

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

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Comparative advantage seems to have doomed the U.S. apparel industry. After all, apparel is a labor-intensive industry where capital assets per employee are 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 the manufacturing technology remains dominated by the industrial version of the home sewing machine, the industry also lacks the substantial scale economies and the new production technologies 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).

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However, comparative advantage 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, such as Italy, have successfully exploited in defending their domestic markets against imports and in maintaining a positive trade balance in apparel. This paper examines why the U.S. apparel industry pursued a different a different set of competitive advantages from Italy and explores what can be done to halt the further loss of jobs and markets.

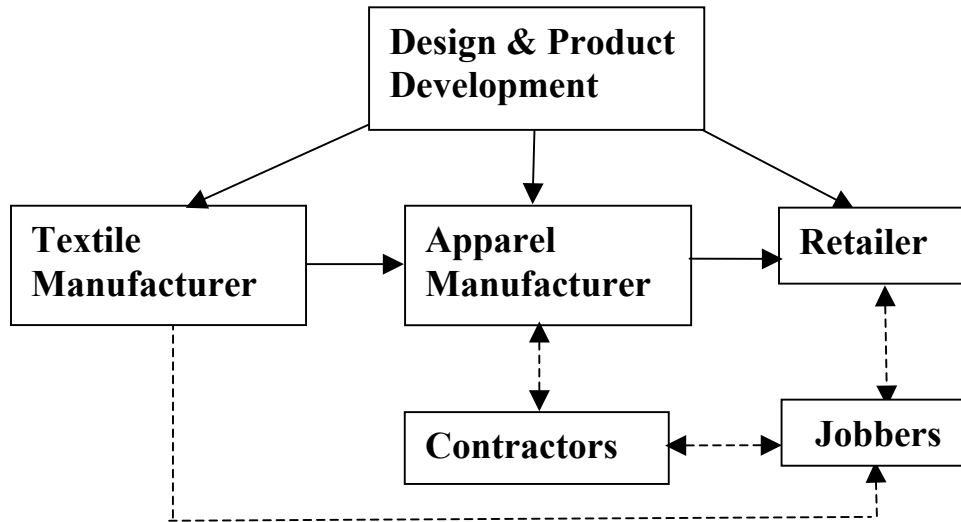
A Brief Primer on Apparel Supply Chains

A short introduction to apparel supply chains will provide a context for understanding the economic organization of the U.S. apparel industry. Prior to the 1970s, almost all sectors of the apparel supply chain -- textile and apparel manufacturing, fabric and clothing design, and retailing were located entirely in the United States (see Figure 1). Textile manufacturing is capital intensive and highly automated with about 70% of employment being in large (500+) establishments. Large firms also characterize some parts of the apparel industry where mass production is particularly important -- hosiery and knitted underwear, men's suit and coats, dress shirts, and jeans -- and the manufacture of commodity knitwear products is sometimes vertically integrated with textiles. However, such large establishments have accounted for less than 20% of apparel jobs in the postwar period while small and medium size firms have been growing in importance (Tables 2, 3, & 4). Almost half of all apparel employment is in establishments with fewer than 100 worker (2001) and the average size of establishment has fallen from 58 in 1980 to 27 (2001).

Apart from the automation of commodity products (such as tee shirts and sweat pants) and routine sewing tasks (such as buttonholes), the underlying sewing technology of apparel manufacturing has undergone relatively little change in the last century. Instead, technological change has been concentrated in pre-production activities (computer-aided design and layout of parts, computer-aided manufacturing of patterns) and cutting (automated mechanical knives and lasers). The high cost of many of these new technologies has limited their adoption to larger firms (Murray, 1995; Rothstein, 1989).

