Improving Global Market Competitiveness of the Textile Industry Cluster in South Carolina

Report to
South Carolina Council on Competitiveness

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# Improving Global Market Competitiveness of the Textile Industry Cluster in South Carolina

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1. Executive Summary

With the anticipated growth of global production and consumption of textile-related products and services, there are opportunities and challenges for the South Carolina textile complex. The purpose of this research study was to conduct an analyses of the textile complex in South Carolina, including a market analysis, segmentation of South Carolina companies (three categories), and identification of needed assistance for these companies. The global textile complex is undergoing a massive restructuring, and this restructuring is impacting the business dynamics of the South Carolina textile complex. With South Carolina’s historical dominance in the global textile complex, the study’s outcomes can have significant impacts on the South Carolina textile complex, as well as the South Carolina economy.

The first initiative of the study was the exploration of global dynamics, resulting in the Global Textile Competitiveness Framework. This framework provided a holistic view of the business dynamics facing the South Carolina complex, and yielded a “path” for critical examination of the complex and individual companies. To complete the study’s objectives, the South Carolina Textile Complex Database was developed. This comprehensive updated database contains 912 companies involved in the development, manufacture, marketing and distribution of textile products. Each company in the database has up to 50 variables describing the company location. Descriptive statistics, including geographic and industry clusters, provided an additional portrayal of today’s South Carolina textile complex. Companies with 25+ employees (n = 337) were segmented into three groups: “Flourishing”, “Coping”, and “Potentially Vulnerable”. In addition, assistance to be provided by the South Carolina Council on Competitiveness was listed.

Five conclusions from this study are as follows:

1) A viable textile complex exists in South Carolina (estimated sales in excess of $21 billion), with companies who are global competitors. This complex, while perhaps different in configuration from the industry five years ago, is extensive in company locations (912 company locations). There is a textile complex company location in each of the 46 South Carolina counties. The South Carolina “textile industry” has restructured to become the “textile complex”, with representation of all three textile business activities in the State: Pre-production, production, and post-production.

2) South Carolina is home to several headquarters. In addition, the South Carolina textile complex has a global interface, not only in trade activities (export, import, both) but also in foreign direct investment in the State (particularly in machinery and chemicals).

3) Two geographic clusters and three industry clusters exist in the South Carolina textile complex. These clusters provide profitability, innovation and opportunities for new business development.
• **Geographic Clusters:** While the largest geographic textile cluster is the Upstate Cluster, the second geographic cluster (Midstate Cluster) provides strength to the State. The transportation infrastructure, especially the I-85 corridor, provides significant textile business to the State!

• **Industry Clusters:** Three industry clusters exist in the State. The Advanced Manufacturing Cluster provides commodity plus niche/specialty products and services, with some global market coverage. The new/emerging clusters provide some infrastructure and growth potential for the State (individual growth potential, plus growth for the Advanced Manufacturing Cluster). The Textile and Apparel Creative Innovation Cluster is composed of companies providing “textile inputs” (chemicals, fibers, machinery, packaging) and provides opportunities for creative innovation to the Advanced Manufacturing Cluster. The Textile and Apparel Wholesale Cluster focuses on wholesale activities (yarn & fabric, apparel, home furnishings) and is the State’s textile-related business activity in post-production activities. This cluster, diverse in business models, also represents companies with smaller employment.

4) Segmentation of South Carolina textile complex resulted in three segments: “Flourishing” (n = 124; 37%); “Coping” (n = 131; 39%), “Potentially Vulnerable” (n = 82; 24%). With the anticipated global growth of textile product production and markets, some South Carolina companies (especially “Flourishing”) are positioned to maintain and build global business. The segmentation criteria can be used by South Carolina companies to assess their current positioning as well as identify ways to improve their company’s global competitiveness.

5) The continued enhancement of knowledge programs via seminars and conferences provided by associations, the Textile Cluster, universities, and other organizations will enhance the State’s textile complex, including individual companies, in global competitiveness. Such programs include market dynamics, trade and sourcing, new product development, supply chain management, and leadership/human resource development.

This study has provided the South Carolina Council on Competitiveness personnel with a) a holistic picture of the South Carolina textile complex, b) recommended assistance for companies, and c) future research studies that can strengthen the South Carolina companies’ global competitiveness.
2. Introduction

The South Carolina textile industry ("textile complex") consists of all production, marketing and services of textile products, from the fiber to the ultimate consumer, including auxiliary services needed to manufacture, finish, market and distribute the product. Textile products are unique, as there are diverse end-use markets for textiles: apparel, home textiles, industrial/technical, nonwovens, medical, and transportation.

South Carolina has continued to play a significant role in the global textile complex, as well as in the South Carolina economy. As one of the global leaders in textile production, South Carolina is recognized as having headquarters for several companies, as well as one of the leaders in products, markets, processes, and services. Historically, South Carolina has a significant employment in textile complex production and currently ranks as one of the largest states in the nation in terms of employment (U.S. Department of Labor, 2007). South Carolina still accounts for more than 31,200 employees (Textile Mills Production, South Carolina Employment Security, July 2007).

Within the last ten years, the global textile complex has undergone a major restructuring, due in part to trade liberalization as well as growth (products, production, markets) within the global industry. While both production and consumption of textile and apparel is anticipated to increase, a major shift has occurred in both the global textile production and marketing:

Firms are marketing their products in the most profitable places in the world (predominantly developed countries), and manufacturing in the most economical and efficient places in the world (increased shift to developing countries).

