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Can Fast Fashion Save the U.S. Apparel Industry?*

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Abstract

The U.S apparel industry employed over 1 million workers as late as 1980, but today employs only about a third that number. The common explanation for this collapse is the delocalization of production to low wage countries, but this neglects advantages of speed, flexibility, and proximity to centers of fashion and design that have helped some suppliers in high wage countries, such as Italy, to defend niche markets for fashionable products. This paper examines the question of why the U.S. apparel industry has failed to tap these advantages. Based upon analysis of both national data and original field research in the New York garment industry, it argues that the U.S. industry has relied too long on an industry model based on “mass fashion” products, the scale and scope economies of large-scale suppliers and mass retailers, and innovations in information technologies as sources of competitiveness, while ignoring the importance of niche product innovation, small-scale supply chains and flexible retailing, and “collaboration economies” in design and production networks. Even in New York City, where small-firms and fashion markets are important, the dominance of the large-scale, mass-fashion model has inhibited contractors from developing highly productive and entrepreneurial supply networks that combine design with manufacturing and take full advantages of their potential for speed, flexibility, and quality production.

Keywords:

L22 - Firm Organization and Market Structure: Markets vs. Hierarchies; Vertical Integration; Conglomerates

L23 - Organization of Production

L24 - Contracting Out; Joint Ventures

L25 - Firm Performance: Size, Age, Profit, and Sales

L67 - Other Consumer Nondurables: Clothing, Textiles, Shoes, and Leather

Comparative advantage seems to have doomed the U.S. apparel industry. Apparel is a labor-intensive industry where capital per employee is relatively low, only 14% of the average for U.S. manufacturing (Murray; 1995; Rothstein, 1989), and most production jobs (90%) are unskilled or semi-skilled (Mittelhauser, 1997). With hourly compensation in China's apparel industry of less than \$1 and only about \$2.50 in Mexico's apparel industry, the U.S. is at a substantial disadvantage in production costs (USITC, 2004). Since the average U.S. apparel factory has only 27 employees and relies heavily on traditional technology, the industry lacks the substantial scale economies and the new production techniques that have sometimes sheltered other mature industries from global competition (Helpman and Krugman, 1985; Dertouzos, et al., 1989). It is, therefore, not surprising that imports from labor abundant countries have risen steadily since the mid-1970s and that apparel import penetration ratios have reached 71% by value and 80% by volume (AAMA, Focus, 2002). The apparel industry, which once accounted for almost one in ten manufacturing jobs and employed over 1 million workers as last as 1980, currently employs about a third that number (see Table 1) and further decline in output of over 8% is predicted once quota restrictions on imports are phased out by 2005 Terra, 2001, cited in USITC, 2004).

However, comparative advantage in apparel manufacturing does not depend exclusively on labor costs and the U.S. apparel industry has some offsetting advantages -- lower transportation costs, faster supply times, greater proximity to centers of fashion and design, and a greater ability to respond quickly to changing market demand. These are qualities that some high wage countries have successfully exploited in defending their domestic markets against imports

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and, in the case of Italy, maintaining a positive trade balance in apparel. This paper examines why the U.S. apparel industry has not aggressively pursued the full advantages of speed and access to centers of product innovation. Based on new field research findings on the New York garment district (see Data Appendix), it argues that halting the further loss of markets and jobs will depend on new types of product development for high-end niche markets, the efficiency advantages of small apparel firms, tapping potential scale and scope economies of small-firm networks, and changes in the organizational relationships between supply chains and retailers.

The Structure and Organization of Apparel Supply Chains

The structure of apparel supply chains is critical to understanding how the U.S. apparel industry has responded to global competition and why it has taken so long to develop effective alternatives to traditional comparative advantage. Because of its lack of scale economies and continued reliance on traditional sewing technologies, apparel manufacturing has always been the weakest link in the apparel supply chain. Textile manufacturing is capital intensive and highly automated with about 70% of employment being in large (500+) establishments (Census of Manufactures, 1997). While apparel retailing is not as capital intensive as textiles and establishment size is relatively low, retailing has also become much more concentrated in large retail chains, which have been active adopters of new information technologies and active organizers of new supply chain relationships.

In contrast, the average size of apparel firms is relatively small, and has been falling. Apart from relatively capital-intensive products, such as hosiery and knitwear, and apparel products that lend themselves to mass production (such as men's slacks and jeans), small and medium-size firms dominate the industry and have been gaining in their share of employment (Tables 2, 3, & 4). Almost half of all apparel employment is in establishments with fewer than 100 workers (2001) and the average size of establishment has fallen from 58 in 1980 to 27 (2001). Except for pre-production activities (computer-aided design and layout of parts, computer-aided manufacturing of patterns) and cutting (automated mechanical knives and lasers), the basic manufacturing technology in these firms has changed little since the 19th century.

Organizational Relationships

The organizational relationships within apparel supply chains are shaped by considerations of market power and control of innovation, as well as efficiency. Except for

sectors such as knitwear and hosiery where fabric and garment production are vertically integrated and haute couture boutiques and a few specialty store chains, there are very few vertical organizational relationships in U.S. apparel supply chains. However, the market power in upstream textiles has been used to reinforce scale economies in fabric manufacturing by imposing large minimum orders and slow delivery times on apparel manufacturing and downstream retailing has used its market power to define supply chain relationships with apparel manufacturers and to siphon off profits from innovations introduced by apparel firms (Abernathy, et al., 1999).

Organizational relationships *within* the apparel industry are even more complex. Manufacturers can contract all or part of the production process to smaller contractors and there are intermediaries (known as jobbers) that buy and cut fabric, contract for clothing assembly, and sometimes design clothing (Teper, 1937, p. 6). Manufacturers use the contracting process to stabilize their own production and to meet peak demand, relying on jobbers to invest in fabric and manage contracting. Because they have little capital, no design capability, and experience volatile demand and chronic excess capacity, contractors have the least market power in the entire supply chain. This imbalance in market power in New York City, for example, results in contractors participating in extremely dependent and hierarchical relationships with manufacturers and jobbers, in contrast to the collaborative networks that are often found in France and Italy (Courault, 2000; Bigarelli, 2000; Crestanello and Dalla Libera, 2003; Bigarelli and Crestanello, 2004).