Figure 1

Apparel Supply Chain



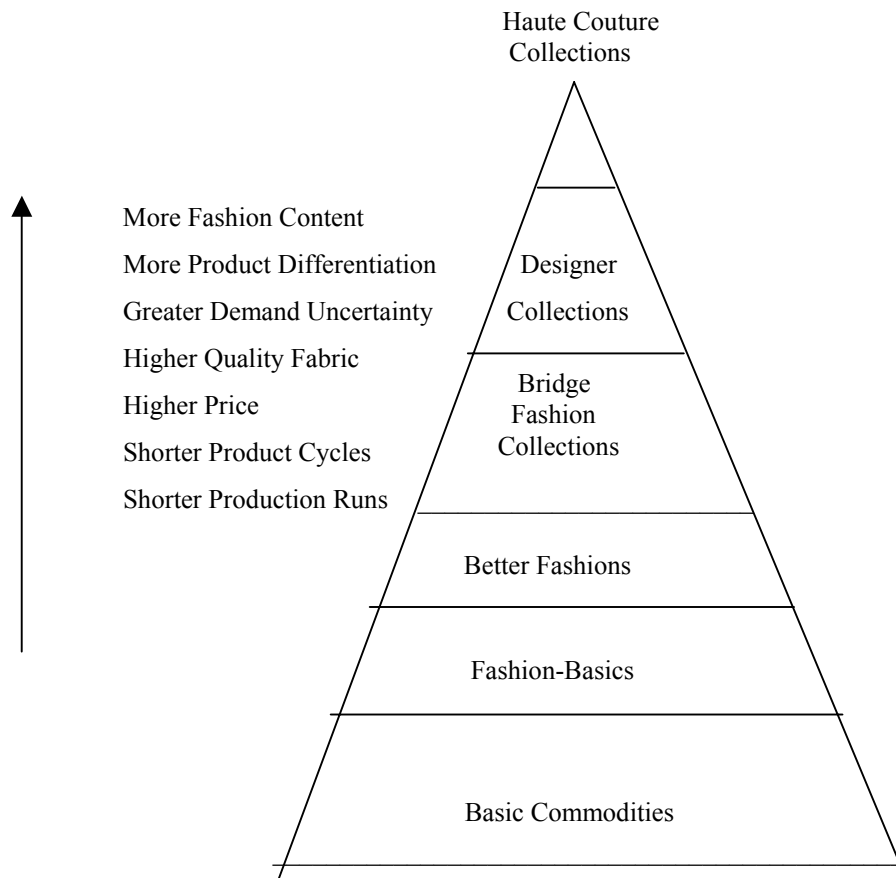
The organizational relationships within apparel supply chains are quite complex. Manufacturers can contract all or part of the production process to smaller contractors and there are intermediaries (known as jobbers) that buy and cut fabric, contract for clothing assembly, and sometimes design clothing (Teper, 1937, p. 6). Retailers have traditionally had arms-length buying relationships with their suppliers, but “partnerships” with key suppliers have become more common in recent years (Abernathy, et al, 1999).

The Fashion Pyramid

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. 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 2).

Figure 2

The Fashion Pyramid



The structure of supply chains varies by type of product within the fashion pyramid. 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 “workshops” and typically sold in designers’ showrooms and independent fashion boutiques. Haute couture designers may also develop less expensive collections that are assembled by small and medium sized contractors under contract and licensing arrangements and sold through department stores.

As products move down the fashion pyramid from designer collections to bridge” and “better” clothing, designs become more commercialized and products are priced lower to serve larger markets. Mass production techniques become more common and products are sold through a wider range of retail outlets, such as department stores and some high-end specialty

chains. Fashion-basic and commodity products are mass designed, mass produced, and marketed through mass merchandisers (like Wal-Mart), variety stores (like J.C. Penney), and specialty chains (like the Gap).

The fashion pyramid also defines production 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 is 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.

The Efficiency of “Slow” Production

Large manufacturers perfected an extremely efficient form of mass production known as the “progressive bundle system” (PBS) during World War II when the demand for military garments, combined with consumers preferences for “quality over variety” (Disher, 1947, p. 5), permitted long production runs of identical products. The PBS is based on the extreme specialization and division of labor. 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 that production is slow and inflexible. A pair of pants requiring 40 operations will take 40 days to move through the 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).

Slow and inflexible mass production requires retailers to select styles and place orders far in advance of the start of each season that it is hard to predict consumer demand with any 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). The long lead times of efficient mass production laid the foundation for the subsequent shift from domestic to offshore supply chains because the disadvantages of even slower imports were more

than offset by lower costs. Once competing offshore supplies became available, large retailers could also bypass domestic manufacturers by developing their own product designs.

Supply Chain Restructuring

As domestic manufacturers lost market share, they began to imitate large retailers by developing their own low cost 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 domestic sub-contractors. Eventually, large manufacturers abandoned most of their domestic manufacturing in favor of specializing in product design, global supply chain coordination, and marketing. Apparel plants of all types downsized or closed and this collapse in domestic manufacturing spilled over to other sectors in the apparel supply cluster, such as textiles, thread, and trims.