This restructuring of the global complex has provided challenges and opportunities for the South Carolina textile complex. Even with South Carolina’s historical dominance in textiles, this is the first research study that looks extensively at the existing South Carolina textile complex (fiber-> consumer, with auxiliary firms) and outlines assistance for South Carolina companies. In addition, this study’s findings present a new, holistic way of looking at the South Carolina textile complex, as well as an examination of company segmentation into three categories: “Flourishing”, “Coping”, “Potentially Vulnerable”. Identification of programs for South Carolina companies that the South Carolina Council on Competitiveness can provide as well as coordination (with assistance from universities, community colleges, trade associations) should yield a stronger and more globally competitive South Carolina textile complex.
3. Statement of Work

Following is the Statement of Work for North Carolina State University (“NC State”) College of Textiles’ personnel to undertake the research study (See Appendix A – Proposal):

The purpose of the study was to conduct analyses of the textile complex in South Carolina. With today’s global competitiveness, it is important to study the South Carolina textile complex, identify core competencies of South Carolina companies, and determine ways to assist these companies for increased global competitiveness (to “survive and thrive”). A research framework developed for this study, Global Textile Competitiveness Framework, provides a pathway for the identification of strategies and tactics imperative for the industry’s global competitiveness.

With the pervasiveness of textiles in South Carolina, the textile complex was defined by all related activities used in the textile supply chain: Traditional manufacturing (fibers, yarns, fabrics, finished goods), PLUS distribution and transportation/logistics, marketing and design, wholesale, development activities, machinery, labeling/ticketing, research and testing services, e-commerce (B to C), dyeing and finishing, other auxiliary industries, and associations and organizations.

Specifically, South Carolina Council on Competitiveness secured NC State College of Textiles personnel’s assistance in three areas:
1) Market Analyses of South Carolina textile industry, with a searchable and sortable database by select variables (product, functions, contact information, core competencies, other variables).
2) Segmentation of the South Carolina Textile Complex (companies) into three categories (secondary and primary research):
   a. Companies that will survive/thrive (“Flourishing”)
   b. Companies that will survive/thrive with assistance from the South Carolina Council on Competitiveness (“Coping”)
   c. Companies that will NOT survive/thrive (“Potentially Vulnerable”)
3) Determination of needed assistance for companies:
   a. Collaborate and form alliances with textile trade associations.
   b. Create and promote educational programs to increase companies’ knowledge and awareness of the global textile market and strengthen company business strategies. Examples could include: Supply Chain Management, Global Business Strategy, Business and Marketing Plans, Niche Product Development, Technology Enhancement, Trade Show Development, and other training and research support.
   c. Increase Import/Export knowledge: Export Ready Program.
   d. Attend conferences and seminars that will challenge current thinking to enhance visioning and strategic processes.
Researchers from NC State College of Textiles (faculty -- Cassill, Godfrey, Little; graduate students -- Frederick, Sampson) provided leadership in all three areas by conducting research regarding companies, products, markets, and assistance programming and development (See Appendix B: NC State College of Textiles profile). The faculty is recognized internationally for their expertise in textile global market competitiveness, and also has a close working relationship with personnel who are employed by companies in the South Carolina textile complex.

A Steering Committee provided the researchers with inputs and guidance for the project. This Steering Committee was comprised of personnel from industry, government, trade associations, and academe.

Moving forward, NC State researchers will work closely with personnel from the South Carolina Council on Competitiveness in the three areas to implement recommendations made by NC State throughout the Council on Competitiveness organization and within the South Carolina textile complex. Finally, NC State personnel will support their implementation by providing reviews, assessments and support where needed.

The proposal provided a general direction for the project, three specific areas of responsibility for NC State College of Textiles, as well as a spirit of mutual trust and good will to cooperate.

**Method of Approach**

**Global Textile Competitiveness Framework**

A research framework, *Global Textile Competitiveness Framework*, was developed by the researchers to guide the research study (see Figure 1, p. 35). This framework was developed using the researchers’ expertise in textiles with primary data (information from industry, government, and academic personnel) combined with secondary data (government, trade and industry documentation). The framework served as a guide for the identification of key variables to be included in the database, as well as segmentation of South Carolina textile complex companies into the three key company categories: Flourishing, Coping, Potentially Vulnerable.

**Database**

To accomplish the three objectives (see “Statement of Work,” p. 6-7), a *South Carolina Textile Complex Database* was developed. While existing textile databases are limited in scope and are not comprehensive in nature (e.g., Harris Directory, Davison’s Blue Book), this study’s database provides an up-to-date sortable and searchable database (with up to 50 variables for each company) of the South Carolina textile complex, with companies representing:

- Advanced manufacturing (fiber, yarn & thread, fabric, finished goods, including apparel and home products)
- Logistics
• Marketing and design
• Chemicals
• Wholesale
• Development activities
• Machinery
• Labeling/ticketing and packaging
• Research/testing services
• Recycling
• Dyeing and finishing, and
• Other auxiliary services, including associations

Table 1 presents primary and secondary resources used to identify companies listed in the *South Carolina Textile Complex Database*.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>South Carolina Textile Complex Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference USA</td>
<td></td>
</tr>
<tr>
<td>Dun &amp; Bradstreet</td>
<td></td>
</tr>
<tr>
<td>Davison's Textile Blue Book</td>
<td></td>
</tr>
<tr>
<td>Textiles Association's Listings: SCMA, INDA, SEAMS</td>
<td></td>
</tr>
<tr>
<td>Business cards from previous interactions with the South Carolina textile complex</td>
<td></td>
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<tr>
<td>Hoovers Online</td>
<td></td>
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<tr>
<td>Company websites/internet sources</td>
<td></td>
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<tr>
<td>Personal phone calls</td>
<td></td>
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<tr>
<td>NC State College of Textiles (including Institute of Textile Technology; Textile Foundation Board)</td>
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</tbody>
</table>

The *South Carolina Textile Complex Database* is in EXCEL format, with a total of 912 textile complex companies represented. The database can be searched and sorted by 50 variables. Seven (7) key factors which comprise variables in the database are represented in Table 2.
Table 2
South Carolina Textile Complex Database
Factors Comprising Database