Product Differentiation and Supply Chain Structure

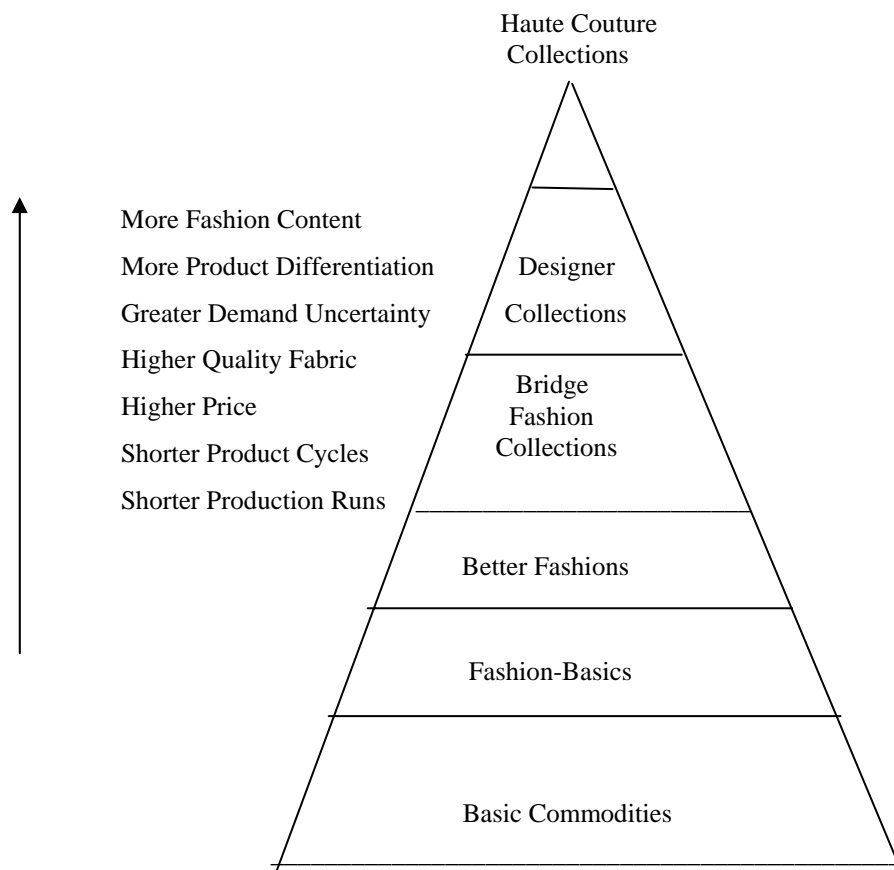
Apparel products are typically classified into broad categories, such as basic commodity products (knit underwear and socks), fashion-basic products (dress shirts, casual slacks, and knit sportswear), “better” fashion (moderately priced dresses and suits), “bridge” fashions (higher-priced ready-to-wear fashion products), designer collections (high quality and expensive ready-to-wear fashion products) and custom-made haute couture (Abernathy, et al., 1999). These fashion categories are often portrayed in a “fashion pyramid” in which products are arrayed according to factors such as fashion content, length of product life cycle, quality, and price (see Figure 1).

The structure and organizational relationship within supply chains varies by type of product within the fashion pyramid. Fashion-basic and commodity products are marketed

through a wide range of retailers, but particularly by mass merchandisers (like Wal-Mart), variety stores (like J.C. Penney), and specialty chains (like the Gap). These products are mass-designed by large manufacturers and retailers, mass produced largely by offshore suppliers, and priced to serve mass markets.

Figure 1

The Fashion Pyramid



As products move up the fashion pyramid from commodity and fashion basics to designer and *haute couture* collections, designs and fabric become more differentiated, markets become smaller and more specialized, and demand is less and less sensitive to price. These products are sold through a wider range of retail outlets -- department stores, high-end specialty chains, and fashion boutiques. It is at this stage that the domestic jobber-contractor system becomes more involved in the supply chain. For example, haute couture fashion designers, such

as Donna Karan or Yves St. Laurent, select the fabrics and create the designs for coordinated collections that are manufactured in small quantities in their own “craft workshops”, and typically sold in designers’ showrooms and independent fashion boutiques. Haute couture designers may also develop less expensive second and third tier collections that are assembled by small and medium sized contractors, or supplied by large manufacturers under contract and licensing arrangements, and that are sold through department stores.

Product Calendars and Cycles

Different types of products also have distinctive product calendars and product cycles. The traditional fashion production calendar begins a year in advance of the spring/summer and fall/winter seasons. Apart from haute couture where product development times are variable, roughly 3-4 months are devoted to design, 2-3 months for getting fabric and making samples, 2-3 months for marketing and receiving orders, and 2-3 months for production. The product life for haute couture, designer collections, and bridge and better fashions has traditionally been one season with fashion-basic products following a similar development cycle, but with a product life cycle of two to three years. Commodity apparel products have an indefinite design life and remain in production for several years with relatively little seasonal variation.

Trends in fashion preferences among consumers are, therefore, a key element in defining the mix of supply chain structures over time. When fashionable products are in vogue, manufacturers and contractors are the main suppliers, there is less mass production and department and specialty stores are the more prominent retail outlets. Casual clothing is more readily manufactured by mass production methods and can be more efficiently sold through mass market retailers.

Efficiency, Speed, and Flexibility

Product differentiation and market size control the efficiency tradeoff between flexible and inflexible production techniques and the speed with which a product can be produced. For example, mass production can theoretically achieve the lowest unit costs, but its efficiency depends on large orders and it requires long production times and is too inflexible for products where demand is volatile or time-sensitive. The most efficient mass production technique is the “progressive bundle system” (PBS), which was developed during World War II when product variety was severely limited (Disher, 1947, p. 5). It is based on such extreme specialization and division of labor that any single task takes only seconds to perform and the total labor content of

a garment is measured in minutes. However, so many tasks are needed to assemble parts into complete garments and it is so difficult to balance workflow along the assembly line, that production is slow and inflexible. A pair of pants requiring 40 operations can take 40 days to move through the assembly line, even though the average direct labor time is only about 24 minutes (Dunlop and Weil, 1996, pp. 337-338), and typical lead times for manufacturing and shipping range from 2 to 2½ months (Abernathy et al., 1999).

Such slow and inflexible mass production requires retailers to select styles and place orders far in advance of the start of each season, long before consumer demand can be predicted with much accuracy, and it precludes mid-season orders. This means that initial orders have to be large enough to meet an entire season's demand and that retailers have to carry large inventories and absorb demand uncertainty through end-of-season markdowns (Disher, 1947, pp. 3-4).

