

**INDUSTRY STUDIES ASSOCIATION
WORKING PAPER SERIES**

Garment District Performance:
S(weatshop)-Efficiency vs. I(nnovation)-Efficiency

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2008

Industry Studies Association
Working Papers

WP-2008-27

<http://isapapers.pitt.edu/>

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Draft: April 28, 2008

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This paper was prepared for the Alfred P. Sloan Foundation's Annual Industry Studies Conference, May 1-2, 2008. It is based upon work supported by the National Science Foundation under Grant No. 0328635, the Fiscal Policy Institute and the Garment Industry Development Corporation, the Alfred P. Sloan Foundation, the International Labour Organization, and the Harvard University Center For Textile and Apparel Research. We are grateful for assistance from Sarah Crean and Seth Myers in the New York City research and Elisabeth Parat for the French materials. Our colleagues on this project –Lynn Oxborrow, Paolo Crestanello, and Daniela Bigarelli have provided helpful comments throughout our long association. Brad Rice provided data on regional specialization as well as very helpful research assistance on the project. We also thank participants at conferences and seminars organized by Society for the Advancement of Socioeconomics, the Federal Reserve Bank of Boston, the Centre for Research in the Arts, Social Sciences and Humanities at Cambridge University, the International Working Party on Labour Market Segmentation, the Regional Science Association, and GIDC in New York City. The materials on the Cholet garment district draw upon an earlier paper with Bruno Courault (Courault and Doeringer, forthcoming).

Abstract

Garment districts have always had a form of distinctive industrial organization arising from strong agglomeration economies based on common skills and the need for direct coordination among fashion designers, manufacturers, contractors, and buyers. These local clusters of apparel-related firms are often populated by small and medium-sized enterprises whose production is coordinated by large manufacturers, jobbers, or other “lead” firms. However, large manufacturers are disappearing from garment districts in the United States and other industrialized countries as import competition forces downsizing and business closures. Increasingly it is the smaller firms that tend to survive.

Based on field research, this paper will compare the different evolutionary paths of the economic structures, contracting arrangements, and innovation patterns in the garment districts of New York City and Cholet, France. It finds that the two districts had similar economic organizations through the early 1980s, but that they have subsequently responded in very different ways to continuing import shocks. New York City has adopted an enhanced version of its traditional hierarchical contracting mechanisms between jobbers and contractors, whereas Cholet has abandoned hierarchical contracting in favor of more collaborative relationships with external supply chains and a greater reliance on “co-contracting” relationships within local production networks. Both New York City and Cholet continue to draw upon standard sources of agglomeration economies, but have adopted a different set of arrangements for promoting dynamic efficiency. The experience of these two districts leads us to posit two distinctive models for improving garment district performance – a sweatshop model (S-efficiency) and an innovation model (I-efficiency). These models are fruitful for understanding the performance of other garment districts in France, Italy, and the UK that are part of our study.

Introduction

Apparel was once a major manufacturing industry with over 1 million workers as late as 1980. Although imports have sharply reduced domestic employment, the U.S. apparel industry still employs about 200,000 workers (2006). New York City and the Los Angeles area remain the largest garment districts, accounting for over 40% of national employment, and slightly over half of all employment is in the ten largest apparel MSAs. Similar declines have occurred throughout Europe and, among high-wage countries, only Italy remains a net exporter of clothing (Crestanello and Dalla Libero, 2003). While economic theory tells us little about the speed with which comparative advantage operates, it is somewhat surprising that 20% of the jobs in a labor-intensive industry like apparel can survive after more than three decades of rapidly-growing production capacity in countries with far lower wages and generally newer equipment.

Low marginal costs relative to competing countries, large scale economies of production, and labor-saving technological change may explain the survival of highly-mechanized apparel sectors such as hosiery and home furnishings, but these factors cannot account for the survival of much of clothing manufacturing. Traditional agglomeration economies provided by shared pools of labor, proximity to suppliers and customers, and efficient local contracting relationships found in many garment districts may be contributing to the survival of clothing manufacturing (Porter, 1994; Kranton and Minehart, 2001; Uzzi, 1996), but many of these externalities are becoming less important as supply chains become more global (Rice, 2008). Proximity to markets coupled with flexible manufacturing were widely seen as an emerging advantage for domestic production in the late 1980s and 1990s when “quick response” supply chains were being developed to serve new markets for just-in-time supply to large retailers (Abernathy, et. al., 1999, Courault and Parat, 2000; Oxborrow, 2000), but quick response production proved to be transferable to nearby low-wage regions, such as Mexico and the Caribbean where deliveries are nearly as fast and production costs are lower (American Apparel and Footwear Association, 2002; Bair and Peters, 2006). Thus, the prospects for the industry

remain somewhat clouded.

Our field research, however, points to new possibilities for improving the performance of apparel firms and garment districts through organizational innovations, organizational incentives, and entrepreneurial conduct among small contractors. As the industry declines, the firms and districts that survive cluster more and more clearly into two distinct garment district “models” of industrial performance, I(nnovation)-efficiency and S(weatshop)-efficiency.

The I(nnovation) efficiency model is based on entrepreneurial firms and districts that gain productivity and cost advantages from collaborative production relationships, the sharing of knowledge among local suppliers, and high levels of entrepreneurial activity that is often led by small firms. Italian garment districts are the traditional examples of such collaborative relationships and entrepreneurial conduct (Brusco, 1982; Piore and Sabel, 1984; Bigarelli, 2000; Bigarelli and Crestanello, 2004 and similar arrangements are now emerging in France (Courault and Doeringer, forthcoming).

The S(weatshop) efficiency model is derived from the more traditional hierarchical contracting practices in the apparel industry in which small manufacturing firms are almost wholly dependent on the larger buyers that provide them with orders. These buyers – retailers, manufacturers of branded products, and intermediaries like wholesalers and jobbers – control much of the innovation that occurs within supply chains while leaving contractors to provide largely undifferentiated manufacturing capacity. The survival of these contractors depends critically on cutting costs and improving performance through the intensification of sweatshop practices – speed-ups in production and sub-standard pay and working conditions.

We use the Cholet garment district in western France to illustrate the I-efficiency model and the New York City garment district is our example of the S-efficiency model. While neither model has halted outsourcing and import-penetration, both have helped to mute the comparative disadvantage of high-wages and both point to new strategies for slowing job loss.¹

¹ The New York case study draws upon survey data collected during a series of in-depth interviews and surveys with a representative sample of 34 domestic apparel firms in the

National Contexts: Trends in the U.S. and French Apparel Industries

Both the U.S. and French apparel industries flourished through the 1970s as market demand expanded and large firms benefited from economies of scale and scope. By 2003, however, import competition had cut U.S. apparel employment to 28% of its level in 1980 while French apparel employment fell to 23% of its 1980 level. Apparel firms downsized and closed in both countries and the industry has been rapidly “hollowing out” as manufacturers abandoned production in favor of design and marketing activities for products sourced in low-wage countries (Palpacuer, 2002; Courault and Doeringer, 2007). While the employment declines in the industry are well-documented, a series of other important structural changes in the industry have received much less attention – the decline of large firms engaged in mass production, the corresponding increase in small firms producing relatively small orders, the growing geographic concentration of the industry, increasing specialization among garment districts, and changing contracting relationships within garment districts and apparel supply chains.

The Decline of Large Firms

Small and medium-sized firms (SMEs) with fewer than 50 employees have always outnumbered large apparel firms (those with more than 200-250 employees), but as late as 1980 there was a significant large firm sector engaged in mass production that accounted for a large share of employment and output in both countries (Table 1). Five percent of U.S. apparel establishments had 250 or more employees in 1980 and employed 36% of all apparel employees while 9% of French apparel establishments had 200 or more in France and accounted for 46% of the workforce. Large firms, however, have now largely disappeared in both countries. By 2001, the fraction of U.S. apparel

New York City garment district in 2003 along with a counterpart survey in 2003 of 116 unionized apparel contractors in New York City conducted by the UNITE, the major apparel trade union in New York City. The Cholet study is based on surveys conducted in 1991 by Bruno Courault, a second set of surveys in 1996-1997 by Courault and Elisabeth Parat, and periodic updates in subsequent years. A total of 113 apparel and textile firms participated in the French study, of which 38 were surveyed in both time periods.

establishments with 250 or more employees had fallen to 2% and the employment share of these large establishments was down to 30%. In 1995 (the last year for which French data is available) only 4% of French apparel establishments had 200 or more employees and these large firms employed only 24% of the apparel workforce.