These changes, however, were good for large retail chains that had the mass buying power and design capability to take the fullest advantage of lower offshore manufacturing costs and greater competition in domestic apparel markets. U.S. clothing retailing became increasingly dominated by large chains and rising levels of market concentration as 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 over two-thirds of department store sales in 1997, up from 39% in 1972, and the corresponding figures for women's specialty shops are 27% and 11%. The four largest mass merchandisers, such as Wal-Mart and Target, have an 88% share of their market (U.S. Census of Retail Trade, 1972, 1997).

Alternative Patterns of Industrial Evolution

The thesis of this paper is that the severe decline of the U.S. apparel industry was not simply the result of arms-length global competition based on differences in factor endowments. It is also the product of strategic choices made first by apparel manufacturers and later by increasingly large and powerful clothing retailers that set the U.S. apparel industry on a path that accelerated its long-term decline. U.S. apparel manufacturers initially chose to compete in the post-war period on the basis of efficiencies of mass production methods. Large retailers followed

the lead of mass manufacturer by opting for a model of mass retailing based on economies of scale and scope and they chose to specialize in “mass fashion” products that could be efficiently mass-produced.

The U.S. model of mass production and mass retailing was initially dominated by 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. This balance of power, however, gradually shifted from manufacturers to retailers in the mid-1970s as imports increased market competition in manufacturing and as retailers established their own product design and innovation capabilities to compete against manufacturers’ brands. U.S. retailers were also increasing their size and market share and, by the mid-1980s, the largest retailers were developing proprietary information technologies that helped both to coordinate and to control their domestic and global supply chains.

Small firms play a limited role in mass production by providing reserve production capacity during periods of peak demand. However, they are central to the fashion industry with its highly uncertain markets, and to other niche markets where order sizes are too small for the PBS to be efficient. The speed and flexibility of small suppliers could have been an asset in helping larger manufacturers to compete against imports. Instead, the mass production system had the perverse effect of inhibiting the growth of smaller-scale fashion markets and undermining small-scale supply chains. In retrospect, the mass production system could be easily replicated by offshore suppliers while it is the small-scale system that has the better prospects for survival.

Different choices were made in Italy where small manufacturing firms continue to maintain a substantial share of the domestic clothing market by specializing in more fashionable products for which they also retain their own design capability. This fashion production serves a large domestic base of independent retailers and small chains through regional sales networks and also a sizeable export market that includes large foreign retailers.

The smaller scale and higher fashion content of Italian apparel manufacturing and retailing is not conducive to the same concentration of market power. Instead, of relying on the efficiencies of scale, scope, and information technologies, the Italian model has competed through flexibility, specialization, and an emphasis on product design and quality among even the smallest suppliers. These were qualities that could not be replicated as easily by global

supply chains so that Italian apparel manufacturing has remained globally competitive and market power remains more equally distributed between domestic suppliers and retailers.

The New Comparative Advantage: Just-in-time Supply

The U.S. apparel industry had an opportunity to slow import penetration by tapping into the comparative advantage of “speed” during the late-1980s when retailers were trying to stimulate sales and expand market share by increasing 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 more inventories and greater uncertainty of demand.

To control these costs, retailers sought to replace the traditional slow production system with a new “lean retailing” system that relied on just-in-time supplies to permit smaller initial orders, lower inventories, and fewer markdowns. Just-in-time supply, however, was incompatible with the slow mass production practices of both domestic and offshore supply chains. Large retailers, therefore, sought to “drive” a new type of just-in-time domestic supply chain based on flexible manufacturing and fast delivery speeds. They used price incentives to reward quick and accurate fulfillment of orders and cost penalties for failure to meet supply targets, and they reinforced these market incentives by establishing business “partnerships” with preferred suppliers to facilitate the diffusion of information technologies and improve manufacturing flexibility (Abernathy, et al. 1995, 1999).

U.S. apparel suppliers appeared to be developing a viable comparative advantage based on economies of speed. High cost domestic suppliers with flexible manufacturing practices and proximity to markets began to specialize in just-in-time products that were protected against competition from imports with long lead times, leaving low-cost countries to continue to specialize in “slow” mass production for delivery at the start of the season. (Abernathy, et al., 1995, 1999; New York Times, January 13, 1998)

There was a more than seven-fold growth in EDI linkages between clothing retailers and domestic manufacturers between 1988 and 1992 and daily and weekly deliveries by domestic suppliers to replenish retail inventories rose from 8.7% to 25% of sales in the same period

(Abernathy, et al., 1995, 1999, pp. 78, 176). The most technologically and organizationally advanced just-in-time suppliers reported higher operating profits than traditional suppliers (15% vs. 10.5%) and experienced faster growth in sales (Abernathy et al., 1995).