Conversely, efficiency in small production runs requires far less specialized labor. Each job involves a wider range of skills, takes longer to perform, and workers may also work in teams, but the entire process is faster and more flexible. In the extreme case, a single skilled worker assembles an entire garment.

The Rise and Fall of the American Supply Chain Model

Prior to World War II, U.S. apparel supply chains resembled those of Europe. Fashion products were quickly and flexibly produced by craft shops and by relatively small manufacturers and contractors, following a seasonal product cycle. Less fashionable women's and men's wear lent themselves to slow and inflexible mass production in larger manufacturing units with less use of contractors.

The introduction of the PBS system during World War II and the growth of mass retailing, however, shifted production towards large manufacturers in the early post-war period by virtue of their control over branded product designs and their ability to supply large quantities of product at relatively low prices. Large domestic manufacturers subsequently lost market control to large retailers who established their own product design and innovation capabilities to compete against manufacturers' brands in the mid-1970s.

Once retailers controlled product design, they were able to substitute imported products, carrying their own house brands, for those produced by domestic manufacturers. While offshore supply chains were even slower and less flexible than those of large-scale U.S. suppliers, the far

lower costs of imports more than offset these inefficiencies. As a result, mass retailers who sourced offshore grew in size and gained market share at the expense of domestic manufacturers and contractors. Large chains increasingly dominated U.S. clothing retailing as traditional retailers consolidated and a new generation of mass retailers of fashion-basic products -- low cost merchandisers like Wal-Mart and new specialty chains such as the Gap and the Limited -- entered the industry (Berg, et. al., 1996, p. 358; Abernathy et al., 1999). The four largest department store chains, for example, accounted for about two-thirds of department store sales in 2002, up from 39% in 1972, and the corresponding figures for women's specialty shops are 30% and 11%. The four largest mass merchandisers, such as Wal-Mart and Target, have a 95% share of their market (U.S. Census of Retail Trade, 1972, 2002).

As brand manufacturers lost market share, they began to imitate large retailers by developing their own offshore suppliers. They also cut back on contracting and consolidated the remaining domestic production in their most efficient U.S. factories. Women's dress manufacturers, for example, increased their share of in-house production by 55% (from 31% to 48%) between 1972 and 1987, men's suit, and coat manufacturers by 23% (from 56% to 69%) and there were corresponding declines in production shares among their sub-contractors.

Eventually, large manufacturers abandoned most of their domestic manufacturing to specialize in product design, global supply chain coordination, and marketing. By the mid-1980s, the American system of mass production apparel manufacturing had largely moved offshore. Large retailers and manufacturers now control vast networks of global supply chains and with imports accounting for 74% of domestic apparel consumption (American Apparel and Footwear Association, 2002). The production that remains in the United States largely involves small manufacturers and contractors serving highly uncertain fashion markets and other niche markets where order sizes are too small for mass production to be efficient.

Alternative Models of Industrial Evolution

While traditional comparative advantage can account for much of the movement of domestic apparel production to offshore supply chains, strategic choices made by increasingly large and powerful clothing retailers, and by brand apparel manufacturers, influenced the timing and severity of the decline of the U.S. apparel industry. Brand manufacturers set the stage for these strategic choices by opting for the efficiencies of mass production methods at the end of World War II. Large retailers accepted this system of low cost, but inflexible, mass production

and eventually incorporated it into a new retail model specializing in the mass marketing of fashion-basic and commodity products that could be efficiently mass-produced by offshore suppliers.

The cost-savings from this system are extraordinary. Between 1975 and 2002, apparel and footwear prices increased by only 71%, and women's and girl's wear prices by only 35%, compared to an overall increase in consumer prices of 3.3 times (American Apparel and Footwear Association, 2002). Large retailers are now locked in to a supply chain model that depends on scale economies of designing and marketing mass fashion products supplied by low cost offshore suppliers, a choice that has been reinforced by shifts in the preferences of American consumers induced by the falling relative prices of such products. Moreover, the market dominance of large retail chains creates barriers to the entry of alternative models of supply chain models, unless they support mass fashion markets.

The New Comparative Advantage: Just-in-time Supply

One example of the control that large retailers exert over the introduction of competing supply chain models is the development of just-in-time supply chains in the late 1980s. In an attempt to stimulate sales and expand market share, large U.S. retailers increase the variety of clothing styles, colors, and sizes. One large industry study, for example, reported that the number of stock-keeping units (SKUs) – the codes that define individual products in terms of style, color, and size -- increased by 63% between 1988 and 1992 (Abernathy et al, 1995, p. 191) and another reported a rise in “short-cycle” products with a planned sales period of 5 to 10 weeks (Rothstein, 1989, p. 79). Greater product variety and shorter product cycles, however, meant larger inventories, greater uncertainty of demand for particular products, and more markdowns.

To control these costs, retailers sought to supplement the traditional efficient but slow production system with a new “lean retailing” system based on just-in-time supplies in order to reduce initial orders, lower inventories, and more efficiently balance supply and demand. Large domestic supply chains, however, were slow to respond to this new market for just-in-time products because just-in-time supply methods were incompatible with their slow mass production practices while small-scale suppliers lacked the production and coordination capacity to meet the demand for just-in-time products.

In the face of this market “failure”, large retailers began to “drive” a new type of just-in-

time domestic supply chain based on flexible manufacturing, new logistics practices, and coordination through proprietary information technologies. Price incentives were used to reward quick and accurate fulfillment of orders and there were cost penalties for failure to meet supply targets. These economic incentives were reinforced through business “partnerships” that large retailers established with preferred suppliers to improve manufacturing flexibility and facilitate the adoption of new information technologies and (Abernathy, et al. 1995, 1999). Just-in-time supply practices diffused rapidly among the most progressive suppliers, such as VF, Sarah Lee, as evidenced by the more than seven-fold growth in EDI linkages between clothing retailers and domestic manufacturers between 1988 and 1992 and by the increased rates of daily and weekly deliveries by domestic suppliers to replenish retail inventories, which rose from 8.7% to 25% of sales in the same period (Abernathy, et al., 1995, 1999, pp. 78, 176).

