

## **The North Carolina Textiles Project: An Initial Report**

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### **Abstract:**

Globalization is a two-edged sword, and has introduced both opportunity and loss into the US textile industry. While there have been aggregate declines in activity in this industry since 1982, these declines have not been felt uniformly throughout the industry. There have been opportunities from globalization that individual firms and communities have exploited to their advantage. This article discusses the initial findings of the authors from an ongoing research investigation of the textiles industry in North Carolina.

### **Keywords:**

Globalization, international trade, productivity, business strategy.

The phenomenon of increasingly contested international markets due to falling price and non-price barriers to trade in goods and services is one often-discussed dimension of globalization. The textile industry in particular is cited as an example of the dangers of globalization to US firms, workers and communities. Both US economic growth and the standard of living are thought to have fallen as a result of globalization in this industry.

Globalization is in fact a two-edged sword, and has introduced both opportunity and loss into the US textile industry. While there have been aggregate declines in activity in this industry since 1982, these declines have not been felt uniformly throughout the industry. There have been opportunities from globalization that individual firms and communities have exploited to their advantage.

We believe strongly that the economic and social manifestations of globalization demand detailed research. We also believe that the phased-in expiration of the Agreement on Textiles and Clothing by 2005 will lead to increased debate on the appropriate policy response to globalization in textiles and apparel in the US. Further, the debate on textiles and apparel foreshadows a broader debate on the future of all manufacturing activity in the US. Scientific research will greatly improve that debate. The Alfred P. Sloan Foundation provided our research group with a seed grant to begin research on the opportunities and pitfalls of international trade for the textiles industry in the US. We began work in the spring of 2003, and since that time we have been advancing on both fronts.

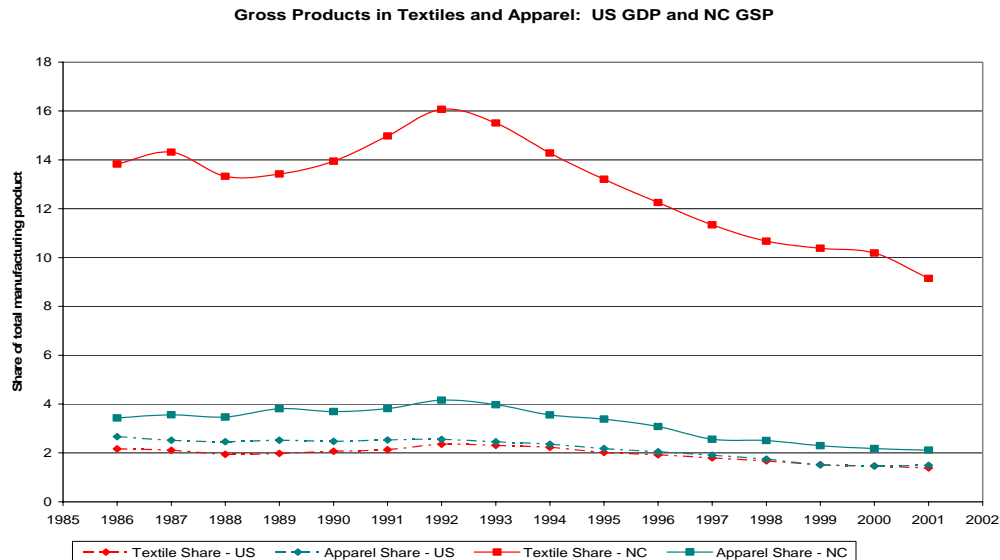
North Carolina provides a microcosm of the opportunities and dangers from globalization in the textiles industry, and so we've chosen to focus our research efforts on the firms and workers of our state. Our research design differs from typical studies in other dimensions as well. Most analyses of the impact of globalization are undertaken through data analysis of aggregate statistics at the national level. We believe that the challenges of globalization are best understood through multifaceted examination of specific industries, and specific firms within industries. Our approach incorporates case studies of North Carolina firms, interviews (of North Carolina businesspeople, workers, unions and government officials) and plant-level analysis of Census of Manufactures data for North Carolina firms with the typical aggregate data analysis. This will permit us to identify those industry-level components that heighten globalization pressures on the US textiles and apparel industries, and those firm-level choices in North Carolina that have turned those potential losses into opportunity. We will also be able to identify the characteristics of those plants in which labor fared best, and worst, in the industrial response to globalization.