The disappearance of large establishments was accompanied by growth in the importance of SMEs in both countries. The share of establishments with fewer than 50 employees rose from 72% (1980) to 88% (2001) in the United States and their share of apparel employment rose from 21% to 30%. Among French apparel establishments, the fraction with fewer than 50 employees rose from 65% (1980) to 73% (1995) and their share of employment increased from 24% to 41% during the same period. In both countries, the greatest shift was towards establishments with fewer than 20 employees.

The Decline of Mass Production

Prior to the 1980s, the dominant mode of post-war apparel production in the United States, and to slightly lesser extent in France, was mass production. A major structural characteristic of this mass apparel industry was a division of supply chain responsibilities between large manufacturers and smaller contractors. Large manufacturers of mass market products developed designs and brands, bought fabric, performed pre-assembly activities like pattern-making and cutting, and assembled much of the production. They turned to smaller contractors for the production of simpler products (such as trousers and slacks), specialized tasks such as hand-sewing and finishing, and for supplemental production during periods of peak demand. For less standardized and higher fashion products, “jobbers” and wholesalers often served as intermediaries for large manufacturers and retailers by acquiring fabric and commissioning contractors to assemble and sew garments. As large retailers and domestic manufacturers turned to low-cost foreign suppliers, and as large manufacturers disappeared, mass production became less common in both the United States and France and small contractors began to lose their traditional markets.

Increasing Geographic Concentration

Industrial decline is resulting in greater concentration of production in the largest garment districts. A recent analysis of U.S. garment regions and districts reports that the share of national apparel employment in the in 5 largest U.S. garment MSAs rose from 28% in 1990 to 47% by 2004, and from 33% to 53% in the 10 largest MSAs (Rice, 2008). Similar changes occurred in France where an industry that was once widely dispersed throughout the country became more concentrated in four regions – Paris, Lille, Cholet, and Roanne (SESSI, 1998).

Increasing District Specialization

The apparel industry is divided into product categories defined by type of garment, fashion content, quality, and price. Basic commodities (knit underwear and hosiery) change very little from year to year and are mass-produced, often with capital-intensive technologies, in the few large firms that remain. Fashion-basic products (dress shirts, casual slacks, and knit sportswear) have product cycles of 2-3 years and are produced using more labor-intensive mass production techniques and highly-specialized labor. “Quick fashion” products experience rapid style changes within a season, but are often of relatively low quality and can be quickly produced in moderate quantities by SMEs. Fashion products with significant design content, costly fabrics, and excellent quality (higher-priced ready-to-wear fashion products, designer collections, and haute couture) have product lives of a season or less and are produced in small quantities by highly-skilled workers in relatively small firms.

Our field research suggests that districts are becoming more specialized as the industry declines and Rice (2008) has shown that product specialization in the U.S. apparel industry increased substantially during 1990s, as measured by a modified Herfindahl index. Surviving firms increasingly specialize in capital intensive apparel products that can be mass produced, products with short life cycles that must reach markets quickly, and products for which markets are relatively small. The largest U.S. specializations are in capital-intensive industrial products like home furnishings and automotive and apparel trimmings, where high labor costs are a minimal disadvantage. However, the majority of specializations in both the United States and France are in

knitted and sewn clothing.

The largest U.S. garment districts (New York City and Los Angeles) have long specialized in women's wear (SIC 233), which accounts for roughly half of all employment in these districts. France has come to specialize in women's and children's wear, with Paris specializing in a wide range of fashionable products from low-end "quick fashion to haute couture, the Cholet region in children's and women's wear, and Roanne in women's knitwear. District specialization is an important component of industrial survival because of its contribution to agglomeration economies. Rice (2008) finds that product specialization is correlated with a slower rate of decline in apparel employment at both the state and MSA level. His simulations show that a one point increase in a 1,000 point Herfindahl index is accompanied by an increase apparel employment at the state level by 10 workers. Bringing all states up to at least the median level of specialization for the United States would translate into a 55% increase in national apparel employment in 2004.

Common Trends and National Differences

Despite these common trends, there are substantial difference in how firms, supply chains, and garment districts have evolved in the United States and France. These differences are best illustrated by the radically different patterns of district organization and business conduct found in Cholet and New York City.

The Cholet Garment District

Cholet, located in the Pays de Loire region of western France, started as a linen textile district, but began to shift to the manufacture of simple children's wear during World War II as its large textile firms sought to diversify into downstream clothing production. The post-war consumer boom fueled Cholet's expansion into a broad-based garment industry, but by the 1960's Cholet had begun to specialize in women's and children's wear.

Cholet's successful development was led by large firms that could exploit scale economies along with the district-level advantages of a flexible and productive workforce and a large regional market for local suppliers. The large-firm sector typically consisted of

companies with 4-5 branch plants each of which employed 100 or more workers. Attached to these branch plants were 4-5 smaller contractors that each employed between 20 and 80 workers.

The large manufacturers were the focal point for manufacturing within their supply chains. They were responsible for design and product development and the largest firms (such as *Albert* and *Newman*) established well-known regional brands. These firms solicited orders primarily from independent retailers in the region, produced a wide range of products, and had the flexibility to handle many different fabrics, products, and levels of quality. They acquired fabric and other inputs, organized in-house production, and controlled their contracting networks.

Local contractors depended almost entirely on their large firms for orders, while the large manufacturers relied on contractors for both specialized skills and a reserve production capacity that could be quickly activated in response to spurts in demand. This flexibility was reinforced by the agglomeration economies of a reliable and skilled local labor pool that was willing to work long hours when necessary and with an abundant supply of part-time female workers for meeting peak demand. The absence of unions, strikes, and restrictive work practices further contributed to workforce productivity and flexibility.

Scale and agglomeration economies, flexible production methods, marketing skills, and strong regional brands effectively positioned the Cholet region to take advantage of the further opening of large apparel markets with the advent of the European Common Market in the 1960's. By the end of the 1970's, employment and production among Cholet's large apparel firms reached all-time highs with large firms directly employing about 8,000 workers and their contractors employing another 6,000 workers .

The Decline of Large Firms

Cholet's clothing industry began to decline in the 1980's under the combined influence of slowing post-war growth, the displacement of independent retailers in the region by aggressive national specialty chains and hypermarkets, and the growing reliance of these national chains on foreign production. By the late 1980's, apparel employment in

the region had fallen from 8,000 to 2,000 as many of Cholet's large firms and most of their contractors closed. Plant closings and job losses continued and, by the early 2000's, large firms had almost completely disappeared from the district.

The most vulnerable large firms were those that remained dedicated to traditional products, traditional mass production manufacturing methods, and the traditional hierarchical model of contracting. The few large firms that survived had downsized substantially and adopted new business strategies. One strategy was to continue to supply their traditional products, but to delocalize almost all production to low wage countries. Lowering production costs and prices helped to sustain, and in some cases expand, the sales of these firms. A second was to develop new branded product lines, again supported largely by delocalized production, first to Morocco and later to Romania. Some large firms also launched new retail chains to promote their brands.

Niche Markets and the Resurgence of Contractors

The demise of the large manufacturing sector and the outsourcing of production by the remaining "manufacturers" in Cholet resulted in a sharp loss of orders for Cholet's small and medium-sized contractors. Deprived of orders, lacking any connections to retailers, and having no experience in product development, fabric acquisition, or other functions previously provided by their large manufacturers, many of these contractors went out of business.

The minority that survived, however, went through an entrepreneurial transformation to become more like the manufacturers from whom they once received orders. They developed new markets based on higher fashion, better quality, and lower costs. They formed new business relationships with a range of customers from outside the region and they switched from mass production to smaller orders for niche markets.

These contractors are now responsible for most of the apparel manufacturing that remains in Cholet and have taken on a range of supply-chain activities that is far broader than that of the traditional contractor. Some contractors directly manage delocalized production while others specialize in providing design services. Contractors in general tend to employ workers with higher and more diverse skills than previously were needed

and they have developed new competencies linked to the creation and development of products, speedier manufacturing and logistics, and overall responsibility for quality control within delocalized supply chains.