Developing quicker and more flexible manufacturing practices, along with proximity to markets, initially gave large U.S. apparel suppliers a new source of comparative advantage based on economies of speed and proximity to markets. It appeared that speed advantages would protect new just-in-time markets against competition from imports because long lead times for production and delivery would limit low-cost countries to specializing in “slow” mass production for products delivered at the start of the season (Abernathy, et al., 1995, 1999; New York Times, January 13, 1998). By the mid-1990s, the most technologically and organizationally advanced just-in-time suppliers reported substantially higher operating profits than traditional suppliers and they experienced faster growth in sales (Abernathy et al., 1995).

However, the promise of comparative advantage based on quick and flexible production has not been sustained. The increased speed of just-in-time supply chains developed through partnerships with relatively large firms was limited to what could be achieved through improved information technologies and “flexible mass production” methods involving greater use of multi-skilled production teams. These methods were gradually imitated by low cost suppliers located in Mexico and various Caribbean Basin countries with relatively short transportation times to U.S. markets. Production continued to grow in these countries during the 1990s (American Apparel and Footwear Association, 2002). Our recent interviews with manufacturers, jobbers, and retailers in New York City further confirm that these nearby low-cost supplying countries are able to approximate the speed advantages of flexible domestic production at lower costs.

Small Scale Supply Chains: Periphery or Core?

As flexible mass production has followed traditional mass production in moving offshore, the U.S. apparel industry is again going through a period of substantial consolidation. What distinguishes this new consolidation is that it involves a shift towards small and medium-sized firms, particularly those with fewer than 20 employees (Tables 2 & 3). Consistent with this trend, the small-scale New York garment district began to increase its share of industry employment in 1995 after several decades of decline (see Table 5). The standard explanation of this trend, both nationally and in New York City is that comparative advantage and rising imports are causing firms to downsize, employment is contracting, and the industry is “hollowing out” as manufacturers abandon production in favor of design and marketing activities (Palpacuer, 2002).

In the future, the U.S. apparel industry will consist of a core of large capital intensive producers of basic commodity products, such as socks and underwear, along with a group of domestic “manufacturers” that will contract production offshore while retaining the skill and capital intensive components of the supply chain – designing products, buying fabric, making patterns and cutting parts, and marketing (Mittelhauser, 1997). On the periphery of the industry will remain a group of marginal suppliers consisting of small manufacturers and contractors that will survive on highly uncertain residual market niches that are too small to be served efficiently by large-scale supply chains specializing in either mass production or flexible mass production.

There is some validity to this conclusion. While New York City remains the major U.S. fashion center, housing the design and buying offices of many manufacturers and retailers, the employment in New York City’s apparel manufacturing is concentrated among small firms and the industry has seen a 65% drop in jobs and a 55% fall in the number of apparel manufacturing firms from 1980 to 2001. Our recent field research confirms that many of the firms that survive are small-scale and they serve a fragmented set of niche markets, many of which are declining. Competition from lower-cost overseas producers and, to a lesser extent the consolidation of domestic retailers, is repeatedly cited in our surveys as the major reasons for this decline.

At the same time, however, the New York City garment industry is reemerging as a center of specialization in women’s wear. In 1981, half of New York City’s apparel manufacturing workers were involved in the production of women’s wear and that percentage has steadily risen to 65% in 1991 and to 71% in 2001. Even more important, New York City’s share of domestic women’s wear production has been increasing in the late 1990s (Table 5).

Partly this reflects the specialization in design, fabric acquisition, and pre-production activities by large manufacturers and retailers of women's wear that are primarily sourcing garments offshore. However, there are also small manufacturers and contractors that are serving market niches that are too small or too time sensitive to be outsourced.

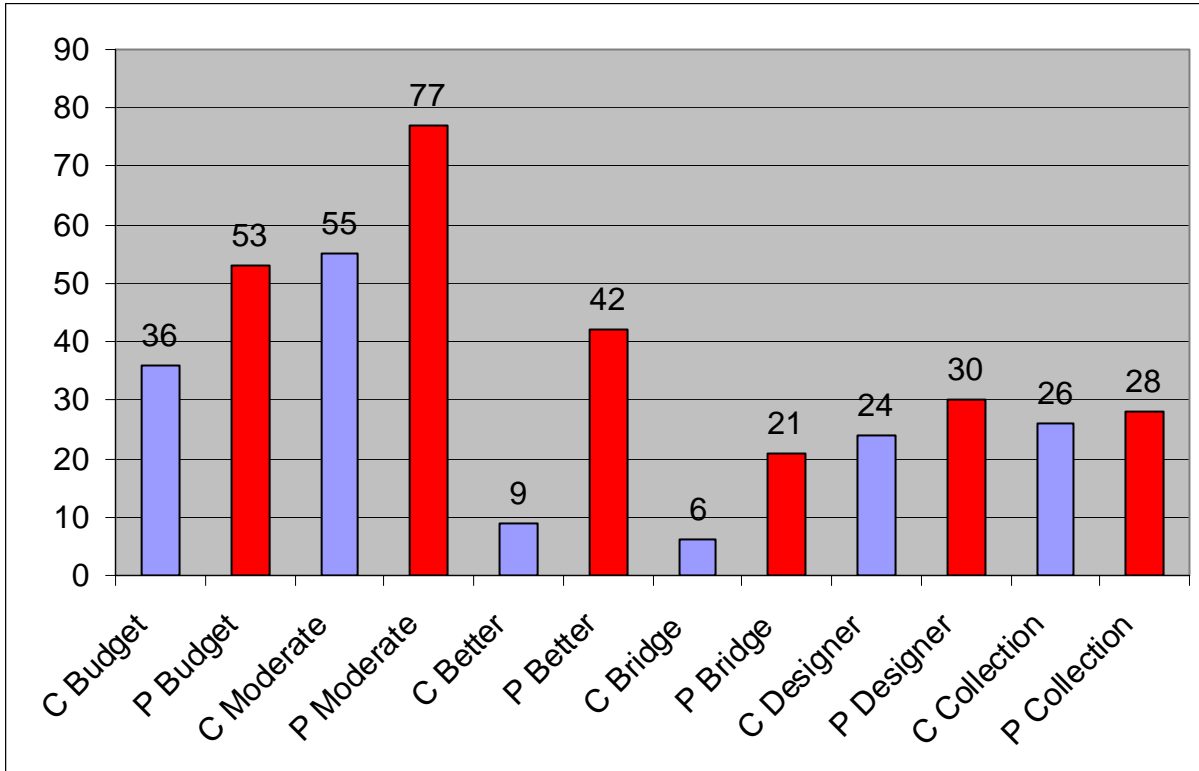
The best of these niches are in high quality, high-end markets for fashion products, custom-made clothing, small orders of fashion products for regional chains and independent shops, and products using exotic technical fabrics that require considerable care and skill in manufacturing. The common element among these niche markets is that the need to respond quickly to the rapid pace of style change necessitates a high degree of quality and the direct collaboration among, designers, producers and retailers that is only possible where there is a concentration of small and medium sized producers in close proximity to fashion markets.