At the firm level, we have interviewed executives at a number of textile firms in North Carolina, as well as government officials and industry analysts. We have assembled an electronic survey to be administered to textile firms throughout the state that should be online by the beginning of December. Our statistical analysis has progressed as well.

### **North Carolina textiles.**

As the figure above illustrates, the textiles sector has contributed strongly to total manufacturing output in North Carolina. It reached a recent peak in 1992, when textiles production represented 16 percent of total manufacturing production. This is appreciably

higher than the US average of just over 2 percent of total manufacturing in textiles. Apparel production has also been more important in North Carolina manufacturing than in the US as a whole, although there the difference is less pronounced. The recent peak for apparel as a share of manufacturing occurred in 1992 in North Carolina, with just over 4 percent of the total.

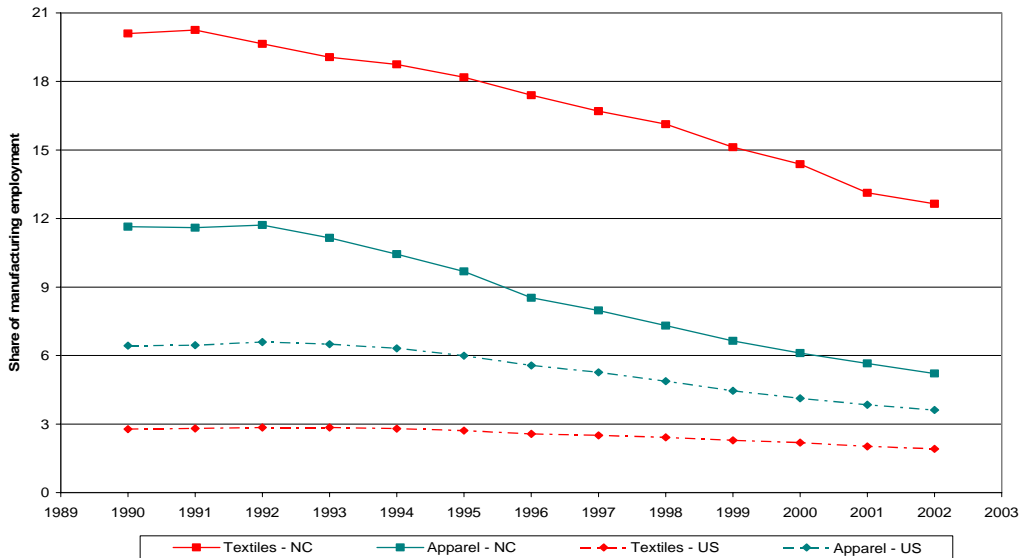


When the employment picture is examined, however, the story is a bit different. The state of North Carolina has shared disproportionately in both growth in production through the 1990s and ongoing reductions in employment. The growth in textiles production until 1994 was a stimulus to the state economy. In employment, the Bureau of Economic Analysis reports that between 1977 and 1997 nearly 82000 jobs were eliminated in North Carolina textiles, whether through mill closings or substitution of labor-saving machinery. This occurred even as production was rising. The following figure illustrates the trends in employment in North Carolina and the US from 1989 to the present.

This was, however, only the beginning: since 1997 the rate of job elimination has accelerated. From 1997 to 2002, according to the US Bureau of Labor Statistics, over 100,000 jobs were eliminated in the textile industry in North Carolina. Nearly 70,000 jobs were eliminated during the same period in the apparel industry in North Carolina. While the industries remain a substantial part of the North Carolina economy, their contributions are greatly reduced relative to the 1970s.