These “new” contractors, along with the few surviving manufacturers, have also focused the region on a sharper set of product specializations. Higher-end children’s wear has become increasingly important, along with serving high fashion women’s wear markets (Christian Dior, Yves Saint Laurent, Kenzo) and some lower-priced market niches -- “quick fashion”, mid-level fashion, and sportswear.

From Hierarchical Contracting to Collaborative Supply Chains

The niche markets for these specializations demand flexibility and attention to design and quality control, as well efficiency, which has brought a dramatic change in organizational relationships within supply chains. In place of the hierarchical, “command and control” relationships between dominant large firms and dependent contractors, Cholet’s remaining contractors have developed a variety of more entrepreneurial and collaborative supply chain relationships.

Contractors that can produce the entire range of products from models and samples to full collections often work in collaborative partnership with their downstream customers. At the same time, horizontal “co-contracting” networks have been formed within the region -- formal joint ventures, informal collaborations among independent firms, and “kinship networks” of firms owned or managed by members of the same family. These collaborative networks provide the region with the flexibility both to serve higher-fashion markets where order sizes are small and the pooled production capacity to operate on a relatively large scale when necessary.

Brand Specialization and New Retailing Initiatives

A further set of strategic developments in Cholet is the establishment of national brand names by Cholet’s new and surviving manufacturers. During the past 20 years, Cholet has become France’s leading district for branded children’s wear and several of Cholet’s manufacturers have developed new brands that they market through both established retailers and their own newly-established retail chains

The best example of this development is Catimini, a producer of high-fashion, high-quality and high-priced branded children's wear products. Catimini built its own retailing network by acquiring some of its independent retail customers and then adding additional franchised boutiques. By the end of the 1990s, Catimini owned about 200 shops in France and other countries and supplied about another 100 franchise operations. By gaining market share, differentiating products, building brand names, and establishing vertically-integrated retail chains, Cholet's small manufacturers like Catimini are regaining a measure of the market power once held by the region's large manufacturers.

The New York City Garment District

The New York City garment district has always had a large number of SMEs that serve women's wear markets, but it also once had a significant number of large manufacturers whose in-house manufacturing capacity was augmented by small contractors using contracting networks much like those in Cholet. When mass fashion markets first emerged in the United States in the 1920's and 1930's, there was massive uncertainty about fashion trends (National Retail Dry goods Association, 1936; Grieg, 1949). New York's large retailers and flexible contracting networks of small manufacturers, jobbers, and contractors made the New York garment district the center for serving these uncertain fashion markets by developing quick and adaptable production methods.²

Like Cholet, the New York garment district flourished during the immediate post-war period, fueled by strong domestic demand for fashionable women's wear at moderate prices along with little competition from imports. Growing markets helped manufacturers to increase in size and add additional contractors, particularly those manufacturers with strong product design capabilities and well-established brand names and retailers began to develop house brands that they sources in New York City.

Employment reached its peak in the mid-1970s and then began a long decline.

² For example, orders for the spring season placed in December could be delivered beginning in January (Carpenter, 1972) and reorders could be supplied in a week to ten days (Magee, 1930). By the end of the 1930's, the New York City garment industry was producing 125,000 different styles of dresses in small lots of 250 to 1,000 or more (Hochman, 1941).

Apparel employment in New York City fell by about two-thirds between 1980 and the early 2000s and the number of establishments has fallen by over one-half (Chart 1). Large suppliers have almost entirely disappeared and the majority of the small and medium-sized firms are serving low to mid-range fashion markets.

While New York City remains a major U.S. fashion center, housing the design and buying offices of many manufacturers and retailers, the demand for high-end fashions has been falling (Agin, 2000) and most retailers now rely largely on imports. Few large manufacturers do any manufacturing and instead focus on design, brand marketing, and sourcing from offshore supply chains. Even some smaller manufacturers have begun to outsource their production through collaborative arrangements with offshore production facilities in nearby countries, such as the Dominican Republic, and sometimes in China. What is left of domestic manufacturing is now concentrated among small manufacturers and jobbers and their small contractors.

The Hierarchical “Jobber System”

Early on, the New York City garment district developed a supply chain model, known as the “jobber system”, to deal with the uncertain demand for fashion-sensitive women’s wear products. Manufacturers typically contracted the volatile component of demand to small firms that could expand and contract their output and employment at relatively low cost in much the same way as in Cholet.

However, manufacturers and retailers in New York also turned to “jobbers” to simplify the contracting process, particularly for smaller orders and more fashionable products. Our field research shows that some retailers and small manufacturers also operate as “jobbers” in working with New York contractors. Jobbers serve as intermediaries between large manufacturers and retailers and small contractors. Jobbers receive designs and fabric from their customers and contract the cutting of garment parts and garment assembly operations. Some jobbers will purchase and cut fabric and develop designs. Regardless of the particular production arrangements, the jobbers control fabric supplies for contractors, contacts with customers, and the management skills needed to organize contracting networks, while the contractors carry out most of the garment assembly.

Typically they draw upon a stable group of core contractors and it is common for these jobbers to share their fluctuating orders among their core contractors to stabilize their contractor supply base. Over half of all firms in our sample of contractors receive their orders from jobbers and jobber/manufacturers and another 40% are a mixture of contractors and jobbers who receive orders directly from retailers.

Hierarchical contracting relationships are pervasive at each level of these supply chains from large retailers and manufacturers, through jobbers and small manufacturers, to contractors. Each segment of these hierarchical supply chains contributes to the efficiency of the jobber system. The large retailers and manufacturers at the end of the supply chain that have the mass buying power, sophisticated information and logistics technologies, and the capacity to design products, analyze markets, develop branding and marketing strategies, and source production that largely govern the workings of the supply chains that draw upon New York City suppliers. Manufacturers are able to produce at efficient scale while reducing their exposure to market risk and uncertainty by transferring the volatile component of demand to contractors and making jobbers responsible for the timely supply of products at a pre-determined cost. Jobbers add value to the apparel production process by creating efficiencies of coordination and information, and in the management of contracting transactions in what are highly fragmented and volatile markets (Kranton and Minehart, 2001).

Their contractors, in turn, develop the competencies of managing the workforce of a labor-intensive industry -- recruiting, training, and motivating largely-immigrant employees so as to keep labor costs low -- and of organizing small-scale production in volatile markets that demand speed and flexibility. The efficiency of contracted production is further reinforced by the incentives for speed and productivity that are provided by piece-rate compensation, by opportunities for labor specialization and learning-by-doing that increases with the size of orders, and by the scheduling and organization of work flow so as to minimize production bottlenecks and reduce buffer stocks of work in progress. As a result, the variable costs of labor and materials are relatively constant over a wide range of output and average unit costs could be expected

to fall until full capacity was reached.

Niche Market Specialization

Two substantial changes have occurred in the New York garment district as production has declined. One is that it gained a larger share of national apparel employment, rising from about 17% in 1980 to almost 25% by 2001 when this growth began to slow, and also a larger share of national women's wear employment during the same period (Chart 2). In 1981, only half of New York City's apparel workers were involved in the production of women's wear, but that percentage rose to 65% in 1991 and to 71% in 2001. However, the women's wear specialization has become less important in the 2000s. Los Angeles is now the leading U.S. women's wear district and the top three product specializations in New York now account for a somewhat smaller share of employment in 2004 than in the early 1990s (Rice, 2008)

Our field survey shows that most of the firms that survive in New York, now serve small niche markets. The highest value-added niches are in high quality, high-end women's fashion products, custom-made men's clothing, fashion women's wear for regional chains and independent shops, and clothing using exotic technical fabrics that require considerable care and skill in manufacturing. Customers often include branded manufacturers (such as Ralph Lauren and Talbots), leading department stores (such as Barneys and Neiman-Marcus), and designers such as Liz Claiborne.

