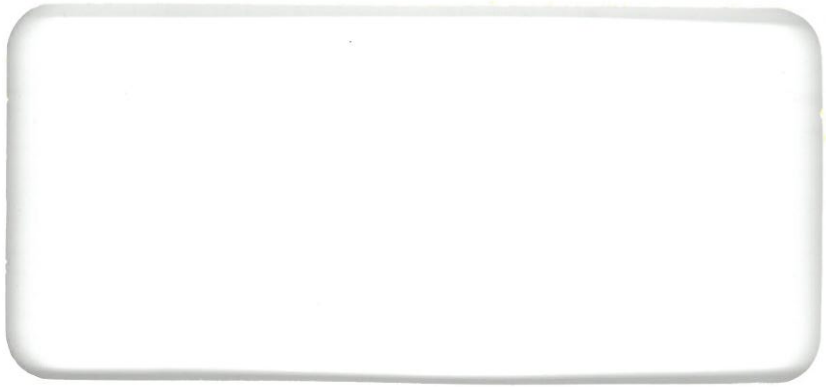

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Gary Gereffi

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# Prospects for Industrial Upgrading by Developing Countries in the Global Apparel Commodity Chain

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## About the Author

Gary Gereffi is Professor of Sociology and Director of the Markets and Management Studies Program at Duke University, where he teaches courses in economic sociology, globalization and comparative development, and international competitiveness. He received his B.A. degree from the University of Notre Dame, and his M.A. and Ph.D. degrees from Yale University. Gereffi has published several books and numerous articles on business-government relations in various parts of the world. His books include: *The Pharmaceutical Industry and Dependency in the Third World* (Princeton University Press, 1983); *Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia* (Princeton University Press, 1990), co-edited with Donald L. Wyman; and *Commodity Chains and Global Capitalism* (Praeger Publishers, 1994), co-edited with Miguel Korzeniewicz. Gereffi's research interests deal with the competitive strategies of global firms, regional integration, and industrial upgrading in East Asia and Latin America.


## Abstract

The article uses the global commodity chains framework to explain the transformations in production, trade and corporate strategies that altered the global apparel industry over the past decades and changed the conditions for industrial upgrading. The apparel industry is identified as a buyer-driven commodity chain that contains three types of lead firms: retailers, marketers and branded manufacturers. As apparel production has become globally dispersed and competition between these firms has intensified, each type of lead firm has developed extensive global sourcing capabilities. While "de-verticalizing" 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.

Industrial upgrading in the global apparel industry is primarily associated with the shift from assembly to full-package production. Compared with the mere assembly of imported inputs, full-package production fundamentally changes the relationship between buyer and supplier in a direction that gives far more autonomy and learning potential for industrial upgrading to the supplying firm. Full-package production is needed because the retailers and marketers that order the garments do not know how to make them. Particular places such as the East Asian newly industrializing economies of Hong Kong, Taiwan, South Korea, and the People's Republic of China have used the full-package role to create an enduring edge in export-oriented development. However, the North American Free Trade Agreement between the United States and Mexico, along with a relative decline in the importance of East Asian apparel exports to the United States, has now created favourable conditions for the extension of full-package production to the North American setting.

The article distinguishes between three new patterns or models of competition in the North American market: the East Asian, Mexican and Caribbean Basin models. Each model presents different perspectives and challenges for industrial upgrading. The United States continues to define the terms of change, and US firms lead the process toward mass customization and agile manufacturing. Mexico needs to develop new and better networks in order to compete with East Asian suppliers for the US full-package market. The Caribbean Basin model, almost exclusively limited to assembly, would have to develop networks with US retailers and marketers if they are to acquire the skills and resources needed to move into the more diversified activities associated with full-package production.

# Prospects for Industrial Upgrading by Developing Countries in the Global Apparel Commodity Chain

**Gary Gereffi**[1]

Apparel is one of the oldest and largest export industries in the world. Most nations produce for the international textile and apparel market (Dickerson 1995: 6), making this one of the most global of all industries. Apparel is the typical "starter" industry for countries engaged in export-oriented industrialization, and it played the leading role in East Asia's early export growth. Many questions have been raised, however, concerning the degree to which international trade can be the fulcrum for sustained economic growth for developing nations. Under what conditions can trade-based growth become a vehicle for genuine industrial upgrading, given the frequent criticisms made of low-wage, low-skill, assembly-oriented export activities? Do Asia's accomplishments in trade-led industrialization contain significant lessons for other regions of the world?

This paper will address these and related questions using a global commodity chains framework. A commodity chain refers to the whole range of activities involved in the design, production, and marketing of a product. A critical distinction in this approach is between buyer-driven and producer-driven commodity chains. Japan in the 1950s and 1960s, the East Asian newly industrializing economies (NIEs) during the 1970s and 1980s, and China in the 1990s became world-class exporters primarily by mastering the dynamics of buyer-driven commodity chains, which supply a wide range of labor-intensive consumer products such as apparel, footwear, toys, and sporting goods. The key to success in East Asia's buyer-driven chains was to move from the mere assembly of imported inputs (traditionally associated with export-processing zones) to a more domestically integrated and higher value-added form of exporting known alternatively as full-package supply or OEM (original equipment manufacturing) production.[2] Subsequently, Japan and some firms in the East Asian NIEs pushed beyond the OEM export role to original brand name manufacturing (OBM) by joining their production expertise with the design and sale of their own branded merchandise in domestic and overseas markets. Apparel thus embodies two contrasting production



systems characteristic of buyer-driven chains: the assembly and the OEM models. Whereas the assembly model is a form of industrial subcontracting in which manufacturers provide the parts for simple assembly to garment sewing plants, the OEM model is a form of commercial subcontracting in which the buyer-seller linkage between foreign merchants and domestic manufacturers allows for a greater degree of local learning about the upstream and downstream segments of the apparel chain.

From a global commodity chains perspective, East Asia's transition from assembly to full-package supply derives in large measure from its ability to establish close linkages with a diverse array of lead firms in buyer-driven chains. Lead firms are the primary sources of material inputs, technology transfer, and knowledge in these organizational networks. In the apparel commodity chain, different types of lead firms use different networks and source in different parts of the world. Retailers and marketers tend to rely on full-package sourcing networks, in which they buy ready-made apparel primarily from Asia, where manufacturers in places like Hong Kong, Taiwan, and South Korea have historically specialized in this kind of production. As wage levels in those countries have gone up, East Asian manufacturers have tended to develop multilayered global sourcing networks where low-wage assembly can be done in other parts of Asia, Africa, and Latin America, while the NIE manufacturers play a critical coordinating role in the full-package production process. Branded manufacturers, by contrast, tend to create production networks that focus on apparel assembly using imported inputs. Whereas full-package sourcing networks are generally global, production networks established by branded manufacturers are predominantly regional. U.S. manufacturers go to Mexico and the Caribbean Basin, European Union firms look to North Africa and Eastern Europe, and Japan and the East Asian NIEs look to lower-wage regions within Asia.

The organization of the paper is as follows. First, the global commodity chains framework will be outlined, with an emphasis on the structure and dynamics of buyer-driven chains. Second, the role of each of the big buyers (retailers, marketers, and manufacturers) in forging global sourcing networks in the apparel commodity chain will be

highlighted. Third, we will examine the evolution of apparel sourcing networks in Asia. Industrial upgrading in the Asian context will be examined as the process of building, extending, coordinating, and completing international production and trade networks. These networks are resilient forms of social capital that are a valuable competitive asset in the global economy. Fourth, we will assess the implications of the Asian experience for apparel sourcing patterns in North America and Europe. Both regions are moving beyond assembly production and establishing full-package or OEM model in order to promote regionally integrated apparel commodity chains. The Japanese pattern of apparel sourcing, which is highly concentrated in a few suppliers, will be contrasted with the American and European patterns, and the differences will be traced to trade policy. The final section of the report will offer conclusions regarding upgrading options within the global apparel industry.

## I. The Apparel Commodity Chain

In global capitalism, economic activity is not only international in scope; it is also global in organization. "Internationalization" refers to the geographic spread of economic activities across national boundaries. As such, it is not a new phenomenon. Indeed, it has been a prominent feature of the world economy since at least the seventeenth century when colonial empires began to carve up the globe in search of raw materials and new markets for their manufactured exports. "Globalization" is much more recent than internationalization because it implies functional integration between internationally dispersed activities.

Globalization has been promoted by industrial and commercial firms alike, which have established two distinct types of international economic networks that have been called "producer-driven" and "buyer-driven" global commodity chains, respectively (see Figure 1) (Gereffi 1994; 1999). A commodity chain refers to the whole range of activities involved in the design, production, and marketing of a product (see Gereffi and Korzeniewicz, 1994 for an overview of this framework). Producer-driven commodity chains are those in which large, usually transnational, manufacturers play the central roles in coordinating production networks (including their backward and forward linkages).



This is characteristic of capital-and technology-intensive industries such as automobiles, aircraft, computers, semiconductors, and heavy machinery. The automobile industry offers a classic illustration of a producer-driven chain, with multilayered production systems that involve thousands of firms (including parents, subsidiaries, and subcontractors). In the 1980s, the average Japanese automaker's production system, for example, contained 170 first-tier, 4,700 second-tier, and 31,600 third-tier subcontractors (Hill 1989: 466). Florida and Kenney (1991) found that Japanese automobile manufacturers actually reconstituted many aspects of their home-country supplier networks in North America. Doner (1991) extended this framework to highlight the complex forces that lead Japanese automakers to create regional production schemes for the supply of auto parts in a half-dozen nations in East and Southeast Asia. Henderson (1989), Borrus (1997), and Gereffi (1998) also support the notion that producer-driven commodity chains have established an East Asian division of labor in their studies of the internationalization of the U.S. and Japanese semiconductor and electronics industries.

Buyer-driven commodity chains refer to those industries in which large retailers, marketers, and branded manufacturers play the pivotal roles in setting up decentralized production networks in a variety of exporting countries, typically located in the third world. This pattern of trade-led industrialization has become common in labor-intensive, consumer goods industries such as garments, footwear, toys, house-wares, consumer electronics, and a variety of handicrafts. Production is generally carried out by tiered networks of third world contractors that make finished goods for foreign buyers. Large retailers or marketers that order the goods supply the specifications.