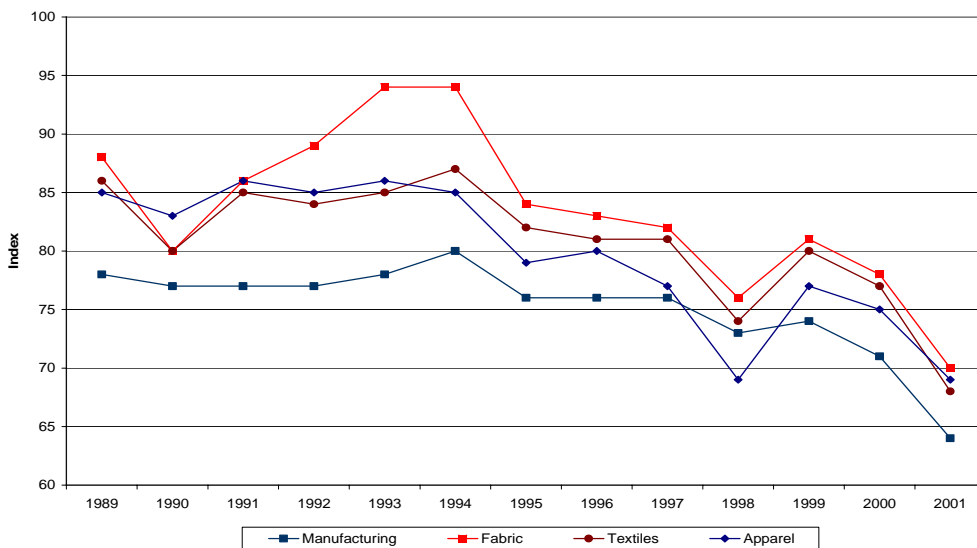
Manufacturing employment has been declining in the US since the 1980s. There is an indication, once again, that 1992 was a watershed year: textiles and apparel employment began a decline in that year relative to manufacturing at the national level, but the decline is even more pronounced in North Carolina.

Employment Shares in Textiles and Apparel: NC and US



In this research project, we investigate the causes of this decline. It is common to attribute the negative impact to competition from foreign imports, but this may be too easy an out; there are many other possible explanations.

Capacity Utilization in Various US Industrial Aggregates



For the period since 1988, we can examine as well the capacity utilization of productive facilities in the US. We observe imports rising in all the textiles sectors as a share of consumption; could this be because the sector had insufficient capacity to provide

consumers with the goods? As the preceding diagram indicates, this may have been the case in the early 1990s. If we take the manufacturing sector in aggregate as the benchmark, it is evident that from 1989 through 1994 the capacity utilization in fabrics, textiles and apparel subsectors were all in excess of the benchmark.

An inability to further expand use of existing capacity could well lead to purchase of imported substitutes. From 1995 on, however, this argument holds less water. From 1995 to 1997, the manufacturing sector as a whole shifted to a lower but stable level of capacity utilization; the textiles sector did so as well. In 1998 there was a dip in capacity utilization that appears to originate in the textiles and apparel sectors; apparel is hardest hit, with textiles and fabrics also suffering significant downturns. (Manufacturing turns down as well, but that seems to be explained by the slump in textiles and apparel.)

Capacity utilization recovers somewhat in 1999, but slumps again in 2000 and 2001. Here the slump in manufacturing-wide, with textiles, fabrics and apparel all mirroring that general downturn. By the end of the period, capacity utilization in manufacturing has slumped by 14 percentage points, apparel has lost 16 points, and textiles has lost 18 points, all in comparison with 1989. Especially since 1997, the import penetration is not in response to excess demand – something else is at work.

Three (sets of) events are cited as causing this downturn. First, an agreement was reached in 1995 to phase out the Agreement on Textiles and Clothing by 2005. The quotas were to be phased out slowly, but the timetable was clear – by 2005 the quotas would be removed. Second, the NAFTA agreement came into being in 1994 with the addition of Mexico to the existing US-Canada free trade area. NAFTA, in concert with the Caribbean Basin Initiative and other bilateral free-trade agreements, opened the door to tariff-free trade with developing countries. Third, the Mexican peso experienced a sharp depreciation relative to the US dollar in late 1994, followed by the “Asian crisis” depreciations of the Thai baht, the Korean won, and other currencies in 1997. These depreciations greatly reduced the cost of outsourcing production to the affected Asian nations.

#### **“Churning” in the North Carolina textiles sector.**

The textiles sector in North Carolina has been characterized by substantial turnover since 1950. The sector at the beginning could be characterized as quite decentralized, with a large number of family-owned firms operating a single plant apiece. Over time the ownership of those plants was centralized into the hands of a smaller number of firms, and the plants themselves were re-engineered to be more labor-saving in production. The net result was modest growth in production on aggregate and substantial losses in employment. Productivity improved in the sector as the firms “balanced down” their workforce.