More vulnerable niche markets include various middle-level products that are highly specialized -- surgical garments and "plus" size women's garments -- or involve special orders such as repair work on damaged imports, rework of products that are not selling, and fill-in orders for low-end dresses and sportswear. This set of niche markets is characterized by small orders that are often commissioned through jobbers and that require supply speeds that cannot be achieved by large domestic suppliers or offshore suppliers. Fifteen percent of New York City suppliers surveyed can fill orders within a week or less and 40% within 2 weeks or less. This is a significant speed advantage over the order fulfillment times for just-in-time inventory replenishment by large domestic suppliers of about 2-3 weeks (Abernathy et. al, 1995) and current supply times from contractors in Mexico and the Caribbean Basin as reported in our field research.

Comparing New York and Cholet

The evolution of the New York and Cholet garment districts during the post-war period exhibits many of the same elements revealed in the national data for the United States and France. Both districts have lost most of their markets and manufacturing jobs to imports as large retail clothing chains have used their buying power to eliminate independent retailers and to organize the global sourcing of apparel products. Surprisingly, it is the large and technologically-advanced mass production firms that have proved least able to compete in the global sourcing environment, while it is the small and medium-size firms that are surviving in both regions.

Both districts now consist primarily of small and medium-sized firms serving niche markets in place of mass markets. These SMEs draw upon similar types of technologies and similar agglomeration economies from common labor pools, proximity to suppliers, and local knowledge about customers and markets. Controlling for product specialization, contractors in both districts are adept at quick and flexible production. However, there are also significant differences between the two districts in their business strategies and organizational relationships.

Product Specialization

Both districts have distinct product specializations, but the product niches in New York City span a wide range of price and quality than in Cholet. Cholet is becoming increasingly specialized in women's wear and children's wear and it has been successful in moving towards higher-priced and higher value added products. New York is less specialized, its specializations have been shifting away from women's wear in recent years, and it has been moving towards lower-priced and lower-value added products.

Organizational Relationships

The hierarchical supply chain relationships in Cholet resembled those of the New York garment district until the 1980s when the rapid disappearance of large manufacturers in Cholet destroyed its "jobber" system. In order to survive, both contractors and the few remaining manufacturers were forced rethink their supply chain relationships.

In place of hierarchy, Cholet's contractors have sought to strategically diversify

their portfolios by developing collaborative relationships with a variety of large buyers from outside the region. They have identified new markets for samples and short-cycle production and some contractors are managing off-shore supply chains for large buyers. Contractors have also taken the lead in working collaboratively with one another in a variety of horizontal relationships. They work with other contractors that specialize in finishing and other narrowly-specialized manufacturing activities, they have co-contracting arrangements for producing orders that are too large for any one contractor to produce, and they have entered into joint ventures with small design firms to broaden the product development services they can offer to their customers.

Entrepreneurial Conduct

New organizational relationships in Cholet are only a part of the wider transformation of the district in which manufacturers and contractors have become drivers of entrepreneurial change. Both types of firms are establishing successful design and product development capabilities, finding new buyers outside the region to replace the large local manufacturers that have disappeared, developing more diversified commercial portfolios, and initiating new collaborations with downstream buyers.

Meanwhile, New York contractors remain in traditional hierarchical and dependent contracting relationships. They have hardly innovated at all, except when their buyers specifically request new equipment or a new service, they have none of the horizontal organizational relationships found among contractors in Cholet, and their entrepreneurial efforts are focused on competing for orders by cutting costs and being at the beck and call of their buyers. Rather than engaging in the kinds of entrepreneurial activities and innovations that are found in Cholet, the main role of New York's contractors remains largely limited to performing the integrated tasks of sewing, pressing, and packing and shipping complete garments to their clients in shortest time and at the lowest cost.

District Models of Efficiency and Change: I-Efficiency vs. S-Efficiency

New York City and Cholet provide imperfect, but nonetheless informative, natural experiments for understanding why similar garment districts respond so differently to import shocks. These are imperfect comparisons for all the reasons

associated with small-scale case studies and the drawbacks of international comparisons – differences in factor markets, consumer preferences, retail market structures, legal and regulatory arrangements, and so forth. Nevertheless, they are informative comparisons because of their similarities -- in products, production functions, the extent of the import shocks, and their remarkably similar economic structures and organizational relationships through the early 1980s.

The diverging evolution of these two districts since the 1980s provides important lessons for industrial performance. New York responded to continuing import competition by retaining the jobber system of production and adopting what I call the S-efficiency model of competition. In contrast, Cholet abandoned its version of the jobber system in favor of a radically different and more entrepreneurial system that I call the I-efficiency model.

I-Efficiency

The I-efficiency model found in the Cholet district represents a classic Schumpeterian model in which the ability of firms to initiate all kinds of innovations – shifting district specialization towards higher value-added products, increasing product differentiation by establishing new brand names, opening new markets for Cholet’s products, diversifying into the management of delocalized supply chains, integrating downstream into retailing, and changing supply chain organizations from command and control hierarchies to more collaborative vertical and horizontal relationships – promotes strong industrial performance.

The most unexpected aspect of this entrepreneurial response by Cholet’s firms is that contractors that had operated successfully in the previous hierarchical contract system in Cholet are among the leaders in introducing innovations. Some contractors are becoming “full package” suppliers with the ability to design new products and to fill large orders through co-contracting, while others have become more like jobber/manufacturers -- maintaining a limited domestic production capacity and contracting with offshore suppliers on behalf of manufacturers and retailers outside the region. These are functions previously organized by large manufacturers and contractors are becoming the new

generation of manufacturers in Cholet.

These changes are creating new forms of tacit knowledge that are shared among contractors, manufacturers, and retailers, and the collaborations that are developing are also fostering greater trust and commonality of interest within the wider supply chains in which Cholet plays a prominent role. In these respects, Cholet resembles high-performance Italian SME garment districts (Brusco, 1982; Piore and Sabel, 1984; Bigarelli, 2000; Crestanello and Dalla Libera, 2003; Bigarelli and Crestanello, 2004).

Our field research in Cholet does not reveal any unusual district characteristics that would have contributed to the launching of the I-efficiency model. Instead, I-efficiency in Cholet seems most connected to the sudden loss of markets following the closure of large Cholet manufacturers. Disappearing markets produced a culling of firms in the district in which only the most efficient and entrepreneurial firms survived. As entrepreneurial bias emerged among the surviving firms, innovating firms further contributed to the “weeding out” of traditional firms, thereby helping to accelerate the destruction of the old industrial model built on scale economies, mass production, and hierarchical contracting.

S-efficiency

The response to import competition by the New York City garment district is in sharp contrast to the I-efficiency of Cholet. Even though the pattern of job loss and the decline of large firms is similar to that in Cholet, New York has retained the traditional hierarchical contracting arrangements of the jobber system.

The durability of the jobber system can be at least partly explained by its traditional efficiencies. The combination of competition in retail markets and the mass buying power of large retailers and manufacturers forced apparel contractors in New York to be efficient by cutting costs through sweatshop practices, eliminating wasted time and materials, extracting as many gains from specialization and division of labor as possible, and drawing fully upon the agglomeration advantages of the district. In addition, the jobber-system offered efficiencies of its flexibility and speed that allowed it to serve volatile and uncertain women’s wear fashion markets. These qualities made it well suited

to accommodate the added elements of demand uncertainty and volatility created by import competition. And, unlike Cholet, the New York jobber system continued to have access to orders from larger manufacturers and retailers despite the loss of market share to imports.

However, our field research further reveals that the current jobber system in New York incorporated an innovation in organizational efficiency into the traditional jobber system. This new jobber system provides additional incentives that intensified sweatshop efficiency practices. As firms have exited the district, many of the surviving firms appear to be intensely efficient in ways that are different from both their Cholet counterparts and from the traditional firms in our New York sample, many of which seem headed for failure.

This higher effort is reported to be occurring in various ways. Production lines operate at faster speeds and workers are often expected to work overtime and on weekends to meet production deadlines. Similarly, contractors focus intensely on how to squeeze additional “minutes” out of production operations by simplifying garments in ways that are consistent with product specifications and they pressure workers to exert greater effort and speed while often demanding that piece-rates be reduced. These are well-known components of apparel industry “sweatshops” that contractors are continuing to pursue.