One of the main characteristics of the firms that fit the buyer-driven model, including retailers like Wal-Mart, Sears Roebuck, and J.C. Penney, athletic footwear companies like Nike and Reebok, and fashion-oriented apparel companies like Liz Claiborne, The 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

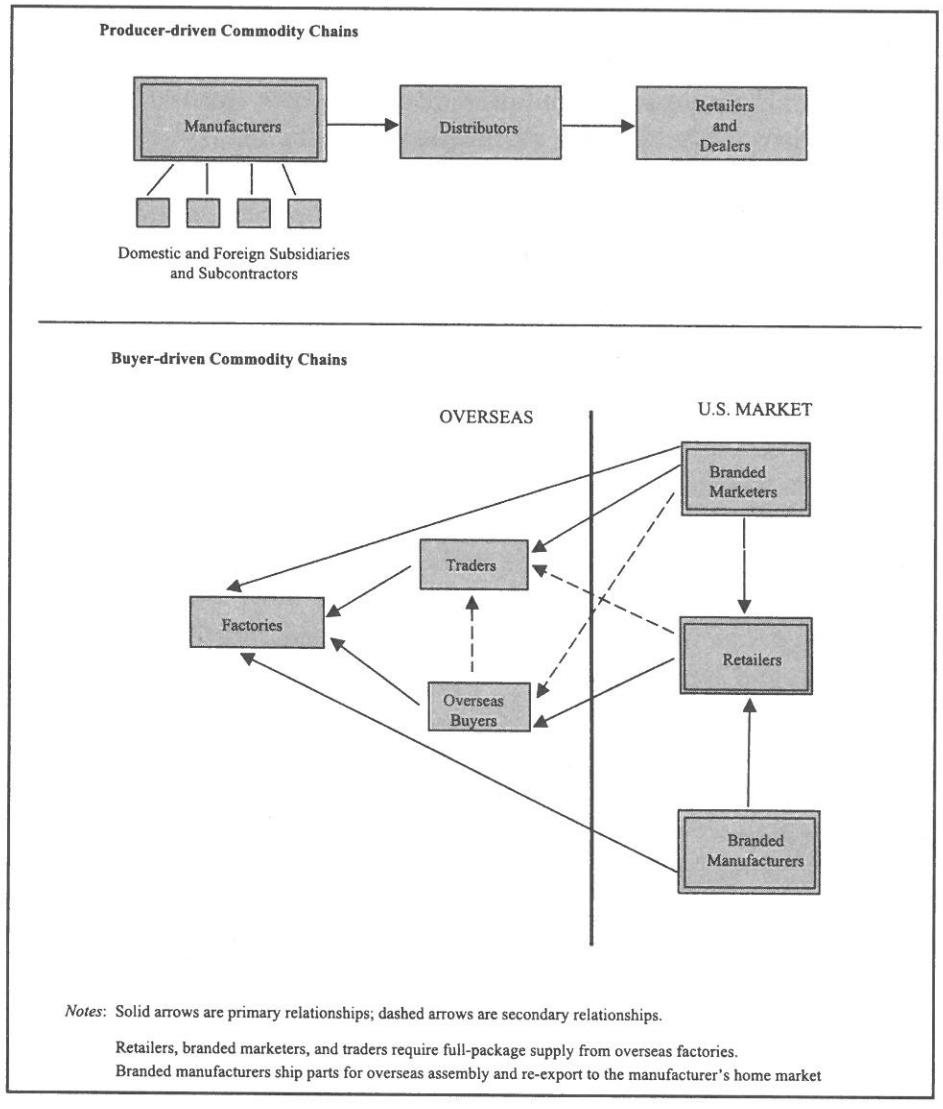



**Figure 1 - Buyer-driven Commodity Chains**

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).



Profitability is greatest in the relatively concentrated segments of global commodity chains characterized by high barriers to the entry of new firms. In producer-driven chains, manufacturers making advanced products like aircraft, automobiles, and computers are the key economic agents not only in terms of their earnings, but also in their ability to exert control over backward linkages with raw material and component suppliers, and forward linkages into distribution and retailing. The lead firms in producer-driven chains usually belong to global oligopolies. Buyer-driven commodity chains, by contrast, are characterized by highly competitive and globally decentralized factory systems with low barriers to entry in production. The companies that develop and sell brand-named products exert substantial control over how, when, and where manufacturing will take place, and how much profit accrues at each stage of the chain. Thus, whereas producer-driven commodity chains are controlled by large manufacturers at the point of production, the main leverage in buyer-driven industries is exercised by marketers and merchandisers at the design and retail ends of the chain. The leading firms in producer-driven and buyer-driven commodity chains use barriers to entry to generate different kinds of "rents" (broadly defined as returns from scarce assets) in global industries. These assets may be tangible (as with machinery), intangible (brands), or intermediate (as in marketing skills). Adapting and extending the typology of rents in Kaplinsky (1998), producer-driven chains rely primarily on technology rents, which arise from asymmetrical access to key product and process technologies; and organizational rents, which refer to a form of intra-organizational process know-how that originated in Japan, and is particularly significant in the transition from mass production to mass customization (or flexible production), involving a cluster of new organizational techniques such as just-in-time production, total quality control, modular production, preventive maintenance, and continuous improvement.

Buyer-driven chains are most closely tied to *relational rents*, which refer to several families of inter-firm relationships, including the techniques of supply-chain management that link large assemblers with small and medium-size enterprises, the construction of strategic alliances, and small firms clustering together in a particular locality and manifesting elements of collective efficiency associated with OEM

production;[3] *trade-policy rents*, understood as the scarcity value created by protectionist trade policies like apparel quotas; and *brand name rents*, which refer to the returns from the product differentiation techniques used to establish brand-name prominence in major world markets.

In the apparel commodity chain, entry barriers are low for most garment factories, although progressively higher as one moves upstream to textiles and fibers; brand names and stores are alternative competitive assets firms can use to generate significant economic rents. The lavish advertising budgets and promotional campaigns required to create and sustain global brands, and the sophisticated and costly information technologies employed by today's mega-retailers to develop "quick response" programs that increase revenues and lower risks by getting suppliers to manage inventory (Abernathy et al. 1999), illustrate recent techniques that have allowed retailers and marketers to displace traditional manufacturers as the leaders in many consumer goods industries.

One of the major hypotheses of the global commodity chains approach is that development requires linking up with the most significant "lead firms" in an industry. These lead firms are not necessarily the traditional vertically integrated manufacturers, nor do they even need to be involved in making finished products. They can be located upstream or downstream from manufacturing (such as the fashion designers or private label retailers in apparel), or they can be involved in the supply of critical components (such as microprocessor companies like Intel and software firms like Microsoft in the computer industry). What distinguishes lead firms from their followers or subordinates is that they control access to major resources (such as product design, new technologies, brand names, or consumer demand) that generate the most profitable returns in the industry.

## II. Big Buyers and Global Sourcing

A fundamental restructuring is underway in the retail sector in the United States and other developed economies. The global retailing industry is dominated by large organizations that are moving toward greater specialization by product (the rise of specialty stores that sell



growth of high-volume, low-cost discount chains). Furthermore, the process of filling the distribution pipeline is leading these retailers to develop strong ties with global suppliers, particularly in low-cost countries (Management Horizons, 1993). Nowhere are these changes more visible than in apparel, which is the top merchandise category for most consumer goods retailers. Between 1987 and 1991, the five largest softgoods chains in the United States increased their share of the national apparel market from 35 to 45 percent (Dickerson 1995: 452). By 1995, the five largest U.S. retailers — Wal-Mart, Sears, Kmart, Dayton Hudson,[4] and JC Penney — accounted for 68 percent of all apparel sales in publicly held retail outlets. The next top 24 retailers, all billion dollar corporations, represented an additional 30 percent of these sales (Finnie 1996: 22). The two top discount giants, Wal-Mart and Kmart, by themselves control one-quarter of all apparel (by unit volume, not value) sold in the United States.

Although the degree of market power that is concentrated in large U.S. retailers may be extreme, owing to the recent spate of mergers and acquisitions in this sector, a similar shift in power from manufacturers to retailers and marketers appears to be underway in most developed nations. Retailing across the European Union has been marked by substantial concentration in recent years. In Germany, the five largest clothing retailers (C&A, Quelle, Metro/Kaufhof, Kardstadt, and Otto) in 1992 accounted for 28 percent of the EU's largest national economy, while the United Kingdom's two top clothing retailers (Marks & Spencer and the Burton Group) controlled over 25 percent of the UK market in 1994 (OETH 1995: 11-13). Marks & Spencer, Britain's largest and most successful retailing firm with over 260 stores in the United Kingdom plus stores in other parts of Europe and Canada, itself buys about 20 percent of all the clothing made in Britain (Dickerson, 1995: 472). In both France and Italy, the role of independent retailers in the clothing market has declined since 1985, while the share of specialty chains, franchise networks, and hypermarkets is rising rapidly. In Japan, the 1992 revision of the Large Retail Store Law, which liberalized restrictions on the opening of new retail outlets, has caused a rapid increase in the number of large-volume retailers and suburban chain stores. The Japanese government predicts there will be 20 percent fewer retailers in Japan in the year 2000 than in 1985, mainly due to attrition

From the vantage point of buyer-driven commodity chains, the major significance of growing retailer concentration is its tendency to augment global sourcing. As each type of organizational buyer in the apparel commodity chain has become more actively involved in offshore sourcing, the competition between retailers, marketers, and manufacturers has intensified, leading to a blurring of the traditional boundaries between these firms and a realignment of interests within the chain.

*Retailers*. In the past, retailers were the apparel manufacturers' main customers, but now they are increasingly becoming their competitors. As consumers demand better value, retailers have increasingly turned to imports. In 1975, only 12 percent of the apparel sold by U.S. retailers was imported; by 1984, retail stores had doubled their use of imported garments (AAMA, 1984). According to unpublished data from the U.S. Customs Service's Net Import File, retailers accounted for 48 percent of the total value of imports of the top 100 U.S. apparel importers in 1993 (who collectively represent about one-quarter of all 1993 apparel imports); U.S. apparel marketers, which perform the design and marketing functions but contract out the actual production of apparel to foreign or domestic sources, represented 22 percent of the value of these imports; and domestic producers made up an additional 20 percent of the total[5] (Jones, 1995: 25-26). The picture in Europe is strikingly similar. European retailers account for fully one-half of all apparel imports, and marketers or designers add roughly another 20 percent (Scheffer 1994: 11-12).

In the 1980s, many retailers began to compete directly with the national brand names of apparel producers and marketers by expanding their sourcing of "private label" (or store-brand) merchandise. This is sold more cheaply than the national brands but it also is more profitable to the retailers since they eliminate some of the middlemen in the chain. Private label programs have led a growing number of merchants to take on the entrepreneurial functions of normal apparel manufacturers, such as product design, fabric selection and procurement, and garment production or sourcing. Private label goods, which constituted about 25 percent of the total U.S. apparel market in 1993 (Dickerson 1995: 460), can curtail the business of both manufacturers and well known designer lines.



*Branded Marketers*. One of the most notable features of buyer-driven chains is the creation since the mid-1970s of prominent marketers whose brands are extremely well known, but that carry out no production whatsoever. These "manufacturers without factories" include companies like Liz Claiborne, Nike, and Reebok, who literally were "born global" since their sourcing has always been done overseas. As pioneers in global sourcing, branded marketers were instrumental in providing overseas suppliers with knowledge that later allowed them to upgrade their position in the apparel chain.

In order to deal with the influx of new competition, branded marketers have adopted several strategic responses that will alter the content and scope of their global sourcing networks: they are discontinuing certain support functions (such as pattern grading, marker making, and sample making), and reassigning them to contractors; they are instructing the contractors where to obtain needed components, thus reducing their own purchase and redistribution activities; they are shrinking their supply chains, using fewer but more capable manufacturers; they are adopting more stringent vendor certification systems to improve performance; and they are shifting the geography of their sourcing configuration from Asia to the western hemisphere. In essence, marketers now recognize that overseas contractors have the capability to manage all aspects of the production process, which restricts the competitive edge of marketers to design and brands.

*Branded Manufacturers*. Given that foreign production can often provide similar quantity, quality, and service as domestic producers, but at lower prices, apparel manufacturers in developed countries have been caught in a squeeze. They are responding in several different ways. In the United States and Europe, an "If you can't beat them, join them" attitude has evolved among many smaller and mid-sized apparel firms, who feel they can't compete with the low cost of foreign-made goods and thus they are defecting to the ranks of importers.