A second set of niches are found in various middle to low-end specialized markets -- surgical garments, large and tall sizes, uniforms, low volume mail-order products, emergency orders for fashion-basic products where offshore production has been delayed, repair work on damaged shipments, and rework of products that are not selling. With the exception of uniforms, this set of niche markets share in common the need for supply speeds that cannot be achieved by offshore flexible mass production, or even by large and flexible domestic suppliers. For example, the order fulfillment time for just-in-time inventory replenishment by large domestic suppliers is about 2-3 weeks (Abernathy et. al, 1995) and our field research suggests comparable supply speeds are currently available from Mexico and the Caribbean basin. However, small New York City contractors can routinely fulfill small orders within a week or less.

While large firms and global supply chains cannot match the speed, flexibility, and capacity for quality among the small suppliers that survive in New York City, our surveys show that many of small contractors are not capturing the full advantages of these qualities. Our survey data documents both considerable excess production capacity and an industry that is capable of producing products of higher fashion, quality, and value than is currently demanded (Figure 2).

Figure 2

UNITE Contract Shops



C = Current Production Quality, P = Potential Production Quality

Partly this reflects the continued shrinkage of many of the City's mid-range niche markets as large retailers move their orders for just-in-time replenishment production to Mexico and the Caribbean where costs are lower. As these markets decline, the niches that remain are increasingly for low-value products. In short, there is a "hollowing out" in the quality of product demand, rather than a decline in the productive capacity of the industry. However, at least some of this hollowing out is indicative of serious structural problems involving the entrepreneurial behavior of small firms, the organizational relationships within the small-scale sector of the industry, and the barriers to entry created by large-scale retailers.

Structural Barriers To Entrepreneurial Behavior and Collaborative Networks

Our surveys revealed a noticeable lack of entrepreneurial talent among small contractors. Partly this reflects their need to focus on day-to-day survival and partly it reflects generational differences between older and younger business owners. However, our interviews also show that highly dependent relationships that contractors have with manufacturers and jobbers are also a problem. Such dependent relationships are often attributed to the efficiency advantages of manufacturers who have the operating capital to buy fabric, established contacts with retailers, management skills, and the capability to design products, but our surveys suggest that the strategic behavior of manufacturers and jobbers may also be a factor.

Manufacturers rely on a core group of contractors for garment assembly. As the industry has declined, manufacturers have shed their least capable contractors, but they have also tended to retain more contracting capacity than is needed to meet peak demand. By sharing work among their core contractors, they have created conditions of chronic excess capacity that induce contractors to cut costs and increase their productivity in hopes of securing more work. Keeping contractors at the margin of survival has provided efficiency incentives, but it has also reinforced the control that manufacturers can exercise over their contractors, shifted profits to manufacturers, and inhibited the development of the assets, contacts, and other entrepreneurial resources among contractors. These dependent relationships are in marked contrast to the collaborative relationships and greater scope for innovation among contractors and manufacturers that characterize the "full package" design and production networks found in the most successful small-scale garment districts in France and Italy (Courault and Parat, 2000, Bigarelli, 2000, Bigarelli and Crestanello, 2004).

Strategic Barriers To Entry

The second structural barrier lies outside the manufacturing relationship with the strategic choices made by mass retailers. When large U.S. retailers developed their lean retailing model, they could have built highly flexible and very fast domestic supply chains by mobilizing the large numbers of small contractors in urban garment districts that have an absolute advantage in speed of production. These small-scale supply chains would have been capable of providing quick-response replenishment production to almost the entire spectrum of the fashion pyramid from fashion-basic products to designer collections. Instead, large retailers opted for creating large-scale quick-response supply chains, coordinated through information technologies and preferred supplier partnerships, and limited to fashion-basic products.

It could be argued that these choices were dictated by the efficiency of information technologies that only large firms could afford to exploit and the coordination economies of partnerships with a few “preferred” quick response suppliers, rather than trying to contract quick response production with numerous small suppliers. However, the presence of an installed base of information technologies for retail inventory management and the established sourcing relationships with large U.S. manufacturers also framed the way in which large retailers approached the problem of developing new quick response supply chains (See Kahneman, 2003 for a discussion of such framing). Having a successful set of information technologies and organizational relationships in place tended to preempt other ways of organizing just-in-time supply chains involving either small-scale suppliers or with small-scale supply chains managed by jobbers and small manufacturers.

The choice of large-scale just-in-time supply chains also led to a “design bias” towards fashion-basic products that further hastened the decline of small-scale supply chains. Because the efficiency of large-scale supply chains depend on mass production, even for quick response supplies, large retailers targeted their growing design capacity on fashion-basic products that were best suited to the mass production systems of their large-scale supply chains. Even though some large just-in-time suppliers adopted more flexible versions of mass production, just-in-time supply was also accomplished by shipping from supplier inventories produced using traditional mass production methods.

Fashion-basic products also yield scale and scope efficiencies of product design and development because product differentiation can be achieved through modest changes in colors, trims, finishes, and silhouettes, rather than through the more creative changes in fabrics and

silhouettes that are characteristic of fashion products. As a result, large retailers reinforced their fashion-basic product design strategy by promoting fashion-basic brand images built around advertising concepts such as “lifestyle” clothing and “value for money”.

The relatively greater demand for fashion products in countries like France and Italy, along with a lag in the adoption of information technologies for managing inventories, caused large retailers in these countries to preserve at least some relationships with small-scale supply chains and also helped to sustain the small retail chains and independent retailers that are the traditional customers of small-scale suppliers.

“Created” Advantage Based on Speed, Flexibility, and Design

Absent renewed trade protection or a radical change in the organization of garment districts and sourcing strategies by large retailers, we foresee continued plant closings and declining employment among small-scale apparel suppliers in the United States. We estimate that as many as half the contractors in New York City are redundant under present circumstances and that current output could probably be sustained with far fewer workers. Efforts to improve the efficiency of small contractors through training programs and the promotion of “full package” capabilities are likely to have little effect on the overall survival of the industry. There is insufficient demand to sustain the current number of workers and firms and excess capacity persists among the small manufacturers that are well positioned to provide full package products. Creating contractors that are more efficient and helping them to reduce their dependence on jobbers for fabric supplies and retail orders, will only exacerbate the problem of excess capacity and increase the competitive pressures on less efficient contractors and small manufacturers.