Contractors are also moving beyond these traditional sweatshop practices by making extra accommodations and taking on extra services for jobbers and other buyers – accepting orders in smaller quantities, making early deliveries of partial orders, revising samples more quickly, doing extra quality control and packaging, accepting design modifications in the middle of production contracts without additional compensation, and being at the beck and call of jobbers at all times to discuss production and scheduling issues, often through face-to-face meetings at the jobbers’ offices. During the course of our interviews with contractors we regularly observed phone calls from jobbers and manufacturers asking for special considerations such as priority deliveries and immediate

office visits to discuss production and quality issues, and efforts to maintain contract prices negotiated for larger orders when order sizes were reduced.

It could be argued that this intensity of effort is simply the result of competitive market pressures as imports continue to increase. The simple economics of pricing and output decisions in declining industries where reinvestment is unlikely is for prices to fall towards the marginal cost of production, since there is no need to replace capital, and for excess production capacity to emerge as firms gradually go out of business. Similarly, continued import competition could account for “speedups” and the intensification of other types of contractor effort. However, our field research suggests that a new and more powerful set of efficiency incentives has emerged in New York City because jobbers are retaining a larger number of core contractors than would occur in a standard competitive equilibrium.

In the traditional jobber system, efficiency is achieved by jobbers maintaining a core group of contractors, each of which is operating close to full capacity so as to minimize average production costs. When orders decline, standard efficiency considerations dictate that jobbers allocate their remaining orders to the most efficient contractors, while letting the least efficient contractors close for lack of orders. Because orders are seasonal, the traditional jobber system maintains some excess capacity in long-term equilibrium in order to meet peak demand, but the amount of excess capacity in the industry is growing as output declines while core contractors are being retained.

Jobbers explain their retention of core contractors in paternalistic terms. Their contractors have given them many years of loyal service and jobbers feel obliged to share whatever orders they receive with their core contractors, as they have always done in better economic times, in order to keep them in business. When contractors exit from the industry, it is their decision rather than that of their jobber, and jobbers will then share the work that remains with their smaller group of core contractors.

From the contractors’ perspective, however, their jobbers only give them enough orders to barely survive and they are under enormous pressure to cut costs, speed-up deliveries, and accommodate a wide range of other demands from jobbers in order not to

jeopardize their tenuous source of orders. Because the industry is declining and orders are shrinking, their dependence on their jobbers has increased. Even the most ambitious and productive contractors do not compete for business from other jobbers because they know that the jobber system is based on reciprocal loyalty. Jobbers neither readily terminate core contractors and nor hire new core contractors who are seeking to leave a core contracting relationship with another jobber.

Paternalistic contracting practices, reciprocal loyalty between jobbers and contractors, and long-term contracting relationships have always been a source of efficiency for the jobber system because they preserve the returns to investments in relationship-specific knowledge made by both jobbers and contractors. Contractors know their jobber's products and customer needs and jobbers know the strengths and weaknesses of their different core contractors. This knowledge allows for better communication of product and production information and allows contractors to fill orders more quickly and efficiently when compared to "arms-length" contracting. If contractors change jobbers, the efficiencies of prior tacit knowledge are lost and new tacit knowledge must be acquired. As a result, stable organizational relationships have long been the norm in New York as jobbers insist on loyalty among their core contractors and as core contractors have no incentive to switch jobbers.

However, as jobbers share a shrinking pool of orders with their core contractors instead of reducing the number of contractors as orders decline, jobbers end up with a larger core production capacity than they are likely to need in the long term and one that becomes more costly to preserve because contractors are operating at less efficient levels of output with higher average and marginal costs, relatively less-efficient contractors are remaining in business, and jobbers are incurring unnecessary costs of coordinating a larger than necessary network of contractors. Growing excess capacity diminishes the incentives for jobbers to retain all of their core contractors while increasing the dependence of contractors their jobbers for enough orders to survive.

The essence of the S-efficiency model is that the increasing possibility of insufficient orders raises the value to contractors of paternalistic work sharing by jobbers

and intensifies the “threat” incentives of business failure. Both paternalism and threat incentives encourage contractors to work harder, cut corners on production costs, accommodate their jobbers, and intensify sweatshop pressures on their workers.

The key instrument for stimulating higher effort and lower costs under the S-efficiency model is the amount of excess capacity that jobbers among their core contractors. The profit maximizing strategy for the jobber is to choose the right balance between the effort gains and the efficiency losses from excess capacity. The optimization process is for jobbers maximize profits by adjusting the number of their core contractors (N) and the level of capacity utilization of contractor i (U_i), conditional upon the jobber’s volume of orders (O), the cost function of (MC_i) of core contractor i, and the unit price of contracts (P).

Formally, the profit function for the jobber in each time period t is:

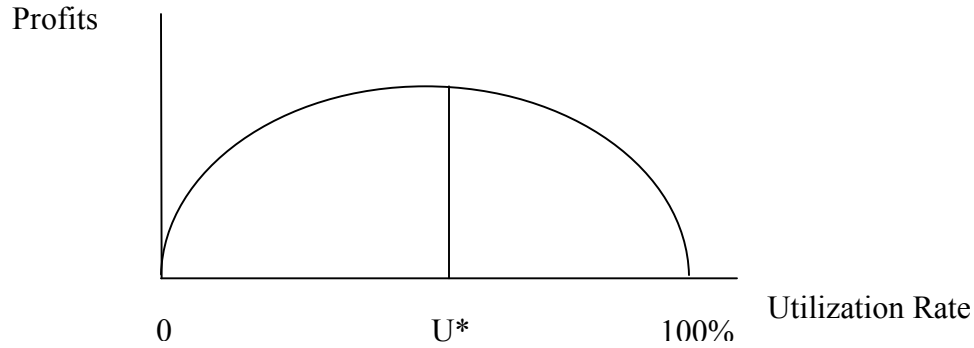
$$\text{Max } f(N_t, U_{it}, O_t, MC_{it}, P_t)$$

In a simple model where contractors have identical cost functions and $P = MC$, the number of core contractors (N) is a function of U for any given level of orders (O). Since jobbers do not produce for stock, contracting depends on the orders a jobber receives. Once a jobber has orders in hand, U becomes the strategic variable of interest in maximizing profits.

Assuming a convex profit function, jobbers will select an optimal U^* which balances the marginal gains from the incentive efficiencies of lowering capacity utilization and the marginal losses from inefficiencies of contractors producing below full capacity (see Graph 1). If orders are declining over time, the numbers of core contractors attached to each jobber should fall, but more slowly than under the traditional jobber system.

Graph 1

The Jobber Profit Function



Corroborating Survey Evidence

Our field research confirms the broad outlines of the S-efficiency model. In terms of excess capacity, shop floor visits in New York consistently revealed unutilized equipment and empty assembly lines in New York during what should have been a busier part of the season. While there was unutilized equipment in Cholet, the contractors that survived appeared to be working much closer to full capacity.

We were also able to gather systematic data on capacity utilization among New York contractors. The average firm in our survey sample has 20-25 employees and the capacity to produce 2,000 to 5,000 units a week. However, even after excluding sample shops, about one third of the firms surveyed typically receive only 1-2 orders per week and these orders are often for 500 or fewer units, implying considerable unutilized capacity. More precise estimates of capacity utilization rates come from a larger companion survey of unionized shops. Union shops have an average employment of 26 while their full-capacity employment level is over 40. Similarly, they produce an average of 2,292 units a week, but have an average full-capacity production level of 5,907 units a week for a capacity utilization rate of 39%. Excess production capacity is particularly high among the smallest and the largest firms in our sample (Chart 3). These estimates of excess capacity suggest that more than half the contractors in New York City are economically redundant under present circumstances and that current output could be sustained with fewer workers.

Finally, we looked for quantitative evidence that the number of contractors being

retained in the New York garment district fell far more slowly than employment. While the growth of the underground garment district in New York City makes it difficult to estimate how many establishments survive in New York City, national data suggest that the number of apparel establishments has fallen far less than employment (Chart 5).

The Bottom Line: Comparing District Advantages

The pattern that emerges from this data is consistent with our interview findings. Cholet's manufacturers and New York's jobber/manufacturers shed their least capable contractors when import penetration began to reduce demand for their products. As imports continued to gain market share, however, Cholet shed its large manufacturers and its least entrepreneurial contractors, and its hierarchical contracting system. From import competition and declining output and employment emerged a new district model of competition in which entrepreneurial conduct based on innovations in products, specializations, and organizational relationships that encouraged problem-solving and more-collaborative supply chain relationships. In contrast, the New York City garment district retained much of its traditional jobber system on to which it grafted a set of enhanced incentives that intensified contractor effort, emphasized cost-cutting, and resulted in the spread of other sweatshop practices -- speeding up production lines, working longer hours, providing more services to jobbers, allowing working conditions to deteriorate, and ignoring minimum wages and social insurance payments.