1) Facility: (demographics)
Company Name
Contact, Position, Email
Phone Number
Fax Number
Mailing Address
Mail City
Ranked Executives (names)
Year Established
Public/Private
Parent Company/Subsidiaries
# of employees

2) Community and City: (Geographic variables)
Area Code
County
Zip Code
# of employees
Latitude/Longitude

3) Organization: (Supply Chain and depth of supply chain)
SIC
NAICS
Supply Chain Function of the Location:
Headings in Database: Transportation, Service/Research, Manufacturing,
Distribution Center, Labeling, Sales Office, Converter, Wholesaler, Contractor,
Design, Showroom
Line of Business (description by researcher)
Parent Company-Subsidiaries

4) Product:
Components of the Product Produced:
Headings in Database: Woven, Knitted, Nonwoven, Polymer/Synthetics,
Dyeing/Finishing, Leather, Canvas
Actual Product Produced:
Headings in the Database: Yarn/elastics, Chemicals/resins, Thread/rope,
Fabric/Webbing, Carpet/Rugs, Homefurnishings/Accents/Draperies,
Machinery, Apparel, Medical/Hygiene, Hosiery/Socks, Screen Printing,
Embroidery, Leather, Filters, Raw Materials, Mattress Ticking, Rags/Wipers,
Paper, Recycling
Table 2 (continued)

5) Market: (End use Markets, Import/Export)
   SIC²
   NAICS²
   Line of Business²
   Foreign Trade (Import/Export)
   Trade Organizations
   End-Use Markets:
   **Headings in Database:** Automotive, Accessories, Carpet/Rugs²,
   Homefurnishings/Accents/Draperies², Machinery², Apparel², Medical/Hygiene²,
   Hosiery/Socks², Military/Protective, Industrial

6) Cost
   Sales*

7) Industry/Technology Savvy and Forward Thinking-Futuristic
   Web Address
   E-retailer
   E-catalog
   Trade Shows
   Trade Organizations

* indicates a numeric value
1 indicates the first time an item is listed in the database
2 indicates the second time an item is listed in the database

Database Limitations

There are four limitations of the *South Carolina Textile Complex Database:*

1) Some companies that are involved in the textile business
   may be reporting diverse (non-traditional textile) NAICS,
   and have not been included in the database. Known under-
   represented companies include
   a. consumer products companies (e.g., Procter &
      Gamble - that make textile-related products)
   b. medical companies
   c. uniform (including military and image apparel)
   d. service industries and auxiliary firms supporting the
      textile complex

2) The database captures a point in time (September 2007),
   and may not represent daily business dynamics (growth,
   entering or exiting the textile industry) since September
   2007. *(Note: Some companies may have exited the
   business, but are still reported in industry databases, as the
   business is closing.)*
3) With 93.1% of companies represented in the database being privately held, limited information was obtained by many of the private companies (due, in part, to fewer reporting requirements of private companies vs. public companies). While the researchers are familiar with many South Carolina companies, proprietary information (especially financial information) is based on estimates provided in the secondary literature. All markets may not be represented due to the private nature of information available.

4) Sales data as represented in the database is incomplete, due to the proprietary nature of private companies.

Database Analysis

Objective #1:
The database was structured to provide:
- A comprehensive up-to-date listing of South Carolina textile complex companies, with 50 variables to provide descriptive profiles of the complex
- Textile industry segmentation by three categories (“Flourishing”, “Coping”, “Potentially Vulnerable”)
- Identification of assistance (programs/services) that the South Carolina Council on Competitiveness can provide to South Carolina companies
- Descriptive key contact information to assist South Carolina Council on Competitiveness in forming and maintaining a relationship with companies
- Database format to provide further statistical analyses, for both the South Carolina Council on Competitiveness and NC State College of Textiles.

(a) Criteria for company selection in database: A company location must have a primary NAICS code of: 313-315, textile machinery, wholesale, fiber, OR be listed in Davison’s Textile Blue Book.

Objective #2
Descriptive analyses were conducted to complete Objective #2. Seven steps were used to provide a “picture” of the South Carolina Textile Complex and to segment the companies into three groups (“Flourishing,” “Coping,” “Potentially Vulnerable”)

Step 1: Analyses of the overall database to provide an overall examination/picture of the South Carolina Textile Complex
Step 2: Breakdown of activities by sectors:
  - Fibers
  - Yarn and Thread
  - Fabric (including broadwoven, narrow, nonwoven, knitted)
  - Finishing (including broadwoven, fabric coating, other)
  - Textile Product Mills
  - Textile Product Mills (including bags, canvas, rope, cordage, tire cord)
  - Miscellaneous Textile Products
  - Home & Interiors
Step 3: Descriptive profile by geographic clusters:
  - Upstate Cluster
  - Midstate Cluster

Step 4: Descriptive profile of existing and emerging industry clusters:
  - Advanced Manufacturing Cluster
  - New/emerging Clusters
    - Textile and Apparel Creative Innovation Cluster
    - Textile and Apparel Wholesale Cluster

Step 5: Segmentation into three groups using six (6) criteria
  - Flourishing
  - Coping
  - Potentially Vulnerable

Step 6: Validation of segmentation groups (“Flourishing”) with use of the Global Textile Competitiveness Framework (Fishbone Diagram)

Step 7: Identification of supply chain nodes/linkages/interconnected components to further validate segmentation groups

Objective #3

A matrix was developed to provide South Carolina Council on Competitiveness personnel with needed assistance (programs, services) for companies. Assistance for each of the three company groupings (“Flourishing,” “Coping,” “Potentially Vulnerable”) was identified. In addition, it was noted that the Council’s collaboration with other organizations may provide assistance to the South Carolina textile complex:

- Associations (SCMA, SEAMS, Institute of Textile Technology- ITT)
- NC State College of Textiles, Clemson University, Winthrop University
- Community Colleges, other organizations

Future research programs were identified. This includes the potential of Council to collaborate with: a) industry/government/academe, b) universities, c) members of the Steering Committee, including the identification for additional research funding for
future projects, and d) replication of this study’s research methodology with other Council clusters (e.g., apparel).