The only long run solution is to generate market growth for the types of apparel products for which New York City has a comparative advantage -- products where production runs are short, supply schedules are urgent, and design and quality are important. Ideally, New York should develop specializations in products that could utilize the excess capacity for high value added production where high wage costs are less of a competitive disadvantage.

One can imagine a number of possible scenarios for the future of the New York garment district. For example, it seems likely that New York will continue to gain a larger share of the women’s wear market as other garment centers decline. However, products that are in trouble elsewhere are not likely to be a long-term source of growth for New York City.

A second possibility is to expand New York City production through various programs

that are already in place -- “buy American” programs, political efforts to require the purchase of U.S. made clothing by military and governmental customers, efforts by unions to persuade large retailers and manufacturers to source work in New York City, and various export promotion initiatives. While these efforts may generate more production and employment in the short run, they are also likely to allow the industry to postpone further the substantial reforms in supply chains that are needed to reinforce the special strengths of New York City. Nor are they likely to provide manufacturers and retailers with long run incentives for keeping production in New York City, if it can be produced elsewhere at significantly lower costs.

What is needed instead are solutions that focus on developing new domestic markets and constructing new types of supply chains that specialize in producing small orders of high value-added products very quickly. These are the markets for which New York City has a comparative advantage that is difficult for offshore supply chains to imitate.

Quick-Response For Fashion Replenishment

One such potential market is the replenishment of fashion products that are now supplied only once a season. Supply chains for replenishment products in the upper tiers of the fashion pyramid are already present in the New York City garment industry. What is needed is to promote the idea that initial inventories of fashion products can be reduced by establishing the same type of inventory replenishment capacity that mass retailers created for fashion-basic products in the 1990’s. This would entail shifting “buy American” efforts from specialty chains and mass retailers of fashion-basic products to department stores, which are the primary retail channel for fashion products.

Just-in-time Supply Chains For Flexible Retailers

A second option is to provide just-in-time supply chains for the new type of “flexible” retailers who specialize in short-cycle, reasonably fashionable products that are continually being replaced. Leading examples of this flexible retailing model are European specialty chains, such as Zara and H&M, for which New York City is a large U.S. “test market”. The appeal of these chains for consumers is that they offer a rapidly changing product mix that is regularly updated with the latest fashions. The Zara chain, for example, introduces new products on a 3-4 week cycle.

However, rather than supplying these short-cycle products through equally quick short-cycle supply chains, these chains follow a relatively traditional design and manufacturing

calendar. By using flexible mass production methods, Zara is able to compress the production calendar for new products to about 9 months because it controls its own integrated textile and clothing supply chains located mainly in Spain and Portugal. It also manufactures “grey” goods so that it can make minor alterations in styles during manufacturing and delay final dyeing and finishing operations so that prints and colors can be changed shortly before new products are shipped. This production schedule, however, is only somewhat shorter than that required by the old PBS system and some products are sourced offshore.

A reliable just-in-time supply capability in New York City would offer these chains an opportunity to respond more quickly and accurately to that part of the U.S. apparel market that is more concerned with up-to-date fashion than with price and the somewhat higher production costs could be offset by lower transportation costs, leaner inventories, and fewer markdowns.

Supplying New Designers

New York is a center for training new designers, many of whom hope to establish themselves as independent designers. Our surveys of these young designers suggest that a major barrier to the development independent designer boutiques is access to suppliers that are willing and able to manufacture small orders at a competitive cost.

Partly this is a problem of information about supplier availability, quality, and price, but there are more fundamental economic obstacles as well. Young designers often lack operating capital to meet minimum order sizes for clothing. Market uncertainty and risk are high for small collections and untested products, and small orders are inefficient to produce even by small contractors. However, these problems are not insurmountable. The building blocks are present in New York City for constructing efficient supply chains for young designers, particularly if risks can be pooled and if young designers are willing to make commitments to their contractors for repeat orders of successful products.

“Fast Fashion” Supply Chains

A fourth option is to develop markets for new “fast fashion” products, which are known in Europe as “quick” fashion” or “street fashion”. Fast fashion is a concept developed initially in France to serve markets for teenage and young adult women who want trendy, short-cycle, and relatively inexpensive clothing, and who are willing to buy from small retail shops and boutiques.

The key ingredient of fast fashion is the ability to track consumer preferences quickly and

to identify potentially popular new designs through daily proximity to fashion markets, fashion images, and fashion makers. Street fashion is not designed in the traditional manner of *haute couture*, but rather is adapted from existing designs and produced in different types of materials, colors, and silhouettes

This design capability is married to supply chains that can quickly obtain fabrics, manufacture samples, and start shipping products with far shorter lead times than those of the traditional production calendar. In the *Sentier* garment district in Paris, for example, the time from concept to delivery for street fashions can be as little as two weeks by using fabrics that are available locally.

The life of a typical fast fashion product is a month or less. Samples can be produced in a day, small orders for market testing are produced in less than a week, and major specialty chains in France, such as 123 and Camaieu, test market products for a week in a single store. Those that attract consumer demand are reordered on a larger scale and again are quickly market-tested (Figure 3). As long as demand is growing, products are replenished in larger quantities and production can be halted as soon as demand slows. At the same time, competing new designs are constantly being developed and tested in the market.¹