The decision of many larger manufacturers in developed countries is no longer whether to engage in foreign production, but how to organize and manage it. These firms supply intermediate inputs (cut fabric, thread, buttons, and other trim) to extensive networks of offshore

suppliers, typically located in neighboring countries with reciprocal trade agreements that allow goods assembled offshore to be re-imported with a tariff charged only on the value added by foreign labor. This kind of international subcontracting system exists in every region of the world. It is called the 807/9802 program or "production sharing" in the United States (USITC 1997), where the sourcing networks of U.S. manufacturers are predominantly located in Mexico, Central America, and the Caribbean; in Europe, this is known as outward processing trade (OPT), and the principal suppliers are located in North Africa and Eastern Europe (OETH 1995); and in Asia, manufacturers from relatively high-wage economies like Hong Kong have outward processing arrangements (OPA) with China and other low-wage nations (Birnbaum 1993).

A significant countertrend is emerging among established apparel manufacturers, however, who are de-emphasizing their production activities in favor of building up the marketing side of their operations by capitalizing on both brand names and retail outlets. Sara Lee Corporation, one of the largest apparel producers in the United States — whose stable of famous brand names includes L'eggs hosiery, Hanes, Playtex, Wonderbras, Bali, and Coach leather products, to name a few — recently announced its plans to "de-verticalize" its consumer-products divisions, a fundamental reshaping that would move it out of making the brand-name goods it sells (Miller 1997). Other well-known apparel manufacturers like Phillips-Van Heusen and Levi Strauss & Co. are also emphasizing the need to build global brands, frequently through acquisitions of related consumer products lines, while many of their production facilities are being closed or sold to offshore contractors.

## III. Global Sourcing in Apparel: The Asian Connection

The world textile and apparel industry has undergone several migrations of production since the 1950s and they all involve Asia. The first migration of the industry took place from North America and Western Europe to Japan in the 1950s and early 1960s, when Western textile and clothing production was displaced by a sharp rise in imports from Japan. The second supply shift was from Japan to the "Big Three" Asian apparel producers (Hong Kong, Taiwan, and South Korea), which



| Country Source | | 1983 Value US$ mn | % | 1986 Value US$ mn | % | 1990 Value US$ mn | % | 1994 Value US$ mn | % | 1996 Value US$ mn | % | 1999 Value US$ mn | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Northeast Asia* | China | 759 | | 1,661 | | 3,439 | | 6,338 | | 6,340 | | 7,351 | |
| | Hong Kong | 2,249 | | 3,392 | | 3,977 | | 4,393 | | 3,998 | | 4,341 | |
| | Taiwan | 1,800 | | 2,621 | | 2,489 | | 2,269 | | 2,066 | | 2,076 | |
| | South Korea | 1,685 | | 2,581 | | 3,342 | | 2,245 | | 1,531 | | 2,256 | |
| | Macao | 132 | | 229 | | 417 | | 605 | | 761 | | 1,024 | |
| | *Total* | 6,625 | *68%* | 10,483 | *60%* | 13,663 | *54%* | 15,850 | *43%* | 14,696 | *35%* | 17,048 | *30%* |
| *Southeast Asia* | Indonesia | 75 | | 269 | | 645 | | 1,182 | | 1,505 | | 1,816 | |
| | Philippines | 319 | | 473 | | 1,083 | | 1,457 | | 1,569 | | 1,812 | |
| | Thailand | 125 | | 213 | | 483 | | 1,006 | | 1,243 | | 1,774 | |
| | Malaysia | 93 | | 257 | | 604 | | 1,051 | | 1,242 | | 1,280 | |
| | Singapore | 193 | | 386 | | 621 | | 472 | | 327 | | 327 | |
| | *Total* | 806 | *8%* | 1,598 | *9%* | 3,436 | *13%* | 5,168 | *14%* | 5,887 | *14%* | 7,009 | *12%* |
| *South Asia* | India | 220 | | 344 | | 636 | | 1,309 | | 1,350 | | 1,650 | |
| | Bangladesh | 7 | | 154 | | 422 | | 885 | | 1,125 | | 1,682 | |
| | Sri Lanka | 126 | | 257 | | 426 | | 871 | | 1,059 | | 1,304 | |
| | Pakistan | 32 | | 92 | | 232 | | 508 | | 642 | | 810 | |
| | *Total* | 385 | *4%* | 847 | *5%* | 1,716 | *7%* | 3,573 | *10%* | 4,175 | *10%* | 5,446 | *10%* |
| *Central America and the Caribbean* | Dominican Republic | 139 | | 287 | | 723 | | 1,600 | | 1,773 | | 2,355 | |
| | Honduras | 20 | | 32 | | 113 | | 650 | | 1,241 | | 2,198 | |
| | El Salvador | 7 | | 11 | | 54 | | 398 | | 721 | | 1,328 | |
| | Guatemala | 4 | | 20 | | 192 | | 600 | | 809 | | 1,244 | |
| | Costa Rica | 64 | | 142 | | 384 | | 686 | | 706 | | 828 | |
| | Jamaica | 13 | | 99 | | 235 | | 454 | | 505 | | 344 | |
| | Other CBI | 142 | | 207 | | 284 | | 151 | | 321 | | 591 | |
| | *Total* | 389 | *4%* | 797 | *5%* | 1,985 | *8%* | 4,538 | *12%* | 6,076 | *15%* | 8,349 | *15%* |
| *Mexico* | | 199 | *2%* | 331 | *2%* | 709 | *3%* | 1,889 | *5%* | 3,850 | *9%* | 7,845 | *14%* |
| *All other countries* | | 1,328 | *14%* | 3,283 | *19%* | 4,009 | *16%* | 5,859 | *16%* | 6,996 | *17%* | 10,679 | *19%* |
| | *TOTAL APPAREL* | 9,731 | *100%* | 17,341 | *100%* | 25,518 | *100%* | 36,878 | *100%* | 41,679 | *100%* | 56,376 | *100%* |

Source: Compiled from official statistics of the U.S. Department of Commence, U.S. imports for consumption, customs value.

permitted the latter group to dominate global textile and clothing exports in the 1970s and 1980s. During the past 10 to 15 years, there has been a third migration of production — this time from the Asian Big Three to a number of other developing economies. In the 1980s, the principal shift was to Mainland China, but it also encompassed several Southeast Asian nations and Sri Lanka. In the 1990s, the proliferation of new suppliers included South Asian and Latin American apparel exporters (Khanna 1993; Gereffi 1998). This most recent shift is seen in sharp relief in Table 1, which looks at apparel imports to the United States, the world's largest market, from 1983 to 1999. In 1983, the Asian "Big Three" (Hong Kong, Taiwan, and South Korea), plus China, were responsible for two-thirds of U.S. apparel imports; by 1999, this share had dropped to 30 percent. Table 1 highlights two main trends in U.S. apparel imports: (1) a shift within Asia from the "Big Three" to the growing importance of successive waves of exporters: first China, followed by Southeast Asia and then South Asia; and (2) a growth in non-Asian sources of apparel supply, especially the importance of Central America and the Caribbean as a region (which nearly doubled its share of U.S. apparel imports from 8 percent in 1990 to 15 percent in 1999) and, most notably, Mexico (which multiplied its share of U.S. apparel imports nearly fivefold from 3 percent to 14 percent in the same period).

How can we explain these trade shifts in the apparel commodity chain? Neoclassical economics has the simplest explanation: The most labor-intensive segments of the apparel commodity chain will be located in countries with the lowest wages. This account is supported by the sequential relocation of textile and apparel production from the United States and Western Europe to Japan, the Asian Big Three, and China, given that each new tier of entrants to the production hierarchy had significantly lower wage rates than their predecessors. The cheap-labor argument does not hold up as well, however, when we get to the proliferation of new Asian and Caribbean suppliers, whose U.S. market share expanded even though their wage rates are often considerably higher than China's. Furthermore, although the share of U.S. apparel exports represented by Hong Kong, South Korea, and Taiwan has declined during the past decade, these NIEs still rank among Asia's top apparel exporters to the United States in 1997, despite having the highest apparel labor costs in



The statist perspective, which argues that government policies will play a major role in shaping the location of apparel export activities, helps to explain these discrepancies. A critical factor in the sharp decline of Taiwan's and South Korea's apparel exports in the late 1980s was not only their rising wage rates, but the sharp appreciation of their local currencies vis-a-vis the U.S. dollar after the Plaza Agreement was signed in 1985. Between 1985 and 1987, the Japanese yen was revalued by close to 40 percent, the New Taiwan dollar by 28 percent, and from 1986 to 1988 the Korean won appreciated by 17 percent.

The most important policies that shape U.S. apparel imports from Asia, the Caribbean, and elsewhere, however, are quotas and preferential tariffs. Quotas on apparel and textiles items continue to be regulated by the Multifiber Arrangement (MFA) of the early 1970s. The MFA has been used by the United States, Canada, and various European nations to impose quantitative limits on imports in a wide variety of product categories. Although the clear intent of these policies was to protect developed-country firms from a flood of low-cost imports that threatened to disrupt major domestic industries, the result was exactly the opposite: protectionism heightened the competitive capabilities of developing country manufacturers, who learned to make sophisticated products that were more profitable than simple ones. Protectionism by core countries also diversified the scope of foreign competition, as an ever widening circle of exporters was needed to meet booming North American and European demand. In recent years, the creation of the European Union and the North American Free Trade Agreement (NAFTA) has led to the imposition of preferential tariffs within regional markets, which has generated a major shift in the global sourcing dynamics of these regional markets.

The ability of the East Asian NIEs to sustain their export success over several decades, and to develop a multilayered sourcing hierarchy within Asia, is only partially related to wage rates and state policies. From a commodity chain perspective, East Asia must be viewed as part of an interrelated regional economy (Gereffi 1998). The apparel export boom in the less developed southern tier of Asia has been driven to a significant extent by the industrial restructuring of the northern tier East Asian NIEs. As Northeast Asian firms began moving their production

offshore, they devised ways to coordinate and control their sourcing networks. Ultimately, they focused on the more profitable design and marketing segments within the apparel commodity chain to sustain their competitive edge. This transformation can be conceptualized as a process of industrial upgrading, based in large measure on building various kinds of economic and social networks between buyers and sellers.

### *Industrial Upgrading in East Asia*

The East Asian NIEs are generally taken as the archetype for industrial upgrading among developing countries. They made a rapid transition from the initial assembly phase of export growth (typically utilizing export-processing zones located near major ports) to a more generalized system of incentives that applied to all export-oriented-factories in their economies. The next stage for Taiwan, South Korea, Hong Kong, and Singapore was OEM production. The OEM model has the following features: the supplying firm makes a product according to the design specified by the buyer; the product is sold under the buyer's brand name; the supplier and buyer are separate firms; and the supplier lacks control over distribution. East Asian firms soon became full-range package suppliers for foreign buyers, and thereby forged an innovative entrepreneurial capability that involved the coordination of complex production, trade, and financial networks (Gereffi 1995).

The OEM export role has many advantages. It enhances the ability of local entrepreneurs to learn the preferences of foreign buyers, including international standards for the price, quality, and delivery of export merchandise. It also generates substantial backward linkages in the domestic economy because OEM contractors are expected to develop reliable sources of supply for many inputs. Moreover, expertise in OEM production increases over time and it spreads across different types of activities. The OEM supplier learns much about the downstream and upstream segments of the apparel commodity chain from the buyer. This tacit knowledge can later become a powerful competitive weapon.