Steering Committee

A Steering Committee for the research project was formed, and two meetings were held at USC-Upstate (June 13, 2007; September 7, 2007). Steering Committee composition is presented in Table 3.

- The June 13\textsuperscript{th} meeting was an introductory meeting of the Steering Committee, and provided an open forum for ideas and suggestions for database development and company segmentation. Results of this meeting provided the additional necessary inputs for database development and the development of the Global Textile Competitiveness Framework.

- The September 7\textsuperscript{th} meeting provided the Steering Committee members with a project update and preliminary results presentation. This meeting provided the researchers with a) confirmation of the project’s holistic approach to the South Carolina textile complex, and b) identification of areas of project refinement needed prior to final report presentation to the South Carolina Council on Competitiveness.
Table 3  
Steering Committee Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>G. Ashley Allen</td>
<td>Milliken, President and Chief Executive Officer</td>
</tr>
<tr>
<td>Robert H. Chapman, III</td>
<td>Inman Mills, Chairman and Chief Executive Officer</td>
</tr>
<tr>
<td></td>
<td>Chairman, South Carolina Textile Cluster</td>
</tr>
<tr>
<td>Lewis Gossett</td>
<td>South Carolina Manufacturers Association (SCMA), President</td>
</tr>
<tr>
<td>Dr. Darrell F. Parker</td>
<td>University of South Carolina – Upstate, Dean</td>
</tr>
<tr>
<td>James R. Morris, Jr.</td>
<td>Genesis Consulting Group, President</td>
</tr>
<tr>
<td>Juli Maria Creek</td>
<td>The Export Consortium, Director – Business Development</td>
</tr>
<tr>
<td>Salle E. Fiffick</td>
<td>Public Policy Associate</td>
</tr>
<tr>
<td>Harry Miley</td>
<td>Miley Gallo &amp; Associates</td>
</tr>
<tr>
<td>J. Frank Rudisill</td>
<td>USC-Upstate</td>
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</tbody>
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SC Council on Competitiveness
- George Fletcher: Executive Director
- Jim Rogers: CEO, Rogers Consulting, LLC

NCSU College of Textiles Representation
- Nancy Cassill: Professor, Project PI
- Blanton Godfrey: Dean, College of Textiles, Project Co-PI
- Trevor Little: Department Head, TATM, Project Co-PI
- Stacey Frederick: NC State Graduate Student
- Laura Sampson: NC State Graduate Student
4. Background
4.1. The Global Textile Complex

A) Global Textile Complex Dynamics

The global textile complex is undergoing a massive restructuring. Global companies are marketing products in the most profitable places in the world, and manufacturing in the most economical and efficient places in the world. With the ending of the World Trade Organization (WTO) Multi-Fiber Arrangement in January 2005, changes in the global textile complex (markets, products, production) continue to evolve, due in part to trade issues (new trade legislation, safeguard provision with China). However, the following are several major trends affecting the global textile complex, many which will impact* the textile complex in South Carolina:

1. China dominates apparel and textiles *
2. High-tech and smart fabrics proliferate; fabric production offers possible domestic employment gain *
3. Supply Chain Management (SCM) evolves to serve the global market *
4. Synthetic fiber manufacturers face global glut *
5. U.S. linen sales dominated by big-box retailers and discount department stores *
6. The vast majority of shoes sold in the U.S. are now made in China (China dominating other product categories, as well)
7. Bricks, clicks, catalogs and living rooms (seamless integration of e-commerce and diverse distribution channels) *
8. Alternative sizing is big (attention to larger, average sized consumer) *
9. Discount clothing retailers see promise in designer lines *
10. Haute couture designers experience conflicts over costs and control
11. Luxury returns with a new focus on accessories *
12. Mass designers and retailers speed up for fast fashion *
13. Athletic footwear makers look to aesthetes (non-athletes), not athletes; and look overseas for new consumers *
14. European strategies force U.S. department stores to rethink their business models (market saturation; need for differentiation) *
15. Specialty retailers look forward, and to the past, for new ideas *
16. Some apparel manufacturers still resist outsourcing *
17. Apparel goes green; eco-friendly fabrics embraced by manufacturers and retailers *

* Denotes potential impact on textile complex in South Carolina
Source: (Plunkett’s Research, Ltd; www.plunkettresearch.com; 2007)

B) Production and Consumption

Global Production
The global apparel and textiles market grew by 3.9% in 2006 to reach a value of $1498.9B, having increased at a compound annual growth rate (CAGR) of 3.3% from 2002 to 2006 (Datamonitor, 2007). (Note: Datamonitor defines the apparel and textiles
market as consisting of apparel products such as menswear, womenswear, and childrenswear as well as unprocessed textiles – cotton yarn, rayon and acetate, synthetic fibers and wool yarn). The 2006 growth rate of the global apparel and textiles industry has been the highest in the last four years and is expected to fluctuate, following an upward trend over the pending forecast period. The apparel, accessories, and luxury goods sector of the industry is the leading revenue source, accounting for 75.2% of the overall apparel and textiles market; the remainder of the market’s value is made up of textiles representing 14.3% and footwear totaling 10.5%. The United States’ share of the global apparel and textiles market is 22.7% in 2006 (with Europe at 30.1%, Asia-Pacific at 34.1%, and the rest of the world equaling 13.2%). By 2011, the apparel and textiles’ market forecast is to have a value of $1,824.4B, an increase of 21.7%. For the period of 2006 to 2011, the CAGR of the industry is predicted to be approximately 4.0% (Datamonitor, 2007).