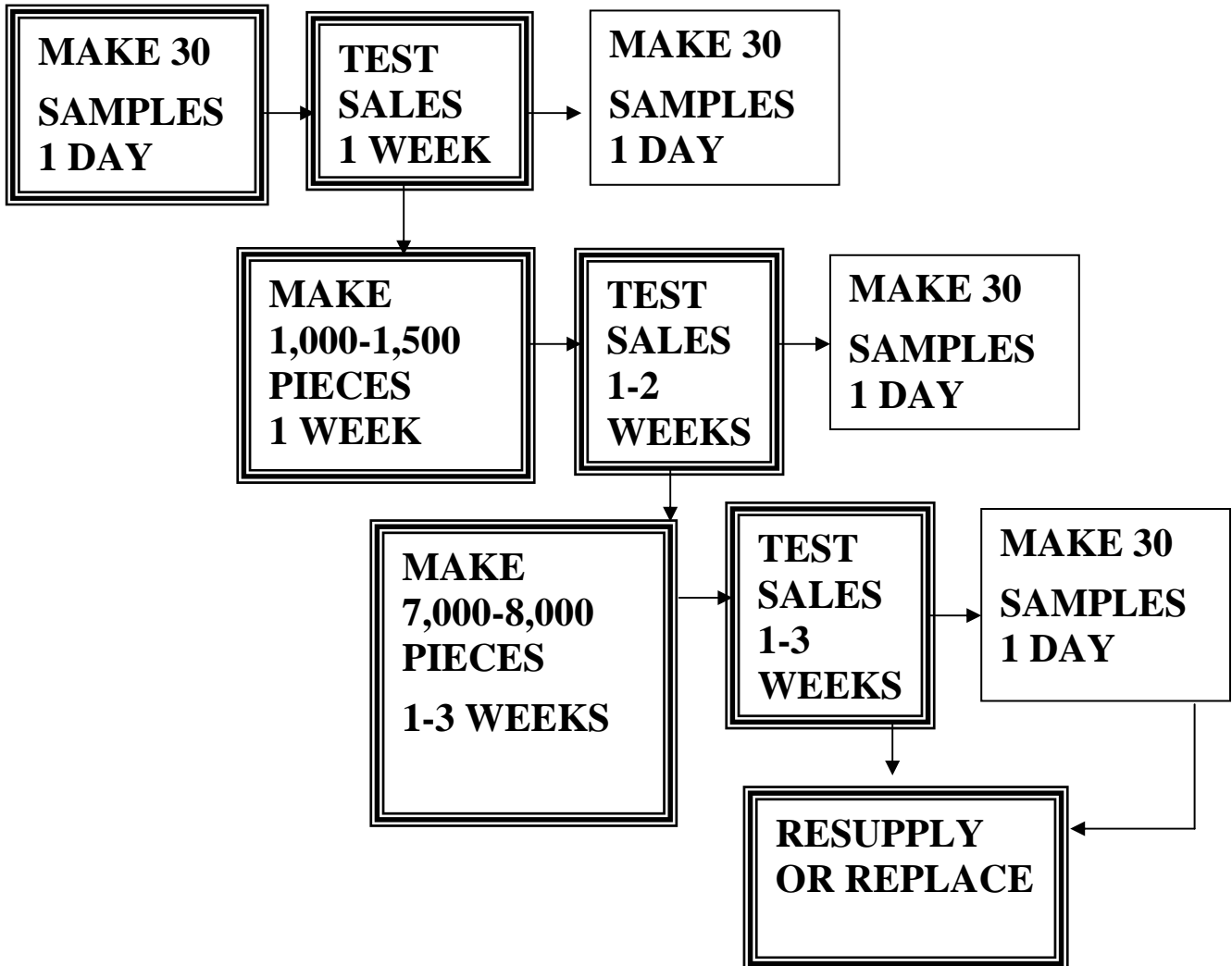
Fast fashion products are an ideal market for the New York City garment district because they can draw upon new designers as an inexpensive source of product innovation, they only need relatively small amounts of the types of fabric that are often available locally, and the order sizes are suitable for small contractors. Unlike the young designer niche market, however, fast fashion markets require a radical transformation in the supply chains of the New York garment district. The existing clusters of small manufacturers and contractors can acquire fabric, provide fast manufacturing, and broaden their market contacts, but innovative quick design capabilities need to be added to these capabilities along with a willingness to invest in promoting the “fast fashion” concept with retail clients.

¹ Italy has a variant of street fashion, known as *pronta moda*, which was initially used in the mid 1980s for quick response replenishment production and was later used for relatively low quality products that were designed and marketed 1-2 months before the start of the season and delivered mid-season to supplement traditional seasonal collections. The Italian apparel industry has now added another version of fast fashion known as “flash”, which resembles *pronta moda*, but is of higher quality, involves greater investment in fabric and clothing design, and has a

The main impediment to the widespread adoption of the fast fashion model is the large-scale retail sector. Unlike France and Italy where independent boutiques and small regional chains are still important, or among large chains in the UK and France where there is still some decentralization of retail buying decisions, large retail chains with centralized buying offices dominate U.S. markets at all levels of the fashion pyramid. A more flexible retailing environment, where buying practices are tailored to the preferences of relatively narrow customer groups and where there is willingness to test and experiment with the introduction of new products throughout the season, will be needed in the longer term if fast fashion is to be a high-growth market niche for the New York garment industry.

longer production calendar. Small flash collections are designed and introduced at monthly intervals throughout the season on a cycle from design to delivery of about six months.

Figure 3
The Quick Fashion Product Development Cycle



Can Fast Fashion and Flexible Retailing Save the U.S. Garment Industry?

If there is any prospect for the U.S. apparel industry to develop secure market niches for which it has a comparative advantage, it is likely to be in high value-added fashion products where design, quality and speed matter, and where orders are too small to attract offshore competitors. These are qualities that are present in New York City and one or two other urban garment districts in the United States and which are unlikely to survive much longer without substantial supply chain reforms.

However, there are those who argue that if fast fashion supply chains and flexible retailing methods are superior to current production and distribution arrangements, market competition would have already led to their introduction. After all, maybe fashion products are not replenished for good reason, consumers appear to prefer basic fashion products at low prices, financing young designers may be prohibitively risky, and large U.S. retailers may be so successful with their current supply chain practices that there is no need to experiment with European-style design, speed, and flexibility.

This conclusion neglects the fact that strategic decisions that have been made on grounds of short-term efficiency are often reinforced by complementary investments in technology and organizational arrangements that result in supply chain systems whose logic is difficult to contradict. When large firms with market power are part of these systems, profit shifting can also reduce competitive pressures for change. The experience of both Italy and France demonstrates that there are alternative logics for successfully organizing cohesive and entrepreneurial apparel supply chains in garment districts with contracting networks of small and medium-size firms. Although both France and Italy have seen rising import penetration with declining domestic output and employment, a core of innovative small-firm production networks have survived (Crestanello and Dalla Libera, 2003; Courault and Parat, 2000). In the Italian case, these networks follow a collaborative model with a high degree of entrepreneurial behavior, intensity of design and innovation, and direct marketing products to retailers (Brusco, 1982; Bigarelli, 2000; Bigarelli and Crestanello, 2004). France has seen similar instances of a revival of clusters of small-scale, innovative, and collaborative firms and it is the large-scale suppliers and the traditional small-scale networks that have declined sharply (Courault and Parat, 2000).

