers of institutional environments: global (for example, the Multi-Fiber Arrangement or the World Trade Organization's Agreement on Textiles and Clothing); macro-regional (for example, regulatory regimes such as NAFTA and the Caribbean

Basin Trade and Development Act); national (for example, welfare states and industrial relations systems); and local (for example, industry associations and labour markets). In this respect we concur with Palpacuer and Parisotto (2003: 99), who argue that the GCC framework 'should be combined with other, "territorially based" approaches … in order to better comprehend the social and institutional context of global networks, and how this context influences network dynamics.'

Our analysis of the North American apparel industry endeavours to meet this challenge. We have analysed the structure of the global apparel industry as a sequence of export roles, whereby lead firms construct different types of networks that connect local exporters to global markets. However, we have also focused on North America as a regional production and trade bloc within the global apparel industry and highlighted the way in which NAFTA-era restructuring is affecting firms and workers in the United States, Mexico and the Caribbean Basin. The emergence of full-package supply networks linking Mexican firms and the US market has created upgrading opportunities for Mexico *vis-à-vis* the Caribbean, while simultaneously underscoring the difficulties regional integration presents for workers in US textile and garment centres, such as North Carolina and El Paso, Texas, respectively. Even within Mexico's most dynamic apparel cluster, Torreon, the benefits generated by post-NAFTA export dynamism are contingent and transitory. Globalization entails uneven development for firms and workers both within and across regions and nations, and viewing the process through the lens of the commodity chains framework contributes to our understanding of who wins and who loses, and why.

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Notes

1. See also Palpacuer and Parisotto (2003) for a discussion of the producer-driven/buyer-driven typology.
2. Assembly manufacturing is the first rung on our ladder of export roles. However, for countries that are undergoing trade liberalization, the assembly model of export-oriented production can represent a 'downgrading' for local firms that have designed and manufactured their own brands for sale in the often highly protected national market. Companies unable to compete with imports at home, and unable to export their own brands to foreign markets, may turn to assembly subcontracting for foreign firms as a survival strategy (Bair 2001; 2002; Carrillo et al. 2002).
3. However, see Dussel Peters et al. (2002) for a discussion of the 'limits of foreign partners as teachers'.
4. Canada's apparel employment increased 13 per cent since the passage of NAFTA, from 82,800 in 1994 to 93,700 in 2000.
5. In contrast, the United States' two principal garment-manufacturing poles of Los Angles and New York have witnessed far less dramatic declines in apparel employment since NAFTA (Kessler 2002; Palpacuer 2002) There is some concern that a resurgence of sweatshops in the United States is contributing to the competitiveness and flexibility of

these urban centres, whose firms specialize in more fashion-sensitive apparel segments such as women's outwear and sportswear (Ross 2002).

6. In 2001, China exported almost $8.9 billion worth of apparel to the United States, while Mexico was in second place among US suppliers with $8.1 billion. Hong Kong was a distant third, at $4.3 billion in apparel exports (US Department of Commerce, US imports for consumption).
7. George Henderson, chairman and chief executive officer of Burlington Industries, pointedly criticized 'the US government's history of using the textile industry as a bargaining chip in international relations' (Rives 2001). This statement followed an announcement by the George W. Bush administration that it is considering cutting tariffs on textiles coming into the United States from Pakistan, a key ally in the Afghan war.
8. See Bair (2002: 192–96) for a more detailed discussion of the difficulties in measuring full-package exports.
9. According to one account, trade diversion from the Caribbean Basin to Mexico after NAFTA was responsible for 150 plant closures and 123,000 lost jobs between 1995 and 1996 (Rohter 1997).
10. Torreon's apparel industry actually encompasses the adjoining cities of Torreon and Gómez Palacio, which are located in the neighbouring states of Coahuila and Durango, respectively.
11. This account of El Paso's apparel industry is taken from Spener (2002), unless otherwise indicated.
12. See Bair and Gereffi (2001), Gereffi et al. (2002) and Bair (2002) for a more detailed analysis of the Torreon case.
13. Turnover rates in Torreon's apparel industry vary between plants, with some companies reporting turnover rates of 4 per cent a month while others face monthly rates of 10 per cent or more.
14. See the introduction to a special issue of *World Development* edited by Schmitz and Nadvi (1999) for a concise overview of this literature.

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