Particular places such as the East Asian NIEs thus retain an enduring competitive edge in export-oriented development. However, East Asian producers confront intense competition from lower-cost exporters in various parts of the Third World, and the price of their exports to Western nations has been further elevated by sharp currency appreciations during the past decade. Under these circumstances, it is advantageous to establish forward linkages to developed-country markets, where the biggest profits are made in buyer-driven commodity chains. Therefore, a number of firms in the East Asian NIEs that pioneered OEM are now pushing beyond it to the OBM role by integrating their manufacturing expertise with the design and sale of their own branded merchandise.

South Korea is the most advanced of the East Asian NIEs in OBM production, with Korean brands of automobiles (Hyundai), electronic products (Samsung), and household appliances (Samsung and Goldstar), among other items, being sold in North America, Europe, and Japan.[6] Taiwanese companies have pursued OBM in computers, bicycles, sporting equipment, and shoes, but not in apparel. In Hong Kong, clothing companies have been the most successful in making the shift from OEM to OBM. The women's clothing chain Episode, controlled by Hong Kong's Fang Brothers Group, one of the foremost OEM suppliers for Liz Claiborne in the 1970s and 1980s, has stores in 26 countries, only a third of which are in Asia. Giordano, Hong Kong's most famous clothing brand, has added to its initial base of garment factories 200 stores in Hong Kong and China, and another 300 retail outlets scattered across Southeast Asia and Korea. Hang Ten, a less-expensive line, has 200 stores in Taiwan, making it the largest foreign-clothing franchise on the island (Granitsas 1998).

One of the most important mechanisms facilitating the shift to higher-value-added activities for mature export industries like apparel in East Asia is the process of "triangle manufacturing" (Gereffi 1999). The essence of triangle manufacturing, which was initiated by the East Asian NIEs in the 1970s and 1980s, is that U.S. (or other overseas) buyers place their orders with the NIE manufacturers they have sourced from in the past, who in turn shift some or all of the requested production to affiliated offshore factories in low-wage countries (e.g., China, Indonesia, or Guatemala). These offshore factories can be wholly owned

subsidiaries of the NIE manufacturers, joint-venture partners, or simply independent overseas contractors. The triangle is completed when the finished goods are shipped directly to the overseas buyer under the U.S. import quotas issued to the exporting nation. Triangle manufacturing thus changes the status of NIE manufacturers from established suppliers for U.S. retailers and designers to "middlemen" in buyer-driven commodity chains that can include as many as 50 to 60 exporting countries.

### *The Internationalization of East Asian Production Networks*

In each of the East Asian NIEs, a combination of domestic supply side constraints (labor shortages, high wages, and high land prices) and external pressures (currency revaluation, tariffs, and quotas) led to the internationalization of the textile and apparel complex by the late 1980s and early 1990s. Typically, the internationalization of production was sparked first by quotas, but the process was greatly accelerated as supply-side factors became adverse. Quotas determined when the outward shift of production began, while preferential access to overseas markets and social networks determined where the firms from the East Asian NIEs went. In this international division of labor, skill-intensive activities were retained in East Asia[7] and labor-intensive activities were relocated.

The internationalization of Hong Kong's firms was triggered by textile import restrictions imposed by the United Kingdom in 1964, which led Hong Kong manufacturers in the late 1960s to shift production to Singapore, Taiwan, and Macao. The Chinese population in these three countries had cultural and linguistic affinities with Hong Kong investors. In addition, Macao benefited from its proximity to Hong Kong, while Singapore qualified for Commonwealth preferences for imports into the United Kingdom. In the early 1970s, Hong Kong apparel firms targeted Malaysia, the Philippines, and Mauritius. This second round of outward investments again was prompted by quota restrictions, coupled with specific host-country inducements. For example, Mauritius established an export-processing zone in an effort to lure Hong Kong investors, particularly knitwear manufacturers who directed their exports to European markets that offered preferential access in terms of low tariffs.



The greatest spur to the internationalization of Hong Kong's textile and apparel companies was the opening of the Chinese economy in 1978. At first, production was subcontracted to state-owned factories, but eventually an elaborate outward-processing arrangement with China was set up that relied on a broad assortment of manufacturing, financial, and commercial joint ventures. The relocation of industry to the Chinese mainland led to a hollowing out of Hong Kong's manufacturing sector during the late 1980s and early 1990s. In 1991, 47,000 factories were employing 680,000 workers in Hong Kong, a figure 25 percent below the peak of 907,000 manufacturing jobs recorded in 1980 (Khanna 1993: 19). The decline was particularly severe in textiles and apparel. Employment in the Hong Kong textile industry fell from 67,000 in 1984 to 36,000 in 1994 — a drop of 47 percent. Meanwhile, Hong Kong's clothing jobs plummeted from 300,000 in 1984 to 137,000 in 1994 — a decrease of 56 percent in a single decade (De Coster 1996a: 65). In 1995, Hong Kong entrepreneurs operated more than 20,000 factories employing an estimated four-and-a-half to five million workers in the Pearl River Delta alone in the neighboring Chinese province of Guangdong (De Coster 1996b: 96). Considering that total employment in Hong Kong industry had shrunk to 386,000 in 1995, or just over 15 percent of the Hong Kong workforce (Berger and Lester 1997: 9), Hong Kong manufacturers in effect increased their domestic labor force well over tenfold through their outward processing arrangement with China.

While manufacturing declined, trading activities in Hong Kong grew to encompass approximately 70,000 firms and 370,000 jobs in 1991, a fivefold increase in the number of firms and a fourfold increase in the number of workers in the trading sector compared to 1978 (Khanna 1993: 19). Thus, trading companies to a large extent have replaced factories as the key economic agent in Hong Kong's export-oriented growth.

This extreme reliance of Hong Kong apparel manufacturers on low-cost Chinese labor has several sources of vulnerability that may undermine the viability of this model in the future (Berger and Lester 1997: 158-162). First, although Guangdong province was once a zone of low wages and an abundant workforce, both wages and land costs have been rising rapidly. As costs in Guangdong go up, Hong Kong

manufacturers who wish to retain this Chinese-based production system will have to move their facilities deeper and deeper inland into China, where they will once again encounter bad roads, inadequate water and power systems, and lack of commercial infrastructure. Second, as production moves inland, it will be increasingly difficult to maintain an adequate supply of Hong Kong managers. Rather than trying to replicate the Pearl River Delta pattern on a large scale further inland, it probably would be better to try to upgrade the operations in the Guangdong plants. Third, new low-cost apparel exporting nations are emerging in Asia — Indonesia, Sri Lanka, India, Myanmar, Vietnam, and others — while Mexico and the Caribbean Basin economies loom as cheap production sites with closer proximity to the large U.S. market. Hong Kong has no special advantages in many of these locations, which suggests that it should avoid being locked into low-wage offshore manufacturing networks and instead take fuller advantage of the global trend toward service-enhanced manufacturing where Hong Kong retains a strong competitive edge.

As in Hong Kong, the internationalization of South Korea's and Taiwan's apparel producers began as a response to quota restrictions. Korean garment firms lacking sufficient export quotas initially set up offshore production in quota-free locations like Saipan, a U.S. territory in the Mariana Islands. More recent waves of internationalization have been motivated by the domestic constraints of rising wages and worker shortages. The low-wage regions that have attracted the greatest number of South Korean companies are Latin America, and Southeast and South Asia. The preference of Korean firms for investment in Latin America (Guatemala, Honduras, the Dominican Republic, etc.) is stimulated by its proximity to the U.S. market and easy quota access. The pull of Asian nations such as Indonesia, Sri Lanka, and Bangladesh comes mainly from their wage rates, which are among the lowest in the world.

When Taiwanese firms moved offshore in the early 1980s, they also confronted binding quotas. While Taiwan's wages in the late 1970s and early 1980s were still relatively low, quota rents were high. Firms had to buy quotas (whose value in secondary markets fluctuated widely) in order to be able to expand exports, thereby causing a decrease in profitability for firms without sufficient quota (Appelbaum and Gereffi



Taiwan's textile and apparel exporters. Quota markets (the United States, the European Community, and Canada) accounted for over 50 percent of Taiwan's textile and apparel exports in the mid -1980s, but this ratio declined to 43 percent in 1988 and fell further to 35 percent in 1991. The United States, which had been Taiwan's largest export market for years, claimed one-quarter of Taiwan's textile and apparel exports in 1991, the European Community 8 percent, and Canada just 2 percent. The main non-quota markets, which absorbed nearly two-thirds of Taiwan's textile and apparel exports in the early 1990s, were Hong Kong (30 percent), Japan (6 percent), and Singapore (3 percent) (Khanna 1993: 29-30). Hong Kong, now Taiwan's leading export market, is mainly a conduit for shipping yarns, fabrics, and clothing to China for further processing and re-export.

## IV. Apparel Sourcing in North America

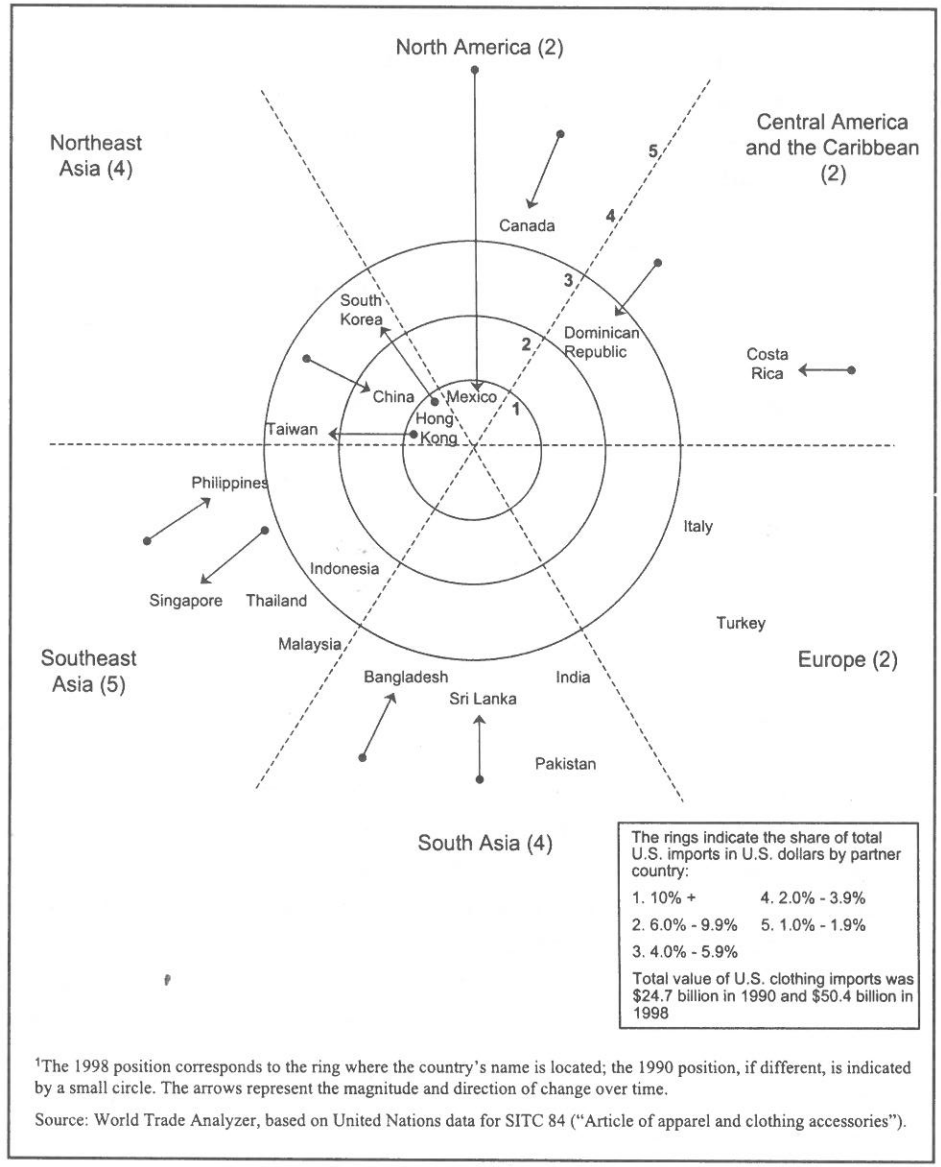
Our analysis of the apparel commodity chain in Asia suggests two main hypotheses for the future of the textile and apparel sector in North America. First, the relative decline of finished apparel exports from the East Asian NIEs is producing a "supply gap" in the North American apparel commodity chain. This is partly due to the greater geographical distances and logistical complexity involved in managing Asia's triangle manufacturing networks, as well as the tendency for more direct marketing in Asia as local manufacturers shift from OEM to OBM. Second, since Asian apparel supply to the United States has primarily been oriented to filling the OEM orders of U.S. retailers and branded marketers, apparel manufacturers in North America will need to develop the capability to carry out full-package supply. Previously this had only been done by the East Asia NIEs for the U.S. mass market, or in the fashion centers of Europe for high couture.