However, the promise of comparative advantage based on flexible mass production and protected just-in-time markets has not been sustained. These just-in-time supply chains were developed with relatively large firms for which flexible manufacturing meant “flexible mass production” and the greater use of multi-skilled production teams. These methods were gradually imitated by low cost suppliers located in Latin American and Caribbean countries with relatively short transportation times to U.S. markets and U.S. manufacturers were unable to secure these just-in-time markets by continuing to improve production speeds. Large retailers gradually shifted just-in-time orders to nearby quick response suppliers in Mexico and the Caribbean Basin (Abernathy et al, 1999, pp. 234-37) and our recent interviews with manufacturers, jobbers, and retailers 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: By Default or By Design

As flexible mass production has followed traditional mass production in shifting to offshore supply chains, 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 with fewer than 50 employees and particularly to firms with fewer than 20 employees (Tables 2 & 3). The New York garment district, for example, has begun to increase its share of industry employment in 1995 after several decades of decline (see Table 5).

Small Firms “By Default”

The standard explanation of this trend is that comparative advantage and rising imports are forcing large firms to downsize and to specialize in non-manufacturing activities where the United States has a comparative advantage. According to this interpretation, the industry is “hollowing out” (Palpacuer, 1996). In the future, it will consist of a core of large capital intensive producers of basic commodity products such as socks and underwear and 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). In addition to this core,

comparative advantage will leave by default a periphery of small manufacturers and contractors that 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.

Our recent field research with small-scale supply chains in New York City (and in Europe as well) confirms that much of the survival of small firms is by “default. While New York City remains the major U.S. fashion center, housing the design and buying offices of many large manufacturers and retailers, apparel manufacturing employment in New York has declined by 65% and the number of apparel manufacturing firms dropped by 55% in the last two decades (1980-2001). The effects of competition from lower-cost overseas producers and, to a less extent, the consolidation of domestic retailers are repeatedly cited in our survey as the central 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 is increasing in the late 1990s as evidenced by its growing share of women’s wear employment nationally since 1995 (Table 6). Partly this reflects the specialization in design, fabric acquisition, and pre-production activities by large manufacturers and retailers of women’s wear advantage that are primarily sourcing garments offshore. However, the bulk of the industry that survives in New York City consists of small manufacturers and their contractors that are supplying clothing made in New York to a fragmented set of niche markets. Foreign competition is still causing many of these niche markets to decline, but others are too small or too time sensitive to be outsourced.

Some of these firms supply high-end markets for fashion products, custom-made clothing, and products using exotic technical fabrics that require considerable care and skill in manufacturing. Others are providing small orders of fashion products for regional chains and independent shops. The rapid pace of style change and the need to respond quickly to new consumer trends necessitates degree of direct collaboration between producers and designers that is only possible where there is a concentration of small and medium sized producers in close proximity to fashion markets. The size of these high-end niche markets in the future will depend on the rate of new product development, the survival of small retailers, and the balance of