This dynamic can be seen in the evolution of firms listed in Davison’s Textile Blue Book through the last 30 years. As Table 1 indicates, the number of firms in operation in North Carolina dropped by 18 percent (from 1271 to 1042) over that quarter-century. Those totals fail to illustrate, however, the tremendous turnover in activity. Between 1975 and 1980, for example, 371 operations went out of business while 199 operations opened. (The term “operation” refers to the same ownership operating a facility in the same location in both years. The number of new firms will be less than the number of new

operations, since existing firms can buy the facilities of failing competitors and re-open those facilities.) In each five-year period, the percent of operations closing down or going under new management was between 20 and 30 percent. The percent of new operations was much more volatile, running from 16 to 40 percent of existing operations. Much of this “churning” was due to firms selling off low-performing plants to competing firms: the turnover then is visible only in examining the ownership at the plant level. However, net exit must involve the shuttering of plants, while net entry represents the bringing online of capacity unused in the previous period. Only 29 percent of the 1975 operations are still active under the same management in 2000.

**Table 1: Firm Entry and Exit: North Carolina Textile Sector**

	1975	1980	1985	1990	1995	2000
Textile Operations	1271	1100	1027	1221	1157	1042
Operations exiting	371	268	224	329	416	
Operations entering	199	195	418	265	301	
Net entry	-172	-73	+194	-64	-115	
Percent exiting		29	24	22	27	36
Percent entering		16	18	40	22	26

Source: Davison’s Textile Blue Books for 1975, 1980, 1985, 1990, 1995, 2000.

The churning that goes on in ownership of textile operations becomes evident when the multi-plant corporations of 1975 and 2000 are compared. Table 2 provides the complete list of corporations with four or more operations in the state in those two years. (If the corporation listed a main office in North Carolina, that will also be counted into the number of operations.) It is evident in comparing the two lists that some of the big names in 1975 have dropped away (e.g., Klopman Mills), while others (e.g., American & Efird) have maintained their position in both lists. It is also evident that there is a greater degree of concentration of operations in 1975 than in 2000: the top 23 corporations controlled 204 operations in 1975, while a different group of 27 corporations only control 166 operations in 2000. This smaller number of plants in the later period is not an indication of reduced capacity, however; the productivity of each of these operations is much greater than in 1975.

**Table 2: Multi-plant Textile Operations in North Carolina**

1975		2000	
J.P. Stevens	26	Parkdale Mills, Inc.	22
Fieldcrest Mills	18	Carolina Mills, Inc.	12
Klopman Mills	16	American & Efird, Inc.	11
Cone Mills Corp.	15	Guilford Mills, Inc.	8
Cannon Mills	14	Pillowtex Corp.	8
Burlington Industries, Inc.	12	R.L. Stowe Mills, Inc.	7
Burlington Madison	11	Burlington House Fabrics	6
American & Efird, Inc.	10	Galey & Lord, Inc.	6
Carolina Mills, Inc.	9	Mastercraft Fabrics LLC.	6
Collins & Aikman Corp.	9	Unifi, Inc.	6
Burlington House	7	Charles Craft, Inc.	5
Galey & Lord, Inc.	7	Collins & Aikman Corp.	5
Adams Millis Corporation	6	Cone Mills Corp.	5
Texfi Industries, Inc.	6	Sara Lee Sock Company	5
Beaunit, Inc.	5	WestPoint Stevens Inc.	5
Dixie Yarns	5	Wiscassett Mills Company	5
Belmont Heritage	4	Alamac Knit Fabrics, Inc.	4
Glen Raven Mills, Inc.	4	Brown Wooten Mills, Inc.	4
Kaysen-Roth Hosiery, Inc.	4	Burlington Performance Wear	4
Kendall Co.	4	Candor Hosiery Mills, Inc.	4
Knit-Away	4	Kaysen-Roth Hosiery, Inc.	4
National Spinning Co., Inc.	4	Mayo Yarns, Inc.	4
Reeves Brothers	4	National Spinning Co., Inc.	4
		National Textiles, LLC.	4
		Shelby Yarn Company	4
		Shuford Mills, Inc.	4
		Tuscarora Yarns, Inc.	4
<b>Total for 23 corporations</b>	<b>204</b>	<b>Total for 27 corporations</b>	<b>166</b>

In 1975, there were 1004 firms represented among textile operations, and 93 of these were multi-plant firms. In 2000 there were 802 firms represented, and 136 of these were multi-plant.