Between 1990 and 1998, U.S. apparel imports rose from $24.7 to $50.4 billion. Figure 2 is an import map that helps to identify trade shifts among the main suppliers to the U.S. apparel market. Those nations in the innermost circle each account for 10 percent or more of the total value of U.S. clothing imports in 1998, while each of those in the outer ring makes up only 1.0 - 1.9 percent of total imports. In other words, as we move from the inner rings to the outer ones in this import map, the

Several key aspects of the direction and magnitude of change in U.S. apparel trade are revealed in Figure 2. First, there are striking regional differences in the pattern of U.S. apparel imports. The NIEs in Northeast Asia are becoming much less important in U.S. apparel sourcing, South and Southeast Asia are growing slowly or not at all, and imports from China, Mexico, and to a lesser degree the Caribbean Basin are booming. Second, despite considerable mobility during the 1990s, there is a strong core-periphery pattern that dominates the geography of export activity in the U.S. apparel sourcing matrix. Only four economies (Hong Kong, South Korea, China, and Mexico) were core U.S. suppliers during the past decade, and only China and Mexico currently hold that distinction. There is a wide dispersion of 13 apparel suppliers in the outer two rings (indicating 1 percent to 4 percent shares of the U.S. apparel market), with just six nations in the inner three rings. Third, while for most countries the degree of change from 1990 to 1998 has been relatively modest (they changed their position by one ring or not at all), only Mexico has improved its position substantially, moving from outside the circle (less than 1 percent of U.S. apparel imports) in 1990 to the core (over 10 percent of U.S. imports) in less than a decade. Nonetheless, inward shifts of even one ring may be quite significant for smaller economies, given the substantial overall growth of U.S. apparel imports in the past decade.

However, a couple of important features of U.S. apparel sourcing are not revealed by this chart. First, there are two contending production systems reflected in U.S. apparel sourcing: export-processing assembly (production sharing) and full-package supply (OEM production). The countries that have penetrated the U.S. apparel market most deeply either have been experts at OEM supply (Hong Kong, Taiwan, and South Korea) or they are currently trying to develop full-package capabilities (China and Mexico). All of the other countries on this list are relegated to simple assembly. Second, different kinds of networks are involved in these export success stories, and these networks link the countries on this chart in different ways. We have already discussed the triangle manufacturing scheme in East Asia, but we still need to consider the networks relevant to the North American sourcing mix.






[1]The 1998 position corresponds to the ring where the country's name is located; the 1990 position, if different, is indicated by a small circle. The arrows represent the magnitude and direction of change over time.

Source: World Trade Analyzer, based on United Nations data for SITC 84 ("Article of apparel and clothing accessories").

**Figure 2 - Shifts in the Regional Structure of U.S. Apparel Imports from 1990 to 1998**

### *Production Sharing in Mexico and the Caribbean Basin*

If one envisions the complete apparel commodity chain as encompassing raw materials, natural and synthetic fibers, textiles, apparel, and the distribution of apparel to retailers (Appelbaum and

distinct. Mexico has several large, reasonably successful synthetic fiber companies, a multitude of export-oriented assembly firms that send apparel products to the United States using U.S. inputs, and an emergent retail sector that is fashioning a number of strategic alliances with their U.S. counterparts. The weakest link in the Mexican production chain has been the textile segment. The majority of Mexico's textile companies are undercapitalized, technologically backward and inefficient, and they produce goods of poor quality. By contrast, the United States is very strong in synthetic fibers, textiles, and retailing, but limited in its garment production capability, especially for women's and children's apparel. The Mexican apparel chain thus appears to be strongest where the U.S. chain is relatively weak: garment production.[8]

This picture becomes more complex if we expand the borders of North America to include Central America and the Caribbean.[9] Production sharing in Latin America is centered in Mexico and the Caribbean Basin because of this area's low wages and proximity to the U.S. market, where over 90 percent of their exports are sold. Virtually all of the production in the region is of a very low value-added nature, which is a direct result of U.S. policy. Under U.S. tariff schedule provision HTS 9802.00.80 (formerly clause 807), enterprises engaged in production sharing have an incentive to minimize locally purchased inputs because only U.S.-made components are exempt from import duties when the finished product is shipped back to the United States. This constitutes a major impediment to increasing the integration between the activities in the zones and the local economy, and it limits the usefulness of production sharing as a stepping stone to higher stages of industrialization.

From a regional perspective, Mexico competes for the U.S. market most directly with the Caribbean Basin Initiative (CBI) countries. By the early 1990s, EPZs had become a leading source of exports and manufacturing employment in various Caribbean nations. The Dominican Republic is a prime example. In the mid-1990s, there were 430 companies employing 164,000 workers in the country's 30 free-trade zones; three-quarters of the firms are involved in textiles and apparel (Burns, 1995: 39). In terms of employment, the Dominican Republic is the fourth largest EPZ economy in the world (the fifth if



China's Special Economic Zones are included). The Dominican Republic has an especially large dependence on EPZs, whose share of official manufacturing employment on the island increased from 23 percent in 1981 to 56 percent in 1989. By this latter year, EPZs also over 20 percent of the Dominican Republic's total foreign exchange earnings (Kaplinsky, 1993). U.S. investors account for more than half (54 percent) of the companies operating in the zones, followed by firms from the Dominican Republic itself (22 percent), South Korea (11 percent), and Taiwan (3 percent) (UNCTAD 1994: 90).

The rivalry among neighboring EPZs to offer transnational companies the lowest wages fosters a perverse strategy of "competitive devaluation," whereby currency depreciations are viewed as a means to increase international competitiveness (Kaplinsky, 1993). Export growth in the Dominican Republic's EPZs skyrocketed after a very sharp depreciation of its currency against the dollar in 1985; similarly, Mexico's export expansion was facilitated by recurrent devaluations of the Mexican peso, most notably in 1994-1995.[10] Devaluations heighten already substantial wage differences in the region. Hourly compensation rates for apparel workers in the early 1990s were $1.08 in Mexico, $0.88 in Costa Rica, $0.64 in the Dominican Republic, and $0.48 in Honduras, compared to $8.13 in the United States (ILO 1995: 35-36). Although it may make sense for a single country to devalue its currency in order to attract users of unskilled labor to their production sites, the advantages of this strategy evaporate quickly when other nations simultaneously engage in wage-depressing devaluations, which lower local standards of living while doing nothing to improve productivity.

### *Three Models of Competition in the North American Apparel Industry*

Three models of competition stand out in examining the current situation of the North American apparel sector and its prospects for change: the East Asian model, the Mexican model, and the Caribbean Basin model. It would be misleading, however, to think of these as inherently "national" or regional patterns. Rather, the success and limitations of East Asian, Mexican, and Caribbean Basin apparel producers are determined by two factors: their location (not nationality per se) and the transnational networks in which they are enmeshed

Ultimately, success in the contemporary global economy requires understanding how to use organizational networks to penetrate international markets. The three models of competition we have identified indeed use networks and markets quite differently.

The *East Asian model* is based on highly successful textile and apparel exporters from Hong Kong, Taiwan, and South Korea (preceded by Japan, and now followed by China) that have progressed through a sequence of export roles from assembly to OEM to OBM. The East Asian NIEs developed and refined their OEM capabilities in the 1960s and 1970s through establishing close ties with U.S. retailers and marketers, and then "learning by watching" in order to use these foreign partners as role models to build East Asia's export competence (Gereffi 1997). The performance trust built up through many successful business transactions with these U.S. buyers enabled suppliers in the East Asian NIEs to internationalize their OEM expertise via "triangle manufacturing" - i.e., the East Asian manufacturers became intermediaries between the U.S. buyers and hundreds of apparel factories in Asia and other developing regions in order to take advantage of lower labor costs and favorable quotas all around the world. The creation of these global sourcing networks helped the East Asian NIEs to sustain their international competitiveness when domestic economic conditions and quota constraints threatened the original, bilateral OEM relationships. Currently, the East Asian NIEs are moving beyond OEM in multiple ways: shifting to higher value "upstream" products in the apparel commodity chain (e.g., exports of textiles and fibers, rather than apparel); moving "downstream" from OEM to OBM in apparel; and switching to new commodity chains where the export success in apparel can be replicated.

The emerging *Mexican model* involves an ongoing transition from assembly to OEM (or full-package) production. The key factor in Mexico's shift has been NAFTA. The passage of NAFTA in 1994 began to remove the trade restrictions that virtually locked Mexico into an assembly role. The maquiladora system effectively conditioned Mexico's access to the U.S. market on the use of U.S. inputs. The progressive 10-year phase-in period for NAFTA allows one to see, step by step, how more and more of the apparel supply chain (such as cutting



tariff restrictions on each of these stages is eliminated. The East Asian NIEs did not employ the production-sharing provisions established by the 807/9802 U.S. trade regime in apparel because their great distance from the United States made U.S. textile inputs impractical. In addition, U.S. textile mills did not have the production capability or mentality to supply the diverse array of fabrics favored by the designers of women's wear and fashion-oriented apparel, which became the specialty of the East Asian exporters. Thus, both of these factors created an OEM niche for East Asian apparel companies that they adroitly exploited.

However, NAFTA does not guarantee Mexico's success. While the massive peso devaluations of 1994-1995 made Mexico very attractive as a production site for U.S. apparel manufacturers with international subcontracting operations, Mexico has traditionally lacked the infrastructure of related and supporting industries needed to do full-package production of garments. U.S. textile and apparel companies have been expanding their investments in Mexico at a rapid and accelerating pace (Gereffi 2000)

Thus Mexico is now better positioned to provide the quantity and quality of inputs needed for OEM production of standardized apparel items like jeans, knit shirts and trousers, and underwear. But Mexico is still lagging in the fashion-oriented, women's wear categories (Gereffi 2000: Tables 4-6). From a commodity chains perspective, the solution to the problem of how to complete the transition to full-package supply, and how to develop new production and marketing niches, is to forge linkages to the kinds of lead firms that can supply the needed resources and tutelage. In other words, Mexico needs to develop new and better networks in order to compete with East Asian suppliers for the U.S. full-package market.