There is corresponding evidence from New York City in the 1920s and 1930s of a highly

successful industry build around small firms serving fast fashion markets. In 1939, for example, Hochman (1941) reports an estimated 125,000 different dress styles were produced in New York divided about evenly between moderately-priced garments (with an average production run of 997) and better-priced dresses (with an average production run of only 267). There was “a frantic insistence upon immediate deliveries when orders are finally placed” (Teper, 1937, p. 25) and manufacturers developed quick response productions systems that could produce large volumes when required (Bryner, 1916, pp. 13-14, 24). Most orders placed after the beginning of the season were “for immediate delivery, that is, a week or ten days” (Magee, 1930, p. 20).

Similar supply speeds are still available in New York City, but much of the design input has been transferred to large retailers and manufacturers. Nevertheless, there is some prospect that this flexible retailing model can be revived. One possibility is that boutiques and small chains serving a specialized customer base may become more popular shopping venues in much the same way that there was a revival of small bakery chains in the 1990s (Crean, 2002). A second is that there may be a growing “marketing crisis” caused by consumer boredom with the very similar products available from large specialty chains, which accounts for the success of chains such as Zara that offer clothing products with shorter life cycles and greater variety of choice.

However, the barriers to flexible retailing remain formidable. Our surveys of large retailers and manufacturers in New York City finds a firm conviction that their current control over large-scale global supply chains coupled with centralized buying and product standardization among stores is the most efficient approach to serving their markets products. There are also serious problems on the supply side of the market – the lack of entrepreneurial skills among contractors, the difficulty in developing linkages between new designers and affordable supplies, and a growing demoralization among the small manufacturers over their ability to survive by producing in New York City. The French and Italian an experience, however, shows that such obstacles can be overcome when industry development organizations exist to provide business assistance, to foster supply chain networks, and to promote entrepreneurial behavior and the introduction of new ideas.

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Data Appendix

While much of this paper relies on official government data and from secondary sources, such as the surveys conducted by the Harvard Center for Textile and Apparel Research (Abernathy et al., 1999), detailed field research was conducted by the authors in New York City during the summer of 2003 with group of 36 contractors and manufacturers and with a variety of retailers, technology vendors, and apparel industry experts. Contractors and manufacturers were chosen to represent the important geographic, product, and size dimensions of the New York industry. Twenty-three shops were in Manhattan, seven in Brooklyn, and three each in Queens and the Bronx. The majority of the shops (31) produce women's wear products, but men's and children's wear were also represented as were both knit-wear and woven products. The most frequently produced products were in the moderate price range with one fifth of the shops producing low-end budget products and over one quarter (28%) doing couture production. However, almost all shops had experience in producing across the full product spectrum. Shops ranged in size from 5-600 employees with the average shop being in the mid-20's. Twenty-two of the shops were unionized.

Interviews consisted of both a structured protocol and open-ended questions. They were conducted by rotating two-person teams (which included the authors and a graduate research assistant) and lasted between 1-3 hours with additional in-person and telephone follow-up as needed during the summer and fall.

A small-scale field survey database was compiled from the field interviews. This data has been supplemented by written questionnaires from 163 unionized contractors in New York City through a survey developed by the Fiscal Policy Institute and the Garment Industry Development Corporation and administered by business agents from the UNITE-HERE trade union.

Table 1
Apparel Production Workers
(1,000s)

<u>Year</u>	<u>Employment</u>	<u>% of Manufacturing</u>
1940	819	9.7
1950	1,080	9.2
1960	1,098	9.0
1970	1,196	8.8
1975	1,067	8.5
1980	1,079	8.2
1985	944	7.5
1990	869	6.9
1995	772	6.2
1997*	592	4.7
1998	542	4.3
1999	470	3.8
2000	420	3.5
2001	369	3.2
2002	351	2.4

*Beginning of new NAICS series.

Table 2
Distribution of Establishments By Size of Employment

Year	1-19	20-49	50-99	100-249	250-499	500+
1970	47.2%	24.4%	14.1%	9.9%	3.4%	1.0%
1980	50.0	22.1	13.0	10.2	3.7	1.1
1990	61.8	17.5	9.7	7.6	2.6	0.8
1995	67.2	15.6	8.0	6.3	2.1	0.9
1998*	65.1	18.6	8.3	5.8	2.0	1.0
2001	73.1	14.7	8.3	4.3	1.2	0.6

* = Beginning of new NAICS series

Table 3
Distribution of Employment By Size of Establishment

Year	1-19	20-49	50-99	100-249	250-499	500+
1975	6.8%	14.4%	16.8%	28.6%	20.6%	12.9%
1980	6.6	13.2	16.5	27.8	21.3	14.6
1990	8.1	12.9	15.8	27.2	20.5	15.4
1995	9.6	13.1	15.0	25.5	18.4	18.4
1998*	9.6	14.6	14.9	23.3	17.9	19.6
2001	13.3	16.7	15.8	23.7	14.9	15.7
* = Beginning of newNAICS series						

Table 4
Average Employment Per Apparel Establishment

Year	Total	Men's Wear	Women's Wear
1970	57	31	55
1975	52	123	53
1980	58	136	55
1985	48	132	49
1990	43	130	48
1995	38	109	31
1997	35	94	26
1998*	38	90	26
1999	34	75	24
2000	31	62	21
2001	27	45	19

* Beginning of new NAICS series

Table 5

New York City Apparel Employment and Share of National Employment

Year	NYC apparel employment	% of National Apparel Employment	% of National Women's Wear Employment
1980	139163	11.2	16.8
1981	136798	11.2	17.0
1982	125703	11.1	17.1
1983	120467	10.1	16.6
1984	118163	10.3	16.6
1985	111815	10.0	17.2
1986	106157	9.7	17.0
1987	103,385	9.4	16.5
1988	100,364	9.3	16.8
1989	99,093	9.3	17.1
1990	93,985	9.4	17.8
1991	88,164	8.7	17.8
1992	84,285	8.4	17.6
1993	81,959	8.4	18.1
1994	77,979	8.0	17.9
1995	74,193	8.3	18.2
1996	72,109	8.5	19.4
1997	73,418	9.1	20.8
1998	69,803	9.5	21.7
1999	64,573	9.8	23.8
2000	58,540	9.7	23.8
2001*	50,025	11.3	
2002	43,000	12.3	

*Beginning of new NAICS series