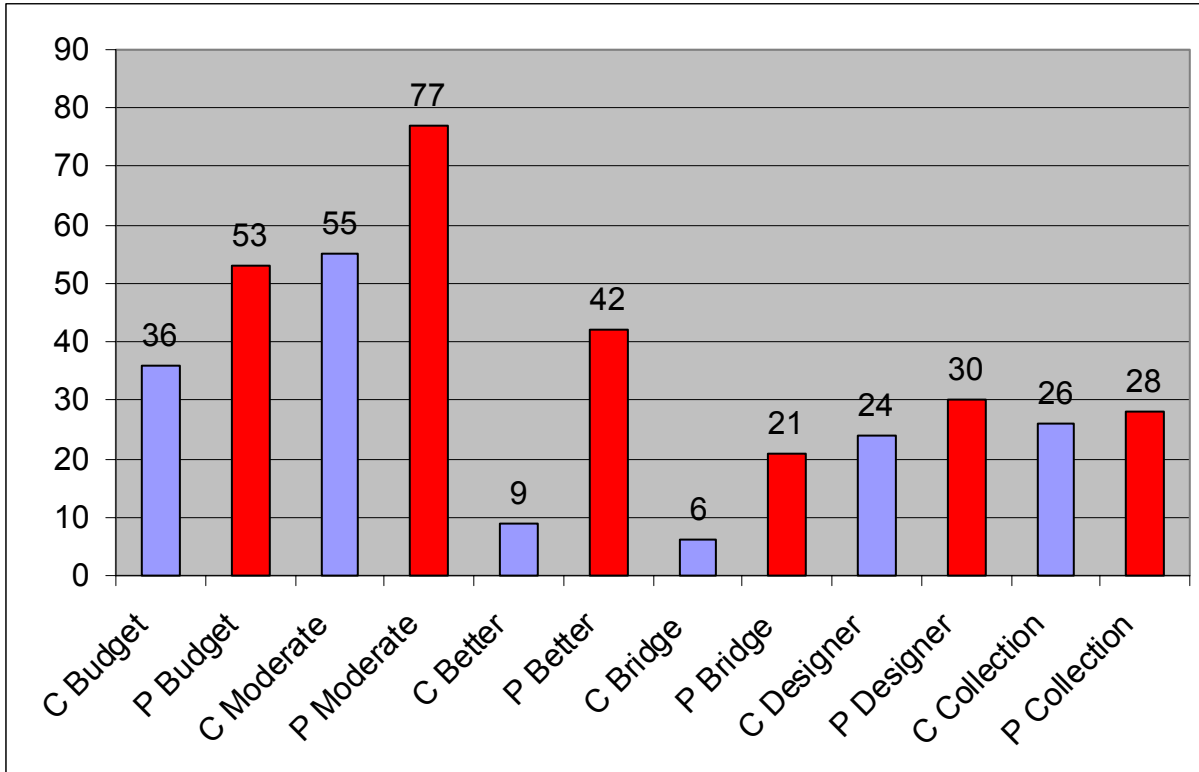
demand between fashion and casual clothing.

The remaining suppliers are serving 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, these 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 the speed and flexibility of the small suppliers that survive in New York City cannot be matched by large firms and global supply chains, our survey shows that many of the City's mid-range niche markets continue to shrink 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. 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 3).

Figure 3

UNITE Contract Shops



C = Current Production Quality, P = Potential Production Quality

The Default of Small Firms “By Design”

While foreign competition and consumer preferences are a plausible explanation for the continued decline of small-scale supply chains, a more complicated process may also be at work in which the small firm “default” option is the result of strategic “design” by large U.S. 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. There is an efficiency logic to this choice because large suppliers are better able than small firms to finance and manage the costly information technologies that large retailers used to implement lean retailing.

These technologies framed the way that large U.S. retailers thought about creating just-in-time supply chains. Retailers in other countries, such as the UK, France and Italy that had not invested as heavily in computer applications for purchasing and inventory management at a similar stage in the transition to retailer-driven supply chains relied on less sophisticated facsimile, email and web-based technologies for coordinating their supply chains.

There are also counterpart organizational economies that flow from technological choices. Large U.S. retailers could facilitate the adoption of information technologies and expedite quick response supplies through partnerships with a few large suppliers in ways that would not be possible in the more decentralized and fragmented contracting networks that would be needed to coordinate numerous small suppliers. Similarly, there were internal organizational efficiencies of scale to be had from the standardization of products across stores and the centralization of buying and sourcing decisions. I While similar trends have occurred in Europe, retailers and small-scale supply chains maintained organizational linkages that did not depend on new technologies and scale economies of coordination and, the continued presence of small retail chains, independent retailers, and somewhat less centralization of buying decisions has

meant that European retailing is more flexible and provides stronger markets for fashion products.

The choice of large-scale just-in-time supply chains also led to a “design bias” in product innovation and marketing that hastened the decline of small-scale supply chains. The efficiency of large-scale just-in-time supply chains lies in economies of scale. Large retailers, therefore, built their quick response domestic supply chains around fashion-basic products where relatively large replenishment orders could be generated. Because large-scale supply chains cannot produce fashion products as efficiently or profitably, large retailers targeted their growing design capacity on the fashion-basic product range that was best suited to the supply chains that they were driving. They reinforced this product design strategy through mass marketing fashion-basic brand images built around concepts of “lifestyle” and “value” that shifted consumer demand from fashion products to fashion-basic products.

In addition, there are scale efficiencies of product design and development for fashion-basic products. Fashion-basic products can be differentiated through modest changes in colors, trims, finishes, and silhouettes, rather than through the more radical changes in fabrics and silhouettes that are characteristic of fashion products. Ironically, while product differentiation has been growing when measured by bar codes and “stock keeping units” (SKUs), it has been diminishing when measured in terms of fashion content and creative design.