Datamonitor (2007) also provides a profile of the textiles industry sector, which consists of the production of cotton, wool and man-made fibers for uses including apparel, home furnishing, footwear and other industrial purposes. The global textiles sector was valued at $243.6 billion wholesale (MSP) in 2005, and is predicted to grow at a compound annual growth rate of 3.6% from 2005 to 2010. Global textiles’ sector segmentation by fiber market share for 2003 was: synthetic fibers (43.10%), raw cotton (36.10%), cellulosic fibers (15.60%), and raw wool (5.20%). Global textiles’ sector segmentation by geography included: Asia-Pacific (46.70%), Europe (27.80%), and the Americas (25.40%). By 2010, the global textile market is forecasted to reach a value of $290 billion, following expansion at a growth rate of 19.1% since 2005.

One of the most significant trends in the global textile complex in recent years has been the reduction of operations in developed countries (e.g., Europe, Japan, and the U.S.) and the movement of production to developing countries, especially in Asian regions, such as China, India, Vietnam, and Indonesia (Datamonitor, 2007). After the WTO phase out of import quotas, the Asia-Pacific producers are facing cost-effective production solutions from other developing countries. Human rights violation pressures are another issue forcing many international apparel production companies to reassess their low cost production methods. Another trend within the textile and apparel industry is the intense business focus on the acquisition of increased market share within the Asia-Pacific’s market of increasingly brand-aware consumers (Datamonitor, 2007). Overall, the apparel industry has lower barriers to entry (than the textile industry), and developing nations are now able to enter the apparel industry at a quicker pace than other industries.

Production for U.S. Marketplace

Textiles:

Production of textile products in the United States has been a decline over the last several years. Dominated by imports from China and other countries that can provide products of reasonable quality for a low price has driven textile production out of the United States.
Value of 2006 production and imports of the US apparel and textile industry:

- US Production \$73.5B (Includes fabric, apparel, and carpets/rugs)
- US Exports \$24.6B (Includes fabric, apparel, and textile mill products)
- US Imports \$98.7B (Includes non-apparel, apparel, and fabric)

OTEXA, Plunkett’s Research (2007)

Due to the elimination of quotas, safeguards, and tariffs because of recent trade agreements, there has been a shift of the countries dominating the US market. Countries exporting textiles to the United States are more heavily concentrated in Asia and the Middle East. Tables 4 and 5 present the top 10 exporting countries to the United States for fabric and non-apparel products.
Table 4
Top 10 Countries Exporting Fabric to the US: 2005-2006*

<table>
<thead>
<tr>
<th>Country</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>838.937</td>
<td>900.069</td>
</tr>
<tr>
<td>Canada</td>
<td>781.686</td>
<td>686.477</td>
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<tr>
<td>South Korea</td>
<td>605.089</td>
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<td>Italy</td>
<td>422.278</td>
<td>412.591</td>
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<tr>
<td>Mexico</td>
<td>447.717</td>
<td>396.044</td>
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<tr>
<td>Japan</td>
<td>300.365</td>
<td>310.092</td>
</tr>
<tr>
<td>Pakistan</td>
<td>297.525</td>
<td>255.195</td>
</tr>
<tr>
<td>India</td>
<td>152.124</td>
<td>173.846</td>
</tr>
<tr>
<td>Germany</td>
<td>173.140</td>
<td>167.827</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>141.452</td>
<td>125.999</td>
</tr>
<tr>
<td>World</td>
<td>5,719.123</td>
<td>5,472.569</td>
</tr>
</tbody>
</table>

*Data in Millions (US $)

Source: OTEXA, 2007; Plunkett’s Research (2007)

Table 5
Top 10 Countries Exporting Non-Apparel to the US: 2005-2006*

<table>
<thead>
<tr>
<th>Country</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>7262.350</td>
<td>8549.981</td>
</tr>
<tr>
<td>India</td>
<td>1640.411</td>
<td>1844.179</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1645.544</td>
<td>1838.199</td>
</tr>
<tr>
<td>Canada</td>
<td>1571.025</td>
<td>1420.309</td>
</tr>
<tr>
<td>Mexico</td>
<td>1167.955</td>
<td>1079.206</td>
</tr>
<tr>
<td>Italy</td>
<td>789.672</td>
<td>758.614</td>
</tr>
<tr>
<td>South Korea</td>
<td>754.498</td>
<td>753.010</td>
</tr>
<tr>
<td>Turkey</td>
<td>664.755</td>
<td>585.649</td>
</tr>
<tr>
<td>Japan</td>
<td>346.279</td>
<td>355.103</td>
</tr>
<tr>
<td>Germany</td>
<td>319.196</td>
<td>293.818</td>
</tr>
<tr>
<td>World</td>
<td>20492.245</td>
<td>21648.875</td>
</tr>
</tbody>
</table>

*Data in millions (US $)

Source: OTEXA, 2007; Plunkett’s Research (2007)

Production for the U.S. marketplace consists of U.S. production (including 807/9802 programs) and imports. Since textiles are used in a variety of end uses, it is difficult to obtain production data for all individual textile end uses, except apparel.
Apparel:
The United States’ apparel industry is a large, mature and highly fragmented industry and as this industry continues to restructure (due predominantly to global competition, trade dynamics, and labor costs), global sourcing and reliance on global suppliers to service this market have been the growing trends. In 2005, the level of import penetration increased in almost every product category, resulting in the total U.S. apparel market penetration being over 91% (OTEXA, 2006). Table 6 provides the top countries (years 2005, 2006) exporting apparel to the United States’ market.