While it is tempting to conclude that the compounded effects of Cholet's I-efficiency model will ultimately overwhelm any gains from the enhanced cost-cutting efficiencies of New York's S-efficiency model, this is not necessarily the case. Innovations can often be imitated in lower-cost settings, while the cost, speed, and flexibility efficiencies of the S-efficiency model are amenable to a wide range of niche markets that may be too small or too time sensitive to be vulnerable to import competition. A well-known strength of the New York jobber system is the ability to respond quickly and flexibly to accommodate peak demand. Our survey data confirm that the New York garment district's suppliers can typically fill orders of 500 units in 2 weeks or less, providing fabric is available, and 30% can produce 2500 units in a week.

Moreover, it is sobering that neither the Cholet nor New York garment districts have as yet slowed the long-term loss of apparel manufacturing jobs. Nevertheless, by several measures, I-efficiency has the edge over S-efficiency.

Entrepreneurial Conduct

Although large manufacturers and retailers continue to drive much of the innovation in apparel supply chains, and even if Cholet's innovations can be imitated elsewhere, entrepreneurial conduct can still be advantageous to garment districts. While the winnowing effects of import competition on large manufacturers and non-entrepreneurial contractors may account for the survival of innovating apparel firms in Cholet, surprisingly little entrepreneurial innovation has come out of New York City's garment district.

However, our interviews in New York suggest that the S-Efficiency model may have deleterious consequences for entrepreneurial conduct. The incentives of the S-Efficiency model channel the entrepreneurial conduct of contractors into cost-cutting and effort enhancing innovations to a degree that inhibits the development of the types of innovations found in Cholet. The demands that jobbers place on the time and energy of their contractors that we observed during our field research could easily preclude other kinds of entrepreneurial activity. In addition, the pervasive dependence of contractors on their jobbers and the loyalty that jobbers demand of the contractors makes it risky for contractors to seek other markets, such as by becoming full-package contractors, or to collaborate with other contractors.

Product Specialization

Product specialization in the Cholet district is largely the result of strategic decisions by small manufacturers and contractors operating under the I-efficiency model to capitalize on higher-end children's wear and women's wear products, and to back this strategy with investments in product design, market development, supply chain reform, and downstream integration into retailing. As a result, they have succeeded in moving the district towards a high degree of specialization in women's wear and children's wear. A

high degree of specialization has, in turn, helped to reinforce the traditional agglomeration economies of the district as well contributing to the new agglomeration economy of collaboration.

In New York City, specialization is less the result of strategic decisions by jobbers or contractors than of market forces. Surviving suppliers must accept the orders that become available, rather than being able to shape the product mix and develop markets for the products they design. Moreover, the cost-cutting strategies of the S-efficiency model retards the decline of inefficient specializations by slowing the exit of firms and reducing the speed with which the district moves towards specializations in which it has the greatest comparative advantage. As a result, New York is less specialized than Cholet and even less-specialized than the average U.S. garment district (Rice, 2008). According to Rice (2008), New York's degree of specialization increased during the 1990s, but has since begun to fall. These findings suggest that the S-efficiency model is less likely than the I-efficiency model to contribute to agglomeration economies that come with specialization.

Moving Up the Value Chain

The I-efficiency model has allowed Cholet's firms to move up the value chain by specializing in products that have higher fashion content, quality, and price. New York's S-efficiency model results in a wider range of product specializations, but with a much lower average value, and New York also seems to be moving down the value chain.

Our survey reveals a substantial gap in the level of fashion and value of current production compared to that of the firms' potential production (Chart 4). For example, all six of the firms in our sample producing only budget products can also manufacture moderately priced products, five can produce "better" quality products, half can do bridge and designer quality products, and one can even produce at the level required of haute couture collections. Two-thirds of the firms are capable of doing at least one higher level of quality and half are capable of moving up two levels or more. While the wider portfolio of products in New York may be a hedge against risk and uncertainty, this advantage comes at a high cost in terms current and future value-added.

Wages and Working Conditions

The S-efficiency model places great pressure on workers – reducing their wages, raising their effort, and encouraging the deterioration of working conditions. Widespread anecdotal evidence also suggests that contractors are moving in larger numbers to New York’s “underground” garment district where there is greater use of illegal immigrant labor, sub-standard pay, and less safe and healthy working conditions. The I-efficiency model in Cholet is increasing the skills and earnings of the district’s workforce, slowing employment decline, and eliminating the incentives for “underground” production.

Options for the Future?

Variants of the I-Efficiency model can now be found elsewhere in France as well as in Italy and there are signs that it may be developing to a limited degree in the UK (Table 2). This international evidence provides an encouraging sign that the I-efficiency model may offer a generic alternative to sweatshop incentives as a means for high-wage countries to retain competitive niches in global apparel markets.

The S-Efficiency model developed by New York’s jobber/manufacturers has helped the district compete against imports by extracting greater effort and productivity from contractors and its cost-cutting efficiencies have helped the New York City garment district to remain competitive across a wide range of market niches that are too small and too time sensitive to be served by many low cost foreign suppliers.

However, this model also has its downside. At least some of its niche markets are open to entry by the types of small-scale and flexible suppliers in the Caribbean that have been gaining a foothold in New York’s market in recent years. It inhibits innovation and entrepreneurial activity among contractors that could help them to move up the value chain and it slows the movement of the district towards efficient specializations by keeping too many contractors and too many product lines at the margin of survival. It also adds little to the agglomeration advantages of the district and it encourages sweatshop conditions for workers.

Once established, the S-Efficiency model is hard to reverse because of the barriers to entry and change posed by organizational knowledge, contractor dependency, and

declining markets. Nevertheless, there is some prospect that New York could become a more entrepreneurial district. One piece of evidence is that all of the small manufacturers and about 10% of the contractors in our sample reported that they are thinking in strategic terms about their competitive problems and had at least some elements of a long term business plan, both of which can help to support entrepreneurial conduct. A second is that about one quarter of the firms in our sample report having some amount of design capability and they can also make patterns and samples and most (80%) can purchase fabric. These are competencies that are prevalent among SMEs in Cholet and are crucial foundations for becoming “full package” suppliers or full-fledged manufacturers. With the assistance of the Garment Industry Development Corporation (GIDC), some contractors are also acquiring access to product designing activities through partnerships with young designers.

Our survey further reveals the surprising finding that in the midst of substantial decline, the New York City apparel industry is still attracting new firms and new capital. Over one fifth of the firms in our survey had entered the market since 2000 and many of the owners of these new firms reported various forms of entrepreneurial and strategic behavior. Unlike the older generation of contractors who entered the garment industry in a more prosperous market environment and are now focused on issues of day-to-day survival, these new entrepreneurs intend to overcome the current business environment of excess capacity and import competition. By any measure, however, truly entrepreneurial firms are in the minority in New York City and the garment district remains vulnerable to import competition and declining demand in ways that Cholet is avoiding.