### **Business strategies.**

In our interviews, we have talked with executives from a number of the larger textile and hosiery corporations. Their responses to international competition have been quite individual to the firm, but they can be summarized in the following six strategies:

- No longer profitable, in short run or long run – liquidate business.
- No longer profitable in long run – continue operations only long enough to “harvest” the value of productive assets.
- Not profitable in short run, but potentially in long run: outsource production for the short run, acting as intermediary for foreign suppliers.
- Increased profitability through increased capital investment.
- (For businesses with many current or potential products) Re-orientation of business away from those products facing most severe competition toward those with least competition (and greatest possibility of profit).

It is evident from this list that only one strategy is explicitly keyed upon international competitors. While it is common among all executives to attribute their less profitable operations at present to the impact of foreign competition (as one executive put it, “The answer is China, China, China”), at least some of the impact is self-inflicted. For example, with Pillowtex, the cost disadvantage was in part due to the large debt service payments necessary to retire debt issued when Fieldcrest-Cannon was absorbed in 1997.

### **Identifying the causes in difference of response.**

Crucial distinctions in understanding the impact of import competition on textiles producers:

- (1) The type of product. Products in this industry range from the commodity – undyed white yarn, white cotton socks, T-shirts – to the unique product. The fiercest import competition has come in commodity goods, while those with unique products are somewhat insulated from that competition.
- (2) The product purchaser. The industry can be divided into two categories of products: those used as inputs by the textile and apparel industries, and those sold directly to wholesalers and retailers for consumer use. Those producing for consumer use (e.g., hosiery) face import competition as usually characterized – a foreign producer makes a substitute good available to wholesalers and retailers. Those producing inputs to downstream production (e.g., yarn, sheeting, non-woven products) may not face import competition at all – rather, they face the loss of their traditional market as the downstream producer is unable to compete with foreign competitors and thus shuts down.

We have discovered from our interviews and from study of the Davisons data that the first point is not limited to foreign competition. The domestic competition in these



“commodity” products has been fierce as well. Much of the “churning” in ownership of NC textile firms has occurred in these products, as higher-cost family firms were absorbed by lower-cost domestic competitors. This is a source of frustration for those competitors; they believe that they won the competition, and then found themselves facing a new group of competitors on whom their old strategies did not work.

The strategy for dealing with domestic competitors has been quite simple: modernize your own firm with labor-saving technology. Charge lower prices for your goods, allowing you a small profit and leaving your competitors in a losing position. Then buy the competitor and modernize it in similar fashion. It typically generates a concentration of the industry into fewer firms, with the same or slightly increased output but with reduced employment. Due to this, the successful firms throughout the 1990s were the ones that aggressively introduced new technology. Those firms not absorbed by others in this competition followed the same lead in terms of modernization of technology, so that the sector as a whole shed jobs continuously.

A cornerstone of success in American textile companies before the late 1990s was the emphasis on manufacturing: the best US firms showcased world-class production skills. For the future, this talent in production must be combined with world-class skills in marketing and management. US companies are fighting a losing battle in world markets for homogeneous goods, since that battle is waged on lowest delivered cost. We expect US textile companies that survive and thrive to be characterized by significant skill in marketing, including development of business alliances, brand recognition, market segmentation, and related marketing activities. The challenge for US textile companies will be to develop significant strength and flexibility in marketing without sacrificing the high quality-low cost combination that characterizes the industry at present.

### **Ten Lessons.**

We can summarize our learnings from interviews in the industry in the following ten lessons.

#### **Lesson 1: What comes around, goes around.**

The textiles industry moved to North Carolina from the Northeast at the beginning of the 20<sup>th</sup> Century. The pre-eminent reason: the availability of workers with skills matching the needs of the industry at a wage below that paid in the Northeast.

The recent shift of production from North Carolina to Mexico, the Caribbean Basin, South-East Asia and China has been in response to these same market forces. There is no avoiding this basic fact: that for the skills necessary in textiles production, US labor receives higher relative compensation than does labor in these other countries.

We call the process “globalization” this time around because advances in communication and transportation have largely negated the “natural protection” afforded US business by our geographic isolation

## **Lesson 2. The textiles sector in the US has been losing jobs for 50 years.**

While we've taken special notice of the job loss in textiles in recent years, it is the case that textiles employment has been falling since 1950. Employment fell, even as output rose, due to technological improvements in the sector. This was a natural feature of the evolution of the sector, as producers matched capital complexity to the increasing skills of the workforce. Adding labor-saving machines was a cost-reducing strategy for competition with other domestic firms.