Table 6
Top 10 Countries Exporting Apparel to U.S. Marketplace (Does not include non-apparel)

<table>
<thead>
<tr>
<th>Country</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>15,142.9</td>
<td>18,517.5</td>
</tr>
<tr>
<td>Mexico</td>
<td>6,078.3</td>
<td>5,296.5</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2,875.4</td>
<td>3,670.5</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2,724.7</td>
<td>3,222.1</td>
</tr>
<tr>
<td>India</td>
<td>2,976.2</td>
<td>3,186.9</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>2,371.7</td>
<td>2,914.1</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>3,510.6</td>
<td>2,811.0</td>
</tr>
<tr>
<td>Honduras</td>
<td>2622.3</td>
<td>2440.3</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1,712.8</td>
<td>2135.7</td>
</tr>
<tr>
<td>The Philippines</td>
<td>1,830.4</td>
<td>2,002.5</td>
</tr>
<tr>
<td>World 2</td>
<td>68,713.3</td>
<td>71,629.2</td>
</tr>
</tbody>
</table>

Source: Plunkett Research, (2007)
1) Data in Millions (US $)
2) World: Rest of World

Apparel prices have declined/remained flat for the past four years, and it is anticipated that apparel prices will continue to decline, due to the elimination of quota (including the cost of quota) and global competition, even though tariffs will remain in place. In general, estimates from industry executives have indicated that these apparel prices (RSP) will be reduced 6 – 30% from previous years. These reduced costs are due, in part, to the cost of quota, industry competition, and labor costs. Production costs/hour (approximate) for U.S. workers is textiles ($11.91/hour) and apparel ($9.68/hour; OTEXA, 2006). South Carolina manufacturing earnings (Industry Code 30000000) for manufacturing are $15.74/hour (August 2007; South Carolina Employment Security). In contrast many developing countries’ wage structure for apparel production ranges from $.11/hour to $3.50/hour.

Consumption for U.S. Marketplace: Textiles and Apparel
In general, consumption for textiles and apparel has increased in the past decade. Apparent consumption for all textile products represents an increase for various textile
product categories (OTEXA, 2006). In 2005, the US economy showed positive gains with GDP increasing by 3.5%, following an increase of 4.3% in 2004. Also, personal incomes rose 5.5% to $10.2 trillion, and personal consumption expenditures (PCE) increased 6.5% to $8.7 trillion. On the other hand, savings dropped by $34B which is the first time in more than seventy years that it has dipped into negative territory. The increasing GDP and PCE percentages, along decreasing savings are crucial players in the increase in US consumption of apparel and textiles (American Apparel and Footwear Association, 2007).

For apparel, U.S. consumption increased by 6.1% to 20.5 billion garments in the year 2005, following a lower 1.7% increase in 2004. Apparel retail prices decreased 0.7%, while footwear retail prices rose by 2.8%. Personal consumption of apparel grew at a rate of 5.0% over the year 2005 to reach $345.4 billion (Standard & Poor’s, 2007).

The U.S. consumption of apparel (MSP) rose 18.7% in the first half of 2003, while U.S. retail sales of clothing and clothing accessory stores rose 3.9% to 178.4B (Standard & Poor’s, 2004). The U.S. personal consumption for clothing and shoes was $326 (June 2003; U.S. Department of Commerce Bureau Economic Analysis). Note: Total U.S. retail apparel sales (RSP) for 2006 was $190.10B, compared with only a 4% increase in the past three years (Standard & Poor’s, 2007). (Note: Datamonitor, 2006, reported that U.S. apparel sector’s value was worth $288.60B in 2005. By 2010, the U.S. market is expected to reach a value of $329.00B with a 2.7% growth rate which is lower than the global market’s anticipated apparel growth of 19.1%).

**C) Home Textiles – Bed and Bath Products**

To illustrate the changing dynamics in the home textiles industry, Table 7 provides United States’ imports of printed sheets.
Table 7: US Imports of Printed Sheets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World</td>
<td>241,814,319</td>
<td>58.20%</td>
<td>43.13%</td>
<td></td>
<td>87.74%</td>
<td>62.53%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>113,274,835</td>
<td>199.72%</td>
<td>94.05%</td>
<td>318.27%</td>
<td>89.46%</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>50,592,520</td>
<td>500.99%</td>
<td>85.50%</td>
<td>948.42%</td>
<td>133.57%</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>9,783,807</td>
<td>73.77%</td>
<td>294.08%</td>
<td>99.55%</td>
<td>264.43%</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>20,514,602</td>
<td>101.92%</td>
<td>-14.69%</td>
<td>149.41%</td>
<td>3.56%</td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>10,910,109</td>
<td>149.00%</td>
<td>76.81%</td>
<td>222.72%</td>
<td>72.62%</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>8,457,096</td>
<td>-45.33%</td>
<td>-5.82%</td>
<td>-51.42%</td>
<td>7.03%</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>7,041,916</td>
<td>-10.27%</td>
<td>9.04%</td>
<td>-13.40%</td>
<td>24.89%</td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>8,884,945</td>
<td>9.09%</td>
<td>-11.49%</td>
<td>-3.38%</td>
<td>-9.12%</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>3,116,538</td>
<td>-39.86%</td>
<td>-37.96%</td>
<td>-40.71%</td>
<td>-53.95%</td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>1,337,243</td>
<td>-41.92%</td>
<td>-65.08%</td>
<td>-54.60%</td>
<td>-44.64%</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>1,216,258</td>
<td>-51.28%</td>
<td>-36.68%</td>
<td>-53.68%</td>
<td>0.19%</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>1,295,949</td>
<td>-74.77%</td>
<td>118.09%</td>
<td>-78.34%</td>
<td>152.37%</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>2,797,736</td>
<td>31.52%</td>
<td>19.93%</td>
<td>40.56%</td>
<td>68.25%</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>351,502</td>
<td>-14.42%</td>
<td>42.67%</td>
<td>53.97%</td>
<td>-11.94%</td>
<td></td>
</tr>
<tr>
<td>Philippines</td>
<td>174,900</td>
<td>-14.42%</td>
<td>57.65%</td>
<td>-31.42%</td>
<td>31.42%</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>512,310</td>
<td>1.10%</td>
<td>19.46%</td>
<td>37.39%</td>
<td>83.47%</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>151,143</td>
<td>178.98%</td>
<td>34.35%</td>
<td>298.17%</td>
<td>285.33%</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>443,861</td>
<td>-72.27%</td>
<td>162.09%</td>
<td>-83.36%</td>
<td>83.87%</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>146,675</td>
<td>-85.59%</td>
<td>21.90%</td>
<td>-82.15%</td>
<td>95.97%</td>
<td></td>
</tr>
</tbody>
</table>

Compiled Data from US Department of Commerce / OTEXA

Source: Table developed by Garcia, B. & Kang, S. (2007).