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Table 1
Establishments by Size of Employment

		Less than 20	Less than 50	More than 200	More then 250
		%	%	%	%
United States	1980	50	72		5
	1995	67	83		3
	2001	73	88		2
France	1980	17	65	9	
	1995	33	73	4	

Employment by Employment Size of Establishment

		Less than 20	Less than 50	More than 200	More then 250
		%	%	%	%
United States	1980	7	21		36
	1995	10	23		37
	2001	13	30		30
France	1980	5	24	46	
	1995	19	41	24	

Chart 1

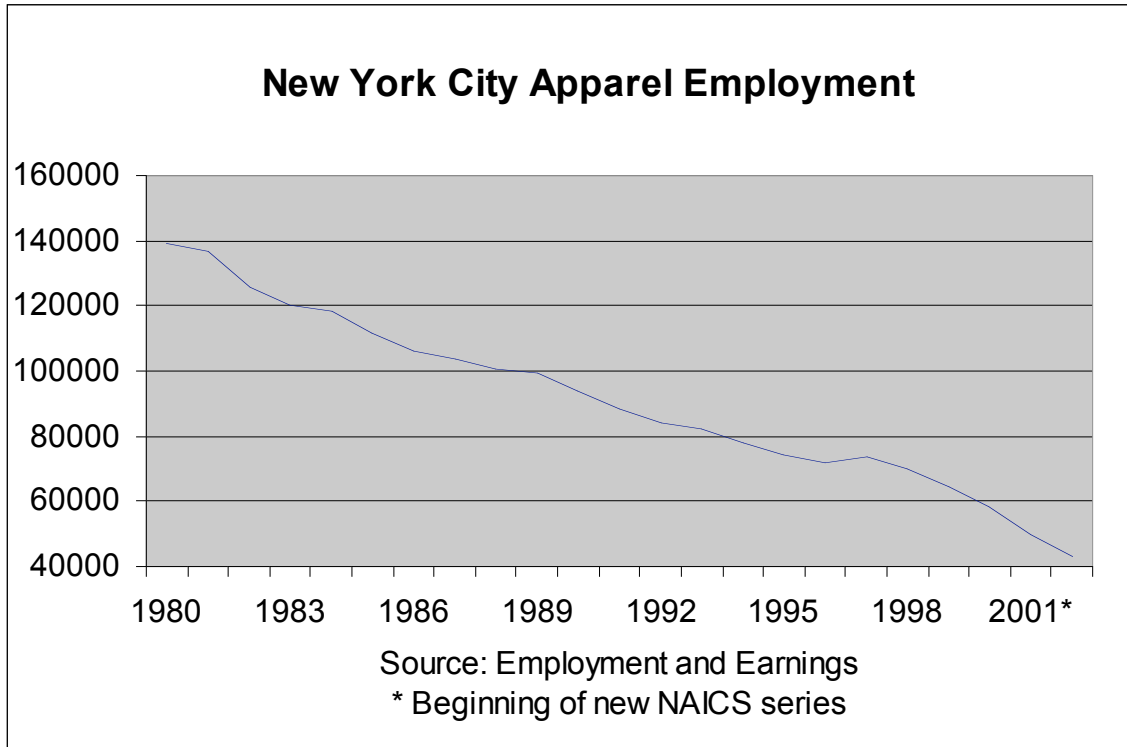


Chart 2

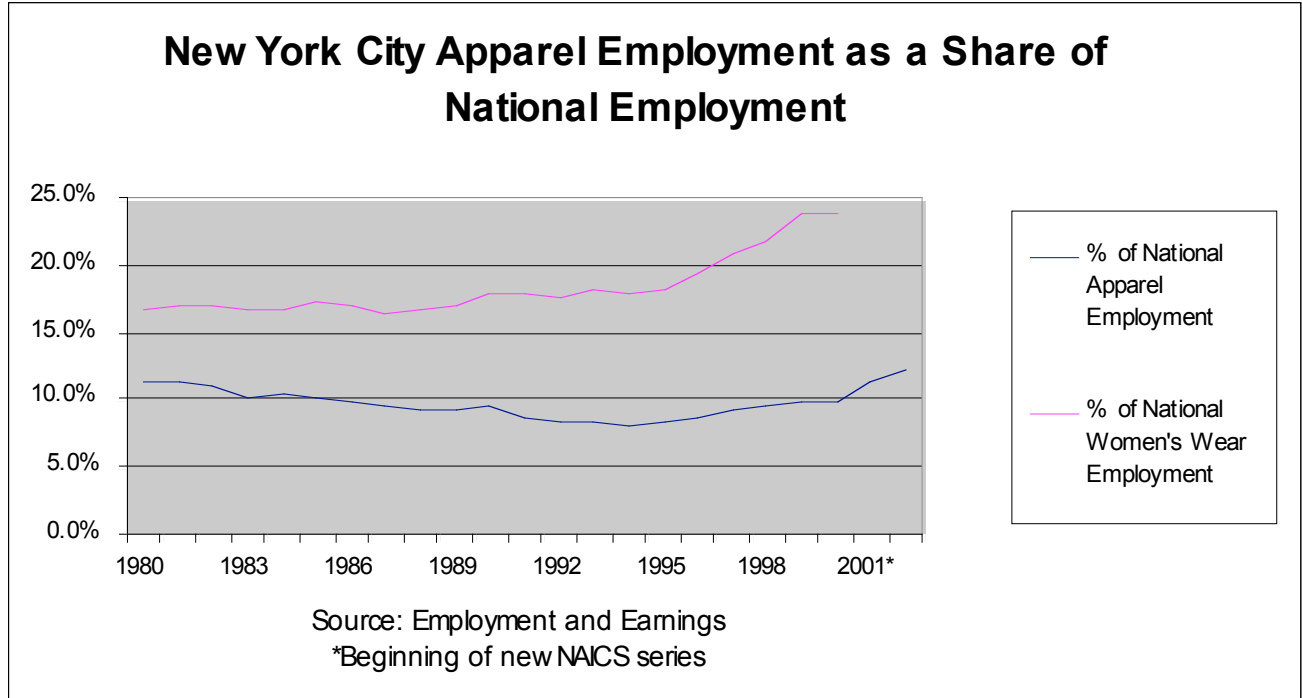


Chart 3

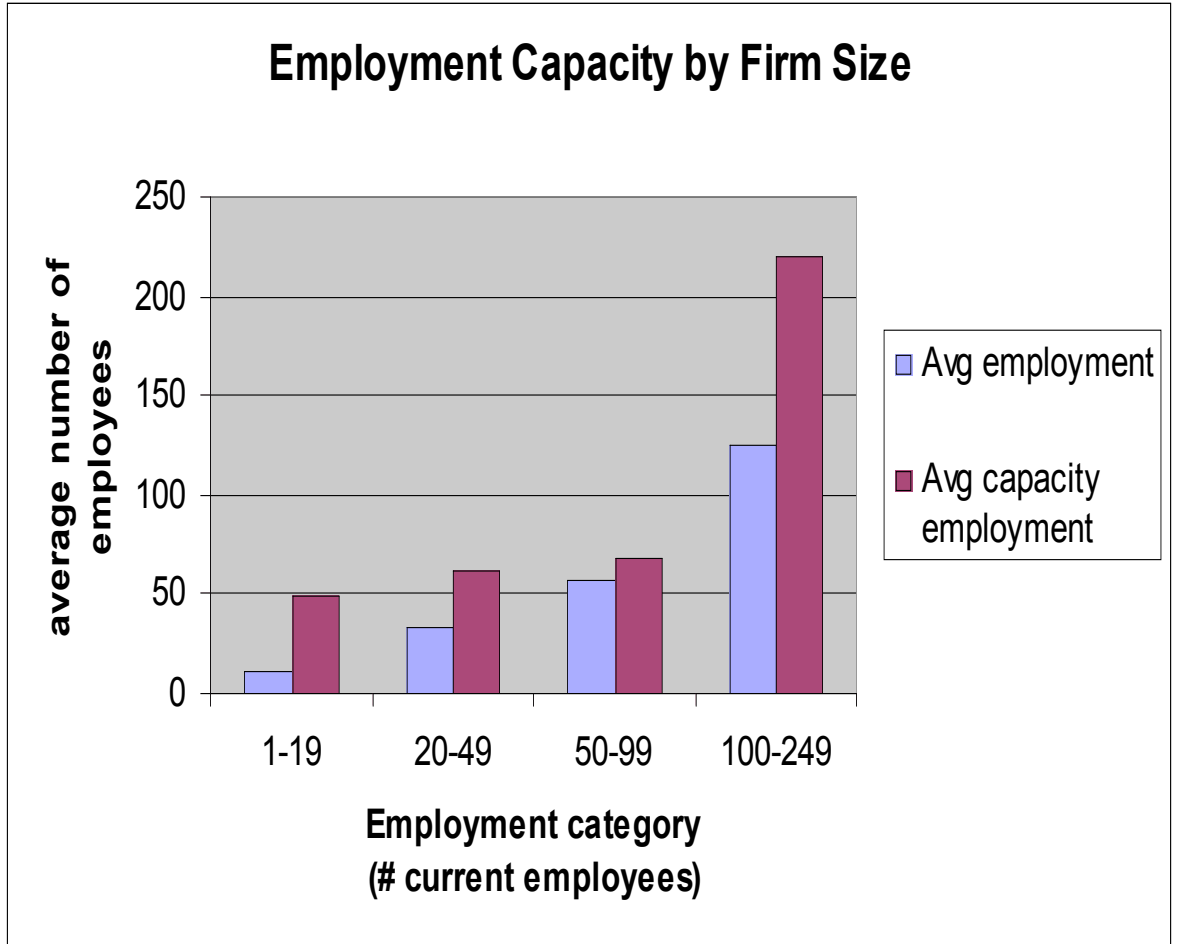


Chart 4

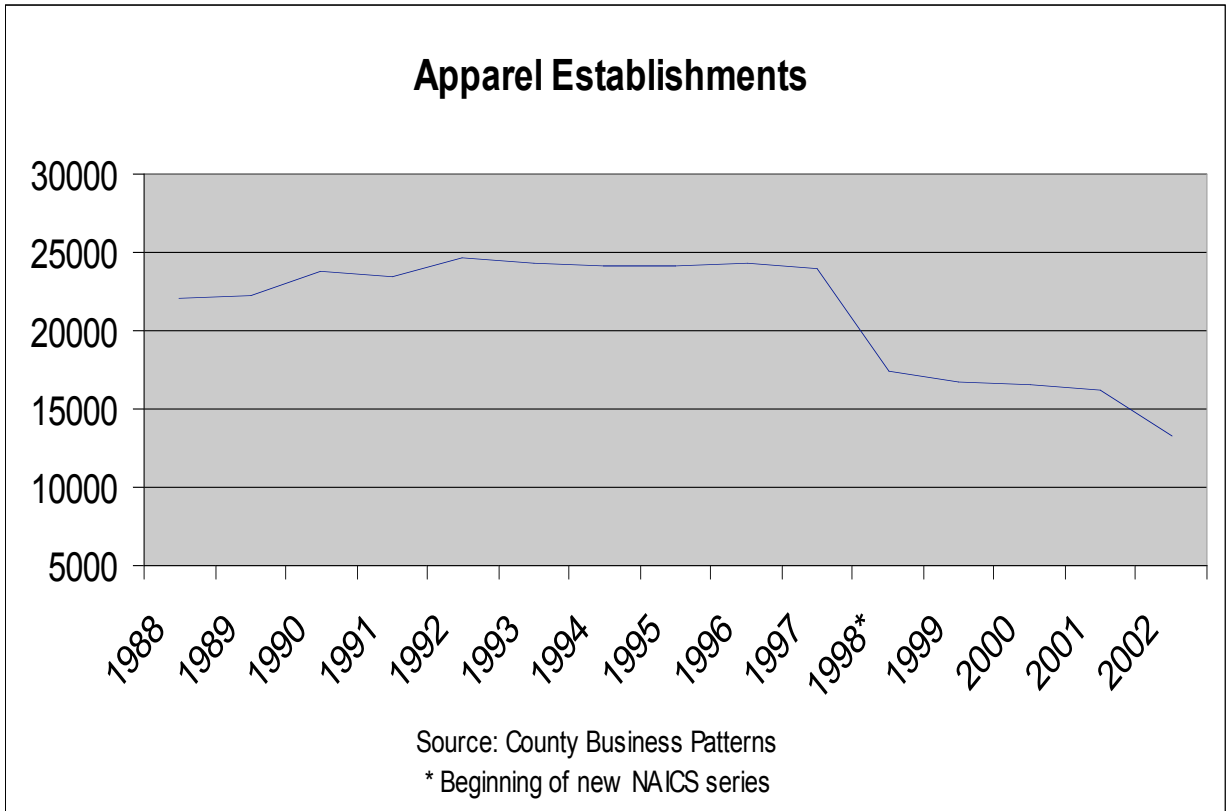


Chart 5

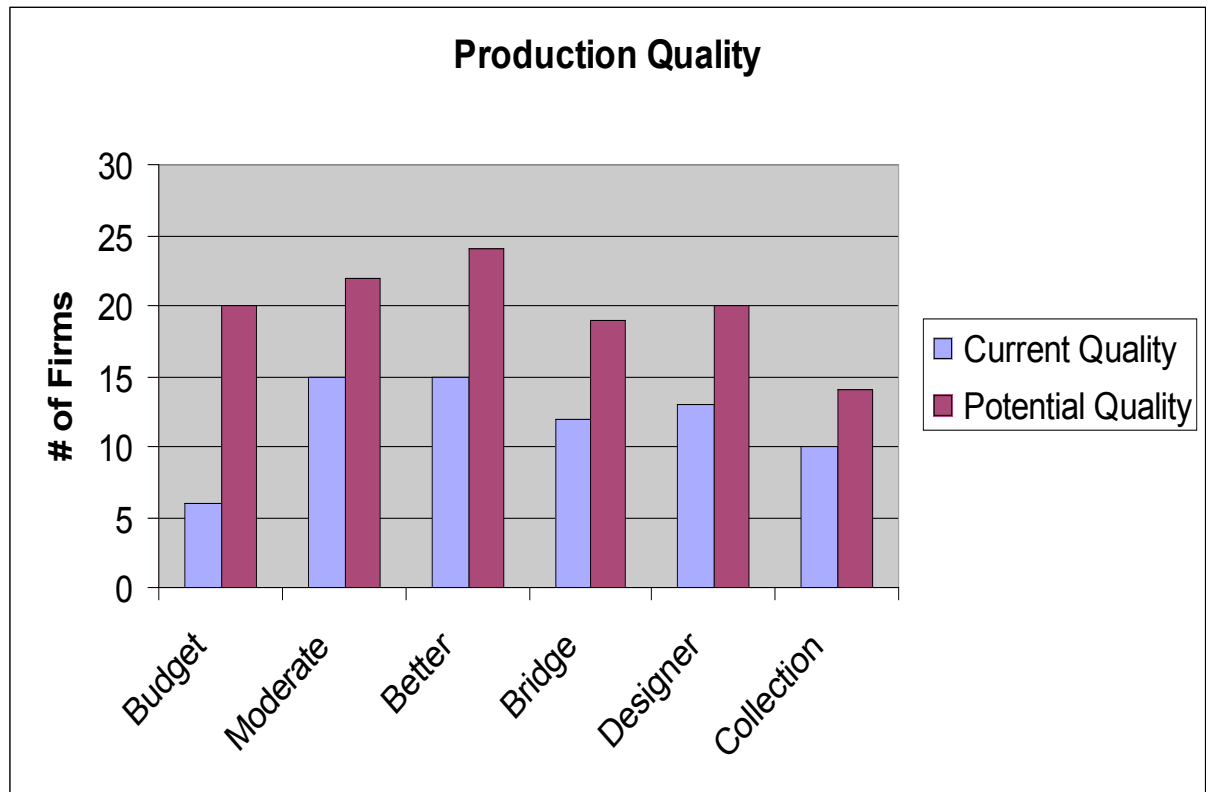


Table 2
Comparison of Garment Districts and Innovation

	New York	East Midlands	Cholet	Roanne	Carpi	Veneto
<u>Characteristics of Districts</u>						
Labor Pools	X	X	X	X	X	X
Immigrant Labor Pools	X	X			Limited	Limited
Knowledge Pools		X	X	X	X	X
Supplier Clusters	X			X		X
Buyer Concentration Important	X					
Product Specialization	Multiple	Multiple	X	X	X	X
Medium to High Fashion Products			X	X	X	X
Quick Fashion Products		X				
Basic to Medium Fashion Products	X	X				
Range of Products and Prices	X	X				
Collaborative Contracting			X	X	X	X
Scale Economies						X
Incentive Efficiencies	X					
Entrepreneurial Efficiencies	few	some	X	X	X	X
Strong Export Markets					X	X
Industry/Public Policy Assistance	X	X		X	X	X
<u>Innovation Activities</u>						
Design-intensive Products/Services	limited	limited	X	X	X	X
Brand Development			X	X		X
Product Upgrading			X		X	X
Enter New Markets	limited	limited	X			
Commercial/Management Services			X			X
New Organizational Relationships			X	X	X	X
Technology Adoption Important						X