## **Lesson 3: Efficiency is important.**

The textiles industry in North Carolina has been characterized from its beginning by churning: family firms come into being, and go out of being. Between 1975 and 2000, the number of plants in operation was reduced by 18 percent, but of those plants in operation in 2000, only 29 percent were in operation under the same management in 1975.

Those who stay the course are the lowest-cost producers. If we define efficiency as producing a given value of output with the lowest cost of inputs, the efficient firms in the US over the last quarter century were able to capture market share - largely from other US firms. This is especially evident for those producers in largely homogeneous goods - basic yarn, hosiery, broadcloth.

## **Lesson 4: Efficiency isn't enough.**

In the old days, when clothing was made in the USA, a low-cost textiles producer was able to stay in business supplying yarn or cloth to US-based apparel producers. At that time, the transportation-cost advantage lay with the US producers, since any foreign producer hoping to break into the supply stream would have to pay the shipping costs in addition to production costs.

These days, the apparel business is in large part offshore. The transportation-cost advantage now belongs to the foreign firms, since US textiles wishing to break into the supply stream have to ship their product offshore. US firms wishing to maintain a share of the market must go beyond manufacturing to marketing - to downstream producers and also to the consumer market.

Foreign producers have staked out a powerful competitive position in what we might call "plain vanilla" textiles. Successful US textile firms are those that have established the advantages of their products over those "plain vanilla" competitors. The advantages may be in unique characteristics of the textiles, in the speed responding to customers' orders, or in an ancillary customer services that make the supplier invaluable.

## **Lesson 5: The "Winner's Curse" leaves large textiles firms at a disadvantage.**

The "Winner's Curse" is a notion straight from the theory of auctions (like Ebay). The winner is cursed because she almost certainly paid too much to win the auction. If

there are many bidders for an item, the winner is the most optimistic about the resale value of the object.

This is pertinent for textile firms. During the 1980s and 1990s, large textile firms were subject either to leveraged buyouts or mergers – and these transfers of ownership were often contested (as in an auction). The winning bid was supported by the most optimistic valuation of the future profit stream attached to the plant. That optimistic valuation was converted into debt to complete the purchase, and servicing the debt became the responsibility of the plant’s managers. The Cannon and Fieldcrest plants involved in the recent Pillowtex closure were first taken private in a leveraged buyout in the 1980s, and then merged in 1985. Pillowtex came around in 1997 to purchase the merged business at a price acceptable under the optimistic scenario that economic growth continue indefinitely at the mid-1990s rate. As we have seen, that “rosy scenario” did not play out.

#### **Lesson 6. Wal-mart changes everything.**

The retailing revolution led by Wal-mart, and joined by other major retailers, has changed the dynamics of contracting in the apparel and textiles sectors. There are two features to note:

- Wal-mart’s approach to product purchase has been different from that of department stores: rather than specify the details of the garment’s components, its buyers have simply said: “Here’s the garment. Duplicate it for us.” The bidders are left to their own devices in assembling the garments. Those with the tightest inter-plant ties and the lowest intermediation costs will be at an advantage. Asian “jobbers” have developed networks more rapidly to provide this service.
- Wal-mart outsources the design of its product departments. It will ask a major supplier, for example in hosiery, to put together a plan for stocking its shelves with the supplier’s product – and the products of the suppliers’ competitors. Firms able to provide this service competently remain major suppliers, while those who cannot become residual suppliers.

#### **Lesson 7. Foreign producers are formidable competitors.**

China is only the most recent international competitor for the textiles industry. In previous waves the Four Tigers, and then Mexico and the Caribbean Basin, were viable sources of textiles product for the US market. The international presence in the US market has grown in bursts. There has apparently been a presumption on buyers’ part that the US product is preferred, but during booming production periods the US productive capacity becomes insufficient. Purchasers have turned to foreign suppliers for the residual. Then, when the market downturn occurs, the foreign suppliers maintain their market niche while demand for product from the US producers is cut back.