The total U.S. imports in volume in 2005 of printed cotton bed sheets were 88%. This was the first year without quotas and further rising to 62% from January-August in 2006. Non-printed cotton bed sheet imports more than doubled in volume in 2005 before modestly increasing 10% in the first eight months of 2006.
Product and Marketing Issues

Key product and marketing issues relate to technical innovation, product development with yarn constructions, improved finishing techniques, a value orientation (highest quality for the price, with branded product), and performance-enhancing features (such as wrinkle resistant – and other features that have been incorporated into apparel products). Products that compete successfully in the U.S. marketplace must have (at a minimum) product and marketing attributes.

United States’ linen sales are dominated by big-box retailers (Linens ‘n Things and Bed Bath & Beyond) and mass market and wholesale clubs, such as Wal-Mart, Target and Costco (Cotton Incorporated, 2005).

Supply Chain Dynamics

Trade, logistics and transportation, speed to market, and retail partnerships are key areas of emphasis in the global textile and apparel market. Challenges faced by the global textile complex involve a) design and development of creative new products, utilizing market data to create product and market innovation; b) manufacturing to produce quality, cost-effective products, c) coordination of components in manufacturing facilities, d) assembly into packaged goods (ready for retail floor – includes ticketing), and e) distribution (across oceans, rail, highways) to arrive at correct locations (distribution centers, retail stores) in right quantity, colors, and fashions to satisfy consumer demand --- at the lowest possible cost. A growing preference is “full package”, where the manufacturer procures the fiber/fabric and components, and completes the manufacturing process of the packaged good, with shipment to the end customer.

Global Supply Chains: U.S. Markets

Diverse supply chain configurations are occurring within the global textile complex. Textile imports from U.S. Trade Preference programs remain important (Table 8).

<table>
<thead>
<tr>
<th>Country</th>
<th>SME (Millions)</th>
<th>Dollars (Millions; US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI/CBTPA</td>
<td>3796.36</td>
<td>8992.73</td>
</tr>
<tr>
<td>AGOA</td>
<td>339.96</td>
<td>1315.45</td>
</tr>
<tr>
<td>ANDEAN</td>
<td>262.71</td>
<td>1462.66</td>
</tr>
</tbody>
</table>

Sources: OTEXA, 2007.

United States apparel imports from U.S. Trade Preference programs remain important (See Table 9).
Table 9

<table>
<thead>
<tr>
<th>Country</th>
<th>SME (Millions)</th>
<th>Dollars (Millions; US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI/CBTCYA</td>
<td>3699.46</td>
<td>8831.51</td>
</tr>
<tr>
<td>AGOA</td>
<td>325.97</td>
<td>1291.80</td>
</tr>
<tr>
<td>ANDEAN</td>
<td>218.33</td>
<td>1395.35</td>
</tr>
</tbody>
</table>

Sources: OTEXA, 2007.

Supply Chain Issues: U.S. Market

In addition to product issues (design, development, quality), time (“speed to market”) and cost remain key supply chain issues. It has been reported that numerous companies outsourced a portion of their supply chain management processes (Plunkett’s Research, 2006) in order to provide timely goods to retail customers. Risks and disruptions in the supply chain (weather, communication, terrorism/accidents, inspections or human errors, incorrect documentation) can create delays. Third-party logistics companies provide a valuable role in a targeted “seamless” movement of products – but at a cost to the process.

While *speed to market* remains a key issue for those companies providing products to the U.S. marketplace, suppliers find it imperative to partner with customers regarding product planning (design, development, inventory) and delivery. To respond to new product development demands (new designs, product-line extensions, and/or wholly new product lines), companies develop new products internally (which requires investment in time, R & D, marketing) OR “obtain” new products externally by signing licensing agreements and/or acquiring another company.

With *consolidation of the U.S. retail industry*, larger retailers have the power to dictate terms to their suppliers, often requiring costly infrastructure and technological investments that are compatible with retailers. Specific issues creating havoc for textile and apparel suppliers include:

a) *technology development* (CAD) and data systems for purchases, invoicing, and automatic replenishment (such as EDI – electronic data interchange) that are inflexible to account for the incredible variety in textile goods (weaves, fibers, color, texture, quality, style, size);

b) *fickle demand* in apparel consumers – related to product life cycle (accepting then abandoning style) resulting in retailers’ changing inventory decisions and markdowns;

c) *shorter cycles*, with shortening the design, development and product and distribution cycles; and

d) *global production* from Asian countries (particularly China, Southeast Asia, including India) offering services at lower prices – reducing profit margins and leaving little room for error.
Industry interviews have estimated that logistics costs (in terms of dollars) for textile and apparel products varies greatly by products and can account for anywhere from 3-30% of the landed cost of the product. Even with these challenges to suppliers (e.g., demands made predominantly by U.S. retailers to suppliers), there are success stories in the global industry, companies that provide efficient logistical models. For example, TAL Apparel, Ltd., a manufacturer based in Hong Kong, takes over practically every aspect of the supply chain for J.C. Penney for store-branded (private label) dress shirts.