Small-Firm Garment Districts By Design

Absent renewed trade protection or a major change in product development and sourcing strategies by large retailers, we foresee continued plant closings, declining employment, and little prospect for a change in the “default” options facing small-scale supply chains. We estimate that as many as half the contractors in New York City are redundant under present circumstances and that, if excess capacity were to be eliminated through a consolidation of the industry, current output could probably be sustained with far fewer workers. Efforts to improve the efficiency of small contractors and manufacturers are likely to have little effect on their survival, primarily because there is insufficient demand to sustain the existing industry. Creating more efficient contractors, even with full-package supply capabilities, will only exacerbate this excess capacity.

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 and supply schedules are urgent. Ideally, New York should develop specializations in products that could utilize the excess capacity for high value added production. However, our surveys show that some of these niche markets that are being currently served in New York are already at risk from outsourcing, others are unlikely to experience substantial growth, and many of its current niche markets under-utilize available skills for producing high-end products.

One possibility is that New York will continue to gain a larger share of the women's wear market as other garment centers decline, but products that are in trouble elsewhere are not likely to be a long term source of growth in New York City. A second possibility is to expand New York City production through "buy American" programs, such as those that require the purchase of U.S. made uniforms, and through efforts by UNITE and other unions to persuade large retailers and manufacturers to source work in New York City. A third is to undertake stronger export promotion efforts. While these efforts may generate more production and employment in the short run, none of these approaches include substantial reforms in supply chains that draw upon the special strengths of New York City. Nor do they provide manufacturers and retailers with long run incentives for keeping business in New York City if it can be produced elsewhere at a substantially lower cost.

The best long-term solution is to create new markets and construct new types of supply chains based on speed and efficiency in producing small orders of high value-added products. These are the markets where New York has a both comparative advantage and unutilized capacity.

Designing Quick Response Supply Chains For Fashion Replenishment

One set of markets are for 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 replenishing these products in the same way that fashion-basic products are replenished, and to develop the inventory reserves of fashion fabrics to support quick response production. This would entail shifting "buy American" efforts from the specialty chains and mass retailers of fashion-basic products and to department stores that sell fashion products.

Designing Supply Chains For Flexible Retailers

A second option is to design supply chains specifically for serving the “flexible” retailers that have survived the spread of large-scale lean retailing. Traditionally, the “flexible” retailing sector consisted of independent shops, but these have largely been displaced by large specialty chains. However, the vestiges of flexible retailing remain in the boutiques of new designers and among small retail chains and these small retailers can be one platform for building new demand for the New York industry.

For example, New York City is a center for training new designers who aspire for careers as independent designers or with large retailers and manufacturers. Both career paths typically require some early experience in the independent design sector, often in association with the commercialization of designs and the operation of boutiques. Our surveys of young designers suggest that a major barrier to the development independent designer boutiques is access to suppliers that are willing to manufacture small orders at a competitive cost.

Partly this is a problem of information about supplier availability, quality, and price. However, there are more fundamental economic obstacles as well. Young designers often have lack operating capital to meet minimum order sizes for clothing contractors, 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.

Designing Fast Fashion Supply Chains

A third option, which is to develop markets for new products that we call “fast fashion”. Fast fashion is a concept developed in Europe for reducing demand uncertainty and generating high consumption by producing short-cycle fashion products close to and during the selling season. These are often trendy products are produced very quickly and in small quantities to serve markets for teenage and young adult women, but sometimes include higher-end fashion products.

The key ingredient of fast fashion are the ability to track fashion trends quickly and to identify potentially popular new designs through daily proximity to fashion markets, fashion images, and fashion makers. This design capability is married to supply chains that can quickly obtain new fabrics, manufacture samples, and start shipping products with far shorter lead times

than those of the traditional fashion calendar. Many of the small firms that survive in the U.S. apparel industry are particularly suited to the production of quick response and short-cycle “fast fashion” products that are marketed by small fashion retailers and fashion-basic specialty chains in Europe. However, the United States has never developed a “quick response” market for more fashionable short-cycle apparel.