U.S. firms have already shown a strong interest in transferring missing pieces of the North American apparel supply chain to Mexico. A real problem to be confronted, though, is who controls critical nodes of the chain and how to manage the dependency relationships this implies. Thus far, U.S. firms are in clear control of the design and marketing segments of the apparel chain, while Mexican companies are in a good position to maintain and coordinate the production networks in apparel

However, textile manufacturers in the United States, and to a lesser degree Mexico, are making strong bids to integrate a broad package of apparel services that would increase their leverage vis-‡-vis smaller garment contractors. For the foreseeable future, Mexico is likely to retain a mix of assembly plants linked to U.S. branded manufacturers and a new set of full-package producers linked to private-label retailers and marketers. As more of the critical apparel inputs become available in Mexico, U.S. inputs will decline and traditional Mexican assembly plants will be replaced by vertically integrated manufacturers or by clusters of related firms that compete through localized networks, such as the jeans producers in Torreon (Gereffi and Bair 1998).

The *Caribbean Basin model* is almost exclusively limited to EPZ assembly using the 807/9802 trade regime. Because the CBI economies did not receive "NAFTA parity" until October 2000, they encountered quota restrictions, higher tariffs, and more limited possibilities for vertical integration compared to Mexico. Nonetheless, the CBI economies have enjoyed considerable success within the export assembly role. They continue to expand their position in the U.S. apparel market, primarily through large assembly plants linked to the production-sharing operations of U.S. apparel transnationals (Gereffi 2000: Table 3). However, CBI exporters are losing ground to Mexican firms that can export similar goods to the United States more cheaply and quickly than their Central American and Caribbean counterparts. Our theory of industrial upgrading still requires the CBI economies to develop new networks with U.S. retailers and marketers if they are to acquire the skills and resources needed to move into the more diversified activities associated with full-package production.

Sustained competitiveness in the international apparel industry involves continual changes in economic roles and capabilities. New exporters are constantly entering the global supply chain, which is pushing the existing firms to cut costs, upgrade, or exit the market. There is a need to run faster to stay in place. To facilitate adjustment and indeed survival in a volatile, export-oriented sector such as apparel, industrial upgrading typically requires organizational linkages to the buyers and suppliers in developed country markets. Mexico is using networks with U.S. firms to try to occupy niches that previously have



been the stronghold of East Asian suppliers, and the CBI economies are trying to keep pace with Mexico. Sewing up the North American apparel market requires Mexico to learn from U.S. lead firms in the chain, and also to seize control of those opportunities that allow Mexico to expand its domestic and regional capabilities and options.

## V. European and Japanese Variations in Apparel Sourcing Networks

Outward-processing trade (OPT) in the European clothing sector is the practice by which companies export fabrics, or parts of garments, to be further processed in a third country and then re-import them as finished garments in an EU country.[11] OPT is analogous to the U.S. production sharing system (known as 807 or 9802 trade) and similar outward-processing arrangements that cover a portion Hong Kong's trade regime in apparel with mainland China. OPT, which has been regulated within the EU since 1982, is widely recognized as accelerating the process of delocalization, or the shift of apparel production to low-wage countries. Trade policy discourages textile firms from delocalization, however. If non-EU fabrics are used in OPT, they are penalized by a tariff of 14 percent levied on their re-imports. The level of tariff duties offsets the advantage of lower production costs.

The main lure of OPT is to reduce labor costs, which account for up to 60 percent of production costs in the clothing industry. In 1995, OPT accounted for 14 percent of total EU clothing imports. This is considerably less than the 80 to 90 percent of U.S. imports from Mexico and the Caribbean Basin countries that qualify as production sharing or 9802 trade. However, the extent of OPT trade is much more significant than this overall figure of 14 percent might indicate. More than 80 percent of OPT imports in clothing are concentrated in only four member states of the EU: Germany, Italy, France and the United Kingdom. The share of OPT in total clothing imports is highest in Germany (21 percent), followed by Italy (17 percent), France (7 percent), and the United Kingdom (5 percent) (OETH 1996: 51-52). By the year 2000, it is predicted that through a combination of OPT garments and imported apparel secured by large volume retailers, imports will account for 70 percent of EU apparel consumption (Dickerson 1995: 188).

For France, it is estimated that 80 percent of direct imports from North Africa, Southern Europe, and Eastern Europe qualify as forms of international subcontracting, even if locally produced fabric or fabric made in other non-EU countries is used. In the case of Germany, more than 90 percent of textile and clothing trade with Central and Eastern Europe also falls in the subcontracting category (Scheffer 1994: 17). Triangular trade is frequently employed in this type of international subcontracting. Thus, a German client may supply fabrics sourced in India for garments to be made up in Bangladesh, or Malaysian fabrics may be made up in Indonesia. As in the case of U.S. production sharing, European manufacturers are moving production offshore to neighboring countries in North Africa, Eastern and Central Europe, or countries in the former Soviet Union. This facilitates the flexibility of European retailers and manufacturers, but it does contribute to an integrated form of domestic production in the supplying nations. Since integrated apparel manufacturers are still stronger in Europe than in the United States, OPT is of greater importance for the EU than direct imports from Asian producers.

If we examine the regional pattern of Europe's apparel imports in the 1990s, we see a sourcing map that looks very similar in size and structure to that of the United States. Figure 3 shows the shifts in European apparel imports from 1990 to 1998.[12] The total value of European clothing imports was $24.6 billion in 1990 and $48.9 billion in 1998 - virtually identical to the values of U.S. apparel imports in the same years (see Figure 2). Among the Asian suppliers, only Hong Kong and China played central roles in 1998, with most of the Northeast and Southeast Asian economies losing European market share since 1990. However, three sets of additional countries now play prominent roles as apparel exporters to Europe: Turkey; Tunisia and Morocco in North Africa; and a spate of Eastern European economies plus the former Soviet Union.

All of these economies are geographically proximate to the European Union, but they have different kinds of capabilities. Turkey is a full-package supplier with a strong set of vertically integrated textile and apparel firms, whose strongest ties are to Germany. Tunisia and Morocco are outward-processing sites that mainly assemble apparel for



firms located in France and Italy. Eastern Europe and the former Soviet Union also do outward processing of apparel for EU buyers, but as relatively mature industrialized economies, they are reliable full-package suppliers for different types of apparel items. In addition, there probably is considerable interest among some of the more advanced East European apparel firms to embark on the transition from OEM to OBM production.

A closer look at the world's leading apparel exporters in the 1980s and 1990s reveals both a broadening and deepening of global sourcing networks. If we take $1 billion of apparel exports as a threshold for major players in the global industry, Table 2 shows a striking stair-step pattern of market entry. In 1980, only Hong Kong, South Korea, Taiwan, China, and the United States were major global apparel exporters. By 1990, Indonesia, Thailand, and Malaysia in Southeast Asia were added to the list, along with India and Pakistan in South Asia, and Tunisia in North Africa. The largest apparel newcomer in 1990 was Turkey, whose total of $3.4 billion in clothing exports placed in fifth in the world behind only the four Northeast Asian powerhouses. In 1998, new members of the billion-dollar club of apparel exporters included the Philippines and Vietnam in Southeast Asia, Bangladesh and Sri Lanka in South Asia, Morocco and Mauritius in Africa, and four nations from Eastern Europe. Mexico had a meteoric rise from less than $0.1 billion in 1990 to $7 billion eight years later. The top four apparel exporters in 1998 were China ($31.4 billion), Hong Kong ($22.4 billion), Turkey ($7.3 billion), and Mexico ($7.0 billion).

Notwithstanding these high absolute levels of apparel shipments, the world's 25 leading apparel suppliers vary widely in the relative importance of apparel as an export item. The countries most reliant on apparel exports are Bangladesh (75 percent), Mauritius (57 percent), and Sri Lanka (52 percent). However, in the Dominican Republic and Tunisia, apparel represents more than 40 percent of total national exports, and clothing accounts for between a third and a quarter of all exports in Morocco, Turkey and Romania (see Table 2).

| Region/Country | Population (millions) | GNP (US$ billions) | GNP/capita (US$) | Total national exports (US$ billions) | | | Apparel exports to the world market (US$ billions) | | | Apparel as % of total national exports | | | Hourly apparel labor costs (wages & fringe benefits) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1998[a] | 1998[a] | 1998[a] | 1980[b] | 1990[b] | 1998[b] | 1980[b] | 1990[b] | 1998[b] | 1980[b] | 1990[b] | 1998[b] | US$, 1998[c] |
| **Northeast Asia** | | | | | | | | | | | | | |
| China | 1,239 | 924 | 750 | 19 | 65 | 191 | 1.7 | 10.2 | 31.4 | 8.6 | 15.7 | 16.4 | 0.43 |
| Hong Kong | 7 | 158 | 23,660 | 21 | 84 | 176 | 5.3 | 15.7 | 22.4 | 25.4 | 18.7 | 12.7 | 5.20 |
| South Korea | 46 | 399 | 8,600 | 18 | 66 | 140 | 3.1 | 8.3 | 4.8 | 17.0 | 12.4 | 3.4 | 2.69 |
| Taiwan | 22[d] | 285[d] | 13,200[d] | 21 | 71 | 135 | 2.6 | 4.2 | 3.4 | 12.3 | 5.8 | 2.5 | 4.68 |
| **Southeast Asia** | | | | | | | | | | | | | |
| Indonesia | 204 | 131 | 640 | 24 | 28 | 52 | 0.6 | 2.9 | 4.5 | 2.4 | 10.3 | 8.6 | 0.16 |
| Thailand | 61 | 132 | 2,160 | 7 | 24 | 62 | 0.3 | 2.9 | 3.4 | 4.2 | 12.2 | 5.5 | 0.78 |
| Malaysia | 22 | 81 | 3,670 | 14 | 31 | 75 | 0.2 | 1.4 | 2.4 | 1.2 | 4.5 | 3.2 | 1.30 |
| Philippines | 75 | 79 | 1,050 | 6 | 8 | 30 | 0.3 | 0.7 | 2.4 | 4.9 | 8.4 | 8.0 | 0.76 |
| Vietnam | 77 | 27 | 350 | 0 | 1 | 9 | 0.01 | 0.1 | 1.3 | 7.3 | 5.0 | 14.7 | 0.22 |
| **South Asia** | | | | | | | | | | | | | |
| India | 980 | 427 | 440 | 8 | 19 | 41 | 0.6 | 2.6 | 4.8 | 7.9 | 14.2 | 11.9 | 0.39 |
| Bangladesh | 126 | 44 | 350 | 1 | 1 | 5 | 0.0 | 0.6 | 3.9 | 0.2 | 42.0 | 75.0 | 0.30 |
| Sri Lanka | 19 | 15 | 810 | 1 | 2 | 4 | 0.1 | 0.7 | 2.3 | 10.5 | 33.9 | 51.8 | 0.44 |
| Pakistan | 132 | 61 | 470 | 3 | 6 | 9 | 0.1 | 1.1 | 2.0 | 4.2 | 18.5 | 22.6 | 0.24 |
| **Central and Eastern Europe** | | | | | | | | | | | | | |
| Turkey | 63 | 201 | 3,160 | 3 | 13 | 28 | 0.1 | 3.4 | 7.3 | 4.6 | 25.9 | 26.3 | 1.84 |
| Poland | 39 | 151 | 3,910 | 15 | 12 | 29 | 0.6 | 0.4 | 2.5 | 4.2 | 3.0 | 8.5 | 2.77 |
| Romania | 23 | 31 | 1,360 | 12 | 6 | 9 | 0.4 | 0.4 | 2.1 | 3.1 | 7.6 | 24.0 | 1.04 |
| Hungary | 10 | 46 | 4,510 | 9 | 10 | 24 | 0.3 | 0.4 | 1.3 | 4.0 | 3.8 | 5.5 | 2.12 |
| Czech Republic | 10 | 53 | 5,150 | 12 | 7 | 40 | 0.4 | 0.3 | 1.3 | 3.3 | 3.5 | 3.2 | 1.85 |
| **Africa** | | | | | | | | | | | | | |
| Tunisia | 9 | 19 | 2,060 | 2 | 3 | 6 | 0.3 | 1.1 | 2.6 | 15.7 | 32.9 | 43.7 | 0.98[e] |
| Mauritius | 1 | 4 | 3,730 | 0 | 1 | 2 | 0.1 | 0.6 | 1.0 | 17.2 | 50.9 | 57.4 | 1.03 |
| Morocco | 28 | 34 | 1,240 | 2 | 4 | 8 | 0.1 | 0.7 | 2.6 | 4.6 | 17.2 | 33.5 | 1.36 |
| **Caribbean Basin** | | | | | | | | | | | | | |
| Dominican Rep. | 8 | 15 | 1,770 | 1 | 2 | 5 | 0.0 | 0.8 | 2.4 | 0.0 | 35.7 | 48.0 | 1.48 |
| Costa Rica | 4 | 10 | 2,770 | 1 | 2 | 6 | 0.02 | 0.1 | 0.7 | 1.9 | 3.7 | 12.2 | 2.52 |
| **North America** | | | | | | | | | | | | | |
| United States | 270 | 7,903 | 29,240 | 240 | 418 | 727 | 1.3 | 2.7 | 9.4 | 0.1 | 0.6 | 1.3 | 10.12 |
| Mexico | 96 | 368 | 3,840 | 16 | 29 | 125 | 0.1 | 0.1 | 7.0 | 0.3 | 0.4 | 5.6 | 1.51 |
| **World Totals** | 5,897 | 28,835 | 4,890 | 2,014 | 3,471 | 5,692 | 39.6 | 110.6 | 198.3 | 2.0 | 3.2 | 3.5 | na |