**Lesson 8. The removal of quotas under the ATC is not the end of protection for domestic industry.**

Quotas on all textiles imports will be phased out by 2005 if legislation follows the timetable agreed within the WTO framework in 1995. Protection will remain, however, in the form of ad valorem tariffs that add roughly 20 percent to the cost of foreign textiles imported into the US. The free-trade-area status for Mexico and the Caribbean Basin will continue to ensure those countries favored access to the US market.

**Lesson 9. Successful firms see beyond the production floor.**

The successful textiles firms in the current economic environment are those that recognize their place in the supply channel and work with upstream and downstream firms to ensure a seamless hand-over of product.

The traditional model of textile and apparel production has relied upon jobbers - these coordinated the delivery of product from upstream firm to downstream producer, all along the supply channel. Jobbers are becoming extinct in the US, and successful textile firms are assuming their role. Inventory management and boutique design are not traditional roles for the textile firm, but they have become vital services of successful firms.

**Lesson 10. In a competitive world, access to financing can be a formidable advantage.**

Let's distinguish two types of financing - financing for takeovers (acquisition capital) and financing for daily operations (working capital). The presence of the first has been a contributor to some of the most publicized failures, while the absence of the second has led to many of the unpublicized shutdowns.

**Conclusions.**

"Conclusion" is too strong a term to describe what we have learned about the adjustment of the textile industry to the changing global environment. Our "conclusions" are really a summary of what we currently see as the critical aspects of the adjustment process. We summarize below our "ways forward" and our views of "dead ends" for firms in the textile industry.

**Ways forward.** The nature of successful firm response to these changes in the global environment is different for large and small firms. Small firms, without the resources to diversify, will face an expensive road ahead: either accept a new role in the industry as residual supplier (i.e., short runs on short notice to fill gaps in inventories) or invest in innovation to create a stable niche product or process. The new philosophy cannot be "if you spin it, they will come".

Large firms, with resources to diversify, will also face an expensive road ahead. Their road, however, will include different branches. The possibility of becoming a residual supplier is precluded by their size. (One executive told us "We're too big to be a niche player.") The

old production style is no longer a viable road. These firms must integrate US production into an international supply structure, playing upon the strengths of their US facilities while integrating the strengths of foreign facilities as well. They must also reach out beyond their core competencies and develop services to upstream suppliers and downstream users. The loss of the downstream US-based apparel industry has been a sizeable blow to “business as usual” in the US. The textile producers must forge new links to the downstream producers. Product innovation is an excellent, though expensive, way to cement those links.

One of us posed the current problems of US yarn producers to the entire first-year MBA class at UNC-Chapel Hill, and asked students to calculate (based on overall market data) the relative advantages of several forward-looking strategies to a generic large textile producer. The vast majority argued that acquisition of foreign manufacturing capacity was a profitable strategy, and produced sensible quantitative analysis backing their view. While some thought it advisable to shut down US operations, most believed there were substantial advantages to maintaining US production capacity, even if it were smaller than current capacity. The results of this exercise are consistent with decisions being taken by senior management of large textile companies in different parts of the textile complex. US textile companies who do not enjoy a strong position in a niche market seem likely to face substantial additional challenges relative to firms that can adjust among plants in multiple locations. Firms who choose this path are more likely to survive in the long run, which is certainly positive news for workers at these firms.

**Dead Ends.** The future of the US textile industry lies in reinvention. Some of this reinvention may involve new products and processes, but much will be the development of new skills and business models in the industry. The business world has changed dramatically in the past dozen years, and success in the business world, whether in textiles or in other industries, has demanded flexibility and adaptation among managers and employees of U.S. companies.

We are skeptical that demands for trade barriers hold substantial long-term promise. There is fairly strong evidence being developed across multiple industries and countries that firms that participate in international markets have substantially higher productivity than domestic-only companies (See Lesson 3 on the importance of efficiency). It is important to have all parties to trade agreements abide by their commitments and to recognize that implementing trade agreements requires real resources. The long-run consequences of competition, whether from domestic or foreign-owned companies, are very positive, and inhibiting the adjustments occasioned by competition should be undertaken with great caution. There is fairly clear evidence that competition in well-functioning markets produces stronger companies, better products, and great benefits to consumers, principally through lower prices. Anti-competitive behavior is anathema to society, whether it involves domestic or foreign-owned companies, and it calls for appropriate responses from elected and appointed government officials. In the end, we think it is better to bet on the skill, flexibility, and adjustment of US companies to a new business environment.

Chapel Hill, NC: 7 November 2003

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