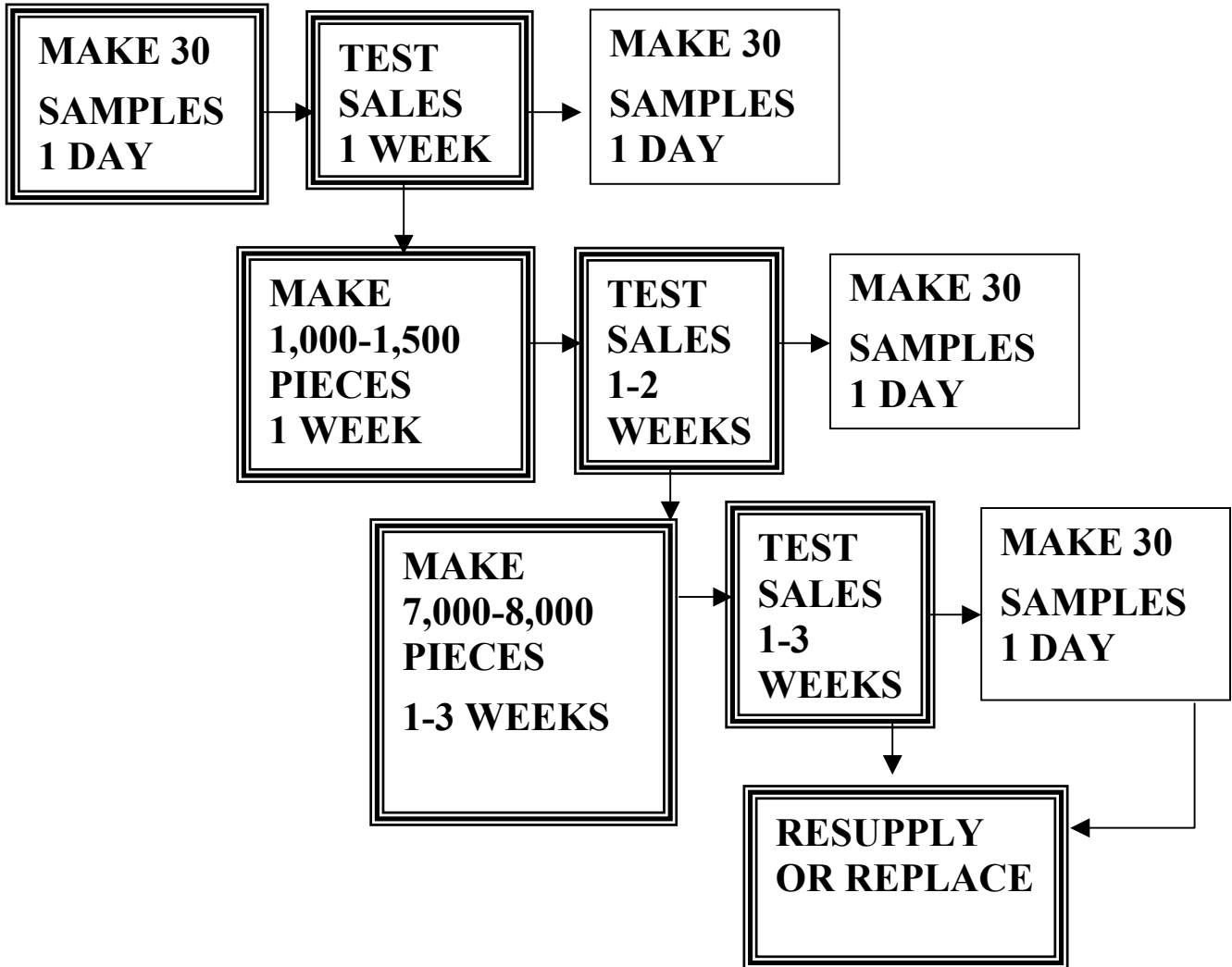
There are different models of fast fashion based on design content, production calendar, and supply chain organization. For example, the Zara chain, has developed a relatively slow version of fast fashion in which new products are continually introduced on a 3-4 week product cycle, but are produced according to a relatively traditional design and manufacturing calendar. However, 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 chain. It can also make minor alterations in styles during manufacturing and it can delay final dyeing and finishing operations so that prints and colors can be changed shortly before new products are shipped.

A second fast fashion model, developed in France, is “street fashion” or “mode de la rue”. Street fashion consists of relatively inexpensive fashion products for teenagers and juniors who buy low budget, but rapidly changing and up-to-date, styles. Street fashions are not designed in the traditional sense, but rather are adapted from existing designs and produced in different types of materials, colours, and silhouettes by small suppliers located in the *Sentier* garment district of Paris. The time from concept to delivery for street fashions can be as little as two weeks, using fabrics that are available in small quantities in the *Sentier*, and most quick fashion products have a relatively short product life of 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 4). 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.