[a]World Bank, *World Development Report 1998/99* (New York, Oxford University Press, 1999), pp. 190-191.
[b]World Trade Analyzer, based on United Nations trade data. Apparel is defined as SITC 84.
[c]Werner International, Inc.
[d]1997 data from *Taiwan Statistical Data Book 1999*, Council for Economic Planning and Development, Republic of China.
[e]1996.

**Table 2 - World's 25 Leading Apparel Exporters, 1980 - 1998**

Table 3 provides information on whether apparel has risen or fallen in rank among the leading export items (measured at the two-digit SITC level) of the world's 25 biggest apparel exporters. In Northeast and Southeast Asia, apparel tends to have declined in relative importance, except in China where it remains the top export item. However, in South Asia, Africa, the Caribbean Basin, and Central and Eastern Europe, apparel tends to be the leading export product, and frequently it has held that status for a decade or more.

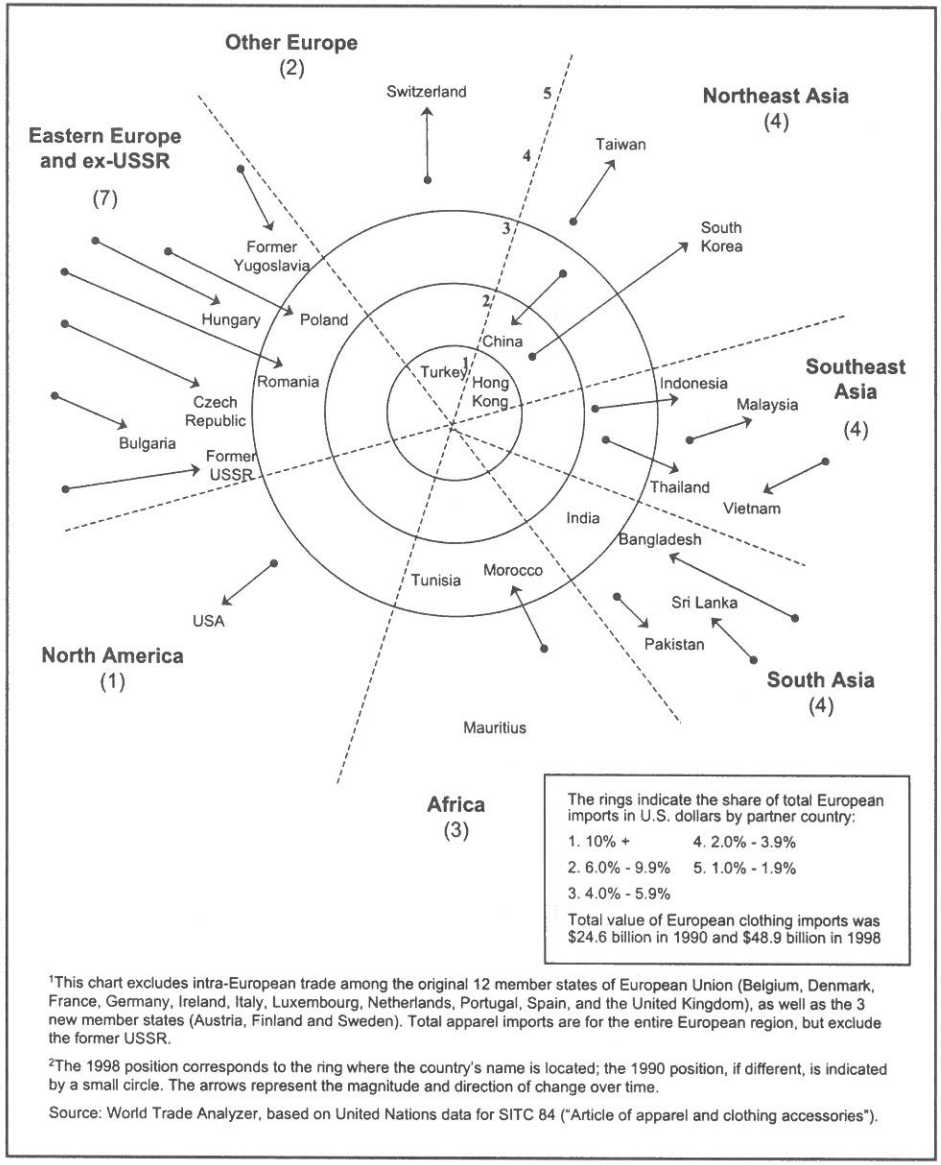


| Exporting Country | Top export item, 1998 | | | | Apparel Rank[b] | | | Trends in apparel ranking | |
|---|---|---|---|---|---|---|---|---|---|
| | SITC[a] | Description | US$ billions | % of total exports | 1980 | 1990 | 1998 | 1980-90 | 1990-98 |
| **Northeast Asia** | | | | | | | | | |
| China | 84 | Apparel | 31.3 | 16 | 4 | 1 | 1 | Up | Same |
| Hong Kong | 89 | Misc. manufactures | 22.8 | 13 | 1 | 1 | 2 | Same | Down |
| South Korea | 77 | Electrical machinery | 25.0 | 18 | 1 | 1 | 9 | Same | Down |
| Taiwan | 75 | Office machines | 25.1 | 19 | 1 | 5 | 9 | Down | Down |
| **Southeast Asia** | | | | | | | | | |
| Indonesia | 33 | Petroleum | 4.4 | 8 | 6 | 4 | 4 | Up | Same |
| Thailand | 75 | Office machines | 9.2 | 15 | 8 | 1 | 4 | Up | Down |
| Malaysia | 77 | Electrical machinery | 18.7 | 25 | 9 | 6 | 6 | Up | Same |
| Philippines | 77 | Electrical machinery | 15.1 | 50 | 6 | 1 | 4 | Up | Down |
| Vietnam | 85 | Footwear | 1.6 | 17 | 4 | 5 | 3 | Down | Up |
| **South Asia** | | | | | | | | | |
| India | 66 | Non-metallic mineral mfg | 5.3 | 13 | 4 | 2 | 3 | Up | Down |
| Bangladesh | 84 | Apparel | 3.9 | 75 | 13 | 1 | 1 | Up | Same |
| Sri Lanka | 84 | Apparel | 2.3 | 52 | 4 | 1 | 1 | Up | Same |
| Pakistan | 65 | Textile yarn & fabrics | 4.4 | 51 | 4 | 2 | 2 | Up | Same |
| **Central and Eastern Europe** | | | | | | | | | |
| Turkey | 84 | Apparel | 7.3 | 26 | 6 | 1 | 1 | Up | Same |
| Poland | 84 | Apparel | 2.5 | 8 | 6 | 10 | 1 | Down | Up |
| Romania | 84 | Apparel | 2.1 | 24 | 3 | 4 | 1 | Down | Up |
| Hungary | 71 | Power generating equip. | 2.9 | 12 | 8 | 9 | 4 | Down | Up |
| Czech Republic | 78 | Road vehicles | 6.0 | 15 | 10 | 7 | 7 | Up | Same |
| **Africa** | | | | | | | | | |
| Tunisia | 84 | Apparel | 2.6 | 44 | 2 | 1 | 1 | Up | Same |
| Mauritius | 84 | Apparel | 1.0 | 57 | 2 | 1 | 1 | Up | Same |
| Morocco | 84 | Apparel | 2.6 | 33 | 7 | 1 | 1 | Up | Same |
| **Caribbean Basin** | | | | | | | | | |
| Dominican Rep. | 84 | Apparel | 2.4 | 46 | 34 | 1 | 1 | Up | Same |
| Costa Rica | 05 | Vegetables & fruit | 1.1 | 20 | 9 | 7 | 3 | Up | Up |
| **North America** | | | | | | | | | |
| United States | 77 | Electrical machinery | 79.4 | 11 | 38 | 37 | 19 | Up | Up |
| Mexico | 78 | Road vehicles | 20.8 | 17 | 27 | 35 | 6 | Down | Up |
| **World Totals** | 78 | Road vehicles | 524.0 | 9 | 15 | 9 | 8 | Up | Up |

[a]SITC refers to Standard International Trade Classification categories.
[b]Rankings are based on the position of apparel in each economy's total world exports, using two-digit SITC categories

Source: World Trade Analyzer, based on United Nations trade data.