A variant on street fashion, known as *pronta moda*, is also found in Italy. *Pronta moda* was initially used in the mid 1980s for quick response replenishment production, but was also 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”. Flash resembles *pronta moda*, but is of high quality, involves greater investment in fabric and clothing design, and has a longer production calendar. Small flash collections are designed and introduced at intervals throughout the season. The cycle from design to delivery is about six months and deliveries are staggered at one month intervals before and after the start of the season.

Figure 4
The Quick Fashion Product Development Cycle



Unlike the young designer niche market, fast fashion market niches require a radical transformation in supply chains design. New York City's existing clusters of small manufacturers and contractors can provide the fast manufacturing component and can approximate the design and fabric inputs needed for French-style street fashion. However, moving up the fashion triangle to produce high quality fashion products, like those of the Italian 'flash' model will require a much stronger design input and faster access to fashion fabrics than is currently available in New York City.

The main impediment to fast fashion, however, 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 dominate all levels of the fashion pyramid and these chains have almost universally centralized their buying decisions. The fast fashion market niche for the New York garment district also requires a flexible retailing model 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.

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

Can these options for fast fashion be applied to the United States? After all, maybe fashion products are not replenished for good reason, financing young designers may be prohibitively risky, and large U.S. retailers may be so successful with their current supply chains arrangement that there is no need to experiment with European-style flexibility. If, however, there is any prospect for the U.S. apparel industry to carve out durable 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 tempt offshore competitors. These are qualities that are present in New York City, and one or two other urban garment districts, but which are unlikely to survive much longer without substantial supply chain reforms.

A blueprint for similar reforms was even successful in New York City in the 1920s and 1930s when New York was a center for fast fashion products. These products were designed by relatively small manufacturers in large numbers and there was great uncertainty "...not only among manufacturers as to what to make, but also among retailers as to what to buy..." (National Retail Dry Goods Association, 1937, pp. 147-148). This market was further unsettled

by the rapid copying of designs, which created further incentives for the continuing and rapid development of new styles (Teper, 1937). Problems of fashion uncertainty and piracy of styles were particularly prevalent in women's garment production where there was extreme product proliferation (Grieg, 1949, pp. 29-30). 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).

Because of this demand uncertainty, retailers were generally reluctant to order goods ahead of actual demand, preferring instead to order a few items at the start of the season followed by rapid replacement of the styles that sold (Teper, 1937; Carpenter, 1972). 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 even 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.

There is also some prospect that a flexible retailing model may be revived. One possibility is that boutiques and small regional chains that specialize in serving specialized customers 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 highly "differentiated", but very similar, products available from large specialty chains and department stores. The success "Made in Italy" fashion products in Europe and of stores such as Zara that offer clothing products with shorter life cycles and greater variety of choice may be a signal the potential for shifting consumer preferences from mass fashion to more fashionable products with very short life cycles.

However, the barriers to flexible retailing remain formidable. Our surveys in New York City find that large retail chains remain firmly convinced that their 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. It is difficult to this convince them to replace this mass production and marketing system with a model of flexible retailing

served by clusters of independent designers and small manufacturers and contractors that is largely untested in the United States. The “systemic” biases of technology, scale, and product innovation and the path-dependent evolution of this system has successfully competed against these sources of flexibility and the low costs of fashion-basic products and the limit pricing strategies of fashion-basic retailers may be remain a barrier to entry for new designer and fast fashion products.

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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

Table 2
Distribution of Establishments By Size of Employment

Year	1-19	20-49	50-99	100-249	250-499	500+
Mass Production						
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
Lean Retailing						
1990	61.8	17.5	9.7	7.6	2.6	0.8
Survivor Production						
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 NAICS series						

Table 3
Distribution of Employment By Size of Establishment

Year	1-19	20-49	50-99	100-249	250-499	500+
Mass Production						
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
Lean Retailing Production						
1990	8.1	12.9	15.8	27.2	20.5	15.4
Survivor Production						
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 NAICS 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 NAICS series

Table 5

New York City Apparel Employment and Share of National Employment

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

*NAICS Series Begins

Table 6
New York City Share of Women's Wear Employment

1980	16.8%
1981	17.0%
1982	17.1%
1983	16.6%
1984	16.6%
1985	17.2%
1986	17.0%
1987	16.5%
1988	16.8%
1989	17.1%
1990	17.8%
1991	17.8%
1992	17.6%
1993	18.1%
1994	17.9%
1995	18.2%
1996	19.4%

199	
7	20.8%
199	
8	21.7%
199	
9	23.1%
200	
0	23.1%