**Table 3 - Position of Apparel Among Leading Export Items, 1980-1998**



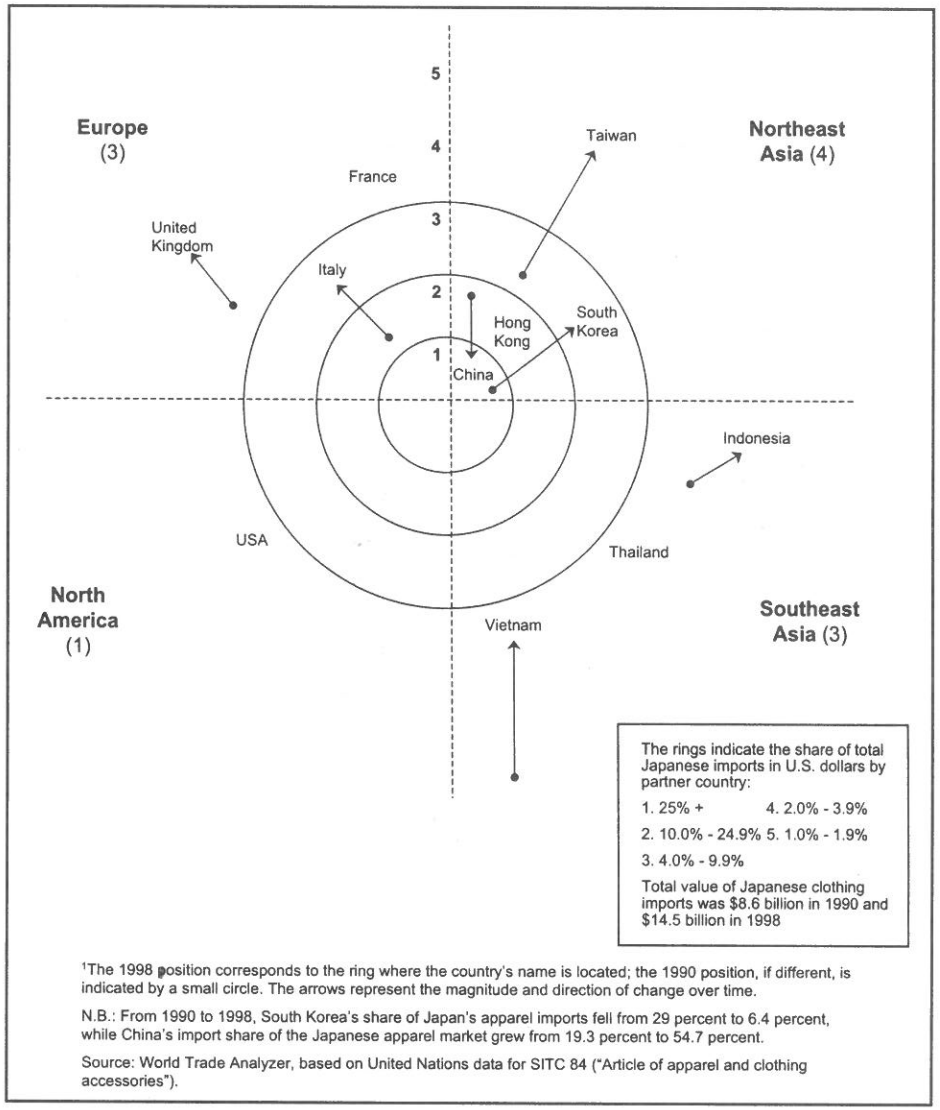

[1]This chart excludes intra-European trade among the original 12 member states of European Union (Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom), as well as the 3 new member states (Austria, Finland and Sweden). Total apparel imports are for the entire European region, but exclude the former USSR.

[2]The 1998 position corresponds to the ring where the country's name is located; the 1990 position, if different, is indicated by a small circle. The arrows represent the magnitude and direction of change over time.

Source: World Trade Analyzer, based on United Nations data for SITC 84 ("Article of apparel and clothing accessories").

**Figure 3 - Shifts in the Regional Structure of European Apparel Imports from 1990 to 1998**






[1]The 1998 position corresponds to the ring where the country's name is located; the 1990 position, if different, is indicated by a small circle. The arrows represent the magnitude and direction of change over time.

N.B.: From 1990 to 1998, South Korea's share of Japan's apparel imports fell from 29 percent to 6.4 percent, while China's import share of the Japanese apparel market grew from 19.3 percent to 54.7 percent.

Source: World Trade Analyzer, based on United Nations data for SITC 84 ("Article of apparel and clothing accessories").

**Figure 4 - Shifts in the Regional Structure of Japanese Apparel Import from 1990 to 1998**

The apparel import maps for the United States and Europe contrast sharply, however, with that of Japan (see Figure 4). Unlike the relatively dense networks of 20-25 major apparel suppliers we saw in Figures 2 and 3, only 11 countries had at least a 1 percent share of the Japanese market in either 1990 or 1998. However, even this is deceiving because only three countries have played major roles as apparel suppliers to Japan. In 1990, South Korea was the leader with 29 percent of Japan's apparel imports, but by 1998 it had just over 6 percent of the market. Although Hong Kong had nearly 12 percent of Japanese apparel imports in 1998, the big winner was China, whose import share soared from 19 percent to 55 percent between 1990 and 1998. Why is the Japanese apparel sourcing structure so different than that found in the United States and Europe? The answer lies with the MFA system that has prevailed from the early 1970s through the mid-1990s in the multilateral trade regime. Japan does not employ the apparel and textile quotas permitted by the Multifiber Arrangement under the General Agreement on Tariffs and Trade. However, when the World Trade Organization was established in 1995, it was agreed that the MFA preference scheme would be eliminated by 2005. Thus, China's dominance in Japan's apparel exports may be showing the rest of the world what the future will look like when MFA is phased out in several more years.

## VI. Conclusions

This report uses the global commodity chains framework to explain the transformations in production, trade and corporate strategies that have altered the global apparel industry over the past decades and changed the prospects for developing countries to enter and move up these chains. The apparel industry is identified as a buyer-driven commodity chain that contains three types of lead firms: retailers, marketers and branded manufacturers. As apparel production has become globally dispersed and competition between these firms has intensified, each type of lead firm has developed extensive global sourcing capabilities. While "de-verticalizing" 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 and opportunities within the



Industrial upgrading in the global apparel industry is primarily associated with the shift from assembly to full-package production. Compared with the mere assembly of imported inputs, full-package production fundamentally changes the relationship between buyer and supplier in a direction that gives far more autonomy and learning potential for industrial upgrading to the supplying firm. Full-package production is needed because the retailers and marketers that order the garments do not know how to make them. Particular places such as the East Asian NIEs of Hong Kong, Taiwan, South Korea, and the People's Republic of China have used the full-package role to create an enduring edge in export-oriented development. However, the North American Free Trade Agreement between the United States and Mexico, along with a relative decline in the importance of East Asian apparel exports to the United States, has now created favorable conditions for the extension of full-package production to the North American setting. Prominent apparel suppliers to Europe such as Turkey and several East European economies also appear to be adopting the full-package model.

Three patterns or models of competition are evident in the North American market: the East Asian, Mexican, and Caribbean Basin models. Each model presents different perspectives and challenges for industrial upgrading. The United States continues to define the terms of change, and US firms lead the process toward mass customization and agile manufacturing. Mexico needs to develop new and better networks in order to compete with East Asian suppliers for the US full-package market. The Caribbean Basin model, almost exclusively limited to assembly, would have to develop networks with US retailers and marketers if they are to acquire the skills and resources needed to move into the more diversified activities associated with full-package production. The Mexican and Caribbean experiences can be generalized as "full package" and "assembly" models applicable to other regional contexts.

There has been a dramatic consolidation of the retailer segment of buyer-driven commodity chains in the United States, and a growth in the strength of retailers versus apparel manufacturers in the European Union and Japan as well. While retailing and marketing is becoming more concentrated, manufacturing is splintering. To a certain degree, this trend is propelled by the information revolution that is permitting retailers to

have far better day-to-day market information about consumer purchasing decisions. This allows the retailers to demand more from their suppliers in terms of inventory management, quick response, more frequent deliveries, etc. As retailers develop their own private label collections, they also change the competitive dynamics of the textile and apparel supply chain, since they become competitors (rather than customers) of traditional apparel manufacturers and designers. Finally, retailers are pushing globalization in a direct way as importers, and by demanding lower prices from manufacturers which in turn forces them to go overseas. Because they themselves do not have production experience, however, the retailers in buyer-driven chains are dependent upon the suppliers in their global sourcing networks. In Asia, a number of these manufacturers are integrating forward from specification contracting (the OEM or "full package" role) to developing and selling their own brands (the OBM role). In North America, U.S. textile companies are forming production clusters with local apparel firms in Mexico to assure themselves of a customer base. Thus growing concentration at the retail end of the apparel commodity chain is generating networks of collaborators as well as competitors in the upstream segments of the chain.

How does the control structure of commodity chains affect industrial upgrading in developing nations? First, our comparison of apparel imports to the United States and the European Union reveals distinct regional patterns of sourcing. While both the United States and the European Union source heavily out of Asia, they each have nearby sourcing bases as well: Mexico, Central America, and the Caribbean for the United States, and Eastern-Central Europe and North Africa for the European Union. More importantly, these different regional supply bases for apparel are organized in terms of different kinds of networks. The Asian sourcing is done on the basis of direct imports and specification contracting, while the Caribbean Basin and Mediterranean Basin sourcing patterns both utilize forms of international subcontracting where U.S. and EU textiles are sent to nearby low-wage countries for assembly into garments. The controlling agents in these two networks are different: they are retailers and designers in the Asian trade, and textile and apparel manufacturers for outward processing trade. The possibilities for integrated local industrial development are greater in the OEM model



where Asian manufacturers have developed an important form of social capital in the guise of the multifaceted and dense networks utilized to offer "full-package" supply. In the outward-processing or production-sharing pattern, the production networks are much thinner in the supplying countries. One of the most interesting emerging responses is making a bid to emulate the OEM model of the East Asian NIEs by constructing networks involving U.S. textile firms, Mexican apparel companies, and U.S. retailers. This requires supportive policies at both the macroeconomic level (participation in NAFTA), as well as capable Mexican firms that are able to anchor global production and sourcing networks within the full-package model.

## Notes

1. Paper prepared from an original UNIDO report undertaken by the author.

2. Throughout this paper, OEM production, specification contracting and full-package supply will be used as broadly synonymous terms. In addition, assembly, production sharing, and outward processing refer to similar processes, even though a specific term may be favored in a particular region.

3 Although organizational and relational rents are closely related, they differ in that the former is intra-organizational, and the latter is inter-plant, inter-firm and inter-institutional (e.g. research institutes or training programs with public-private sector support). The rent element arises from the fact that all these organizational features are tacit, cumulative and systemic. Adoption is a matter of degree. Some economies and firms are better at utilizing these techniques than others, giving rise to uneven diffusion and consequently to scarcity and rent (Kaplinsky 1998).

4. Dayton Hudson Corporation owns Target, Mervyn's Dayton's, Hudsons's and Marshall Field.

5. These figures do not include the production-sharing activities of U.S. apparel firms in Mexico and in the Caribbean Basin, which also have been expanding very rapidly (USITC, 1997).

6 In a survey of approximately 100 South Korean export firms carried out in 1976, more than two-thirds reported that some or all of their exports to foreign markets consisted of their own brand name products (Rhee et al 1984: 123).

7 In the apparel sector, the activities associated with OEM production that tended to remain in the NIEs were jobs such as product design, sample making, quality control, packing, warehousing, transportation, quota transactions, and local financing through letters of credit. These provided relatively high gross margins or profits.

8 Empirical support for this argument is provided in OTA (1992: chapter 9) and Gereffi (1997).

9 Canada is a niche player in the North American apparel sector. Canada's considerable textile strengths are oriented to the home furnishings market (upholstery, rugs, and curtains). Within apparel, Canada's main export niche to the United States is wool suits.

10 Of course, export growth is not the only, nor even the major, reason for Mexico's peso devaluation. Nonetheless, it can have the effect of stimulating "competitive devaluations" in CBI countries.

11 When foreign production or sourcing does not involve the temporary export of fabrics, then importation occurs under a regime of "direct imports."

12 Figure 3 exclude intra-European apparel trade among the original 12 member states of the European Union, as well as the three new member states (Austria, Finland and Sweden).



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