While existing data provides a profile of past and current global dynamics, industry interviews with executives in Hong Kong and China (U.S. and Asian ownership) revealed interesting future global dynamics for the textile and apparel complex. Key issues that executives indicated were impacting the global business are included in Table 10.
Table 10  
**Key Themes for Future Global Competitiveness: Textile and Apparel Industry**  
*(From Asia Interviews)*

- Evaluating first cost versus total cost as a key decision process.
- Niche products: design, packaging – being used as a competitive advantage.
- Branding and branding decisions as a key driver in how business is done.
- China with located centers of excellence (“clusters”) will increase offerings of full-package resources for certain apparel products.
- Retailers driving the migration of the global supply chain.
- Increasing compliance efforts through retailer efforts. Specifically, retailers do thorough checks on worker hours and treatment, plant conditions, and environmental regulations in off-shore countries. Several people mentioned the enforcement of 60 hours worked in China, but not in the U.S.
- Fabric supply is key factor in either manufacturing location and/or sourcing decisions.
- Enforcement of antidumping laws and safeguards are uncertain now that quotas are gone. This is causing companies to “wait and see” what will happen in the next 2-3 years before making any major strategic changes.
- The tsunamis had very little or no effect on sourcing in the textile and apparel industry, since most factories were inland, and therefore at a higher elevation.
- The market has not realized any significant price decreases with quota elimination (1/1/05) in any category, ranging from consumer pricing to supplier pricing. Price decreases have not been passed along the supply chain.
- U.S. textile manufacturers are “out of the loop”, in terms of sourcing opportunities driven by retailers.
- Two mentalities exist: Asian mentality (flexibility – willing to do anything for a sale) vs. U.S. mentality (productivity – less flexibility).
- The most successful companies are those with a global perspective which includes a mix of a) owning manufacturing facilities, b) joint ventures, and c) third party sourcing along with branding and portfolio diversification.
- The goal: Chinese flexibility with U.S. reliability.
- In Asia, a common struggle is finding adequate middle management.
- Relationships (suppliers, vendors, government, and joint venture partners) are vital to doing business in China.
- Different business models are being used depending on the type of company and type of product.

E) DR-CAFTA

DR-CAFTA legislation, passed by the United States Congress in 2005, impacts the global textile complex, including the South Carolina textile complex.

Textile and Apparel Trade with DR-CAFTA

The six countries in DR-CAFTA (El Salvador, Honduras, Guatemala, Nicaragua, Costa Rica, Dominican Republic) mostly supply “high-volume commodity” items with a dependable consumer demand. Most trade that is conducted within the DR-CAFTA region is for simple manufacturing and sewing operations (majority is cotton fiber products). The goods tend to be basic with few style changes. The runs tend to be large and standardized to help offset the labor cost over those in Asia.

The preferential trade agreements concerning DR-CAFTA affected many textile and apparel suppliers’ decisions to stay in the region. The labor costs are higher than those in Asia and with the combined high cost of using U.S. fabrics and yarns, the benefits are slim. The DR-CAFTA negotiations helped to alleviate some of these issues though many still exist and suppliers view Asia as a more feasible option. Therefore, many suppliers produce low labor content items in this region such as basic knits, pants, shorts, underwear, and nightwear. The rising labor costs are making these countries lose their competitiveness against China and other Asian countries.

In general, fashion items are not sourced to these countries because of the need for complex and delicate sewing operations. Many of the managerial skills and skill sets needed to produce high fashion garments are not available in this area.

One benefit many suppliers have taken advantage of is the short lead times offered by DR-CAFTA countries. The lead-time is anywhere between 2-7 days. This short lead-time allows U.S. suppliers to better meet market demands and adjust orders.

Many of the fabrics used in apparel production are from the United States, Mexico, or Asia. However, some U.S. fabrics are being overlooked even with trade agreements because of the higher cost of these fabrics. Many firms have documented U.S. fabrics costing 20-40% more than local or Asian fabrics. Even with the higher tariffs and restrictions, Asian fabrics are found to be cost efficient.

Few DR-CAFTA firms offer full package services to U.S. firms. Many firms recognize the appeal of this option and are taking steps towards providing it. Many Asian investors within the area are offering full package options, but these firms are Asian based. Dominican Republic and Honduras have firms that provide full package services; some of the firms in Honduras are Taiwanese or Korean based. Table 11 provides DR-CAFTA provisions.
Table 11
Summary of DR-CAFTA Provisions

- Signed on August 5, 2005, the beneficiary countries are the Dominican Republic, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the United States
- Includes the elimination of tariffs and trade barriers to encourage an increase in regional opportunities for manufacturers, workers, farmers, consumers, and service providers
- Immediately tariffs will be eliminated on 80% of industrial and consumer products while the rest will be phased out over 10 years
- The DR-CAFTA Trade agreement creates the second largest Latin American export market for the US behind only Mexico and the 10th largest U.S. market in the world. The export growth to the DR-CAFTA countries grew at a pace faster than all of US exports
- DR-CAFTA requires important reforms of the domestic legal and business environment that encourage competitive business development and investment, protect intellectual property rights, and promote transparency and rule-of-law in the democratic systems that have solidified in the region over the past decade. DR-CAFTA is an important instrument to support U.S. national security interests; the FTA promotes closer economic cooperation among the Central American countries, thereby advancing regional integration and contributing to greater peace and stability in the region. (www.export.gov/fta)
- The DR-CAFTA trade agreement is the tightest textile trade agreement – the Yarn Forward Rule establishes the only qualifiers for the duty-free benefits are those whose yarn and fabric are from one of the specified countries (United States, Central America and the Dominican Republic). No less than 90% of all products are subject to this rule
- There is a retroactive duty-free provision added to the agreement beginning with January 1, 2004 – This provision is believed to encourage expansion in the region of US and CAFTA production partners
- Tariff preference levels (TPL) were not submitted to El Salvador, Costa Rica, Guatemala, and Honduras (which all constitute over 94% of apparel exports of Central America). This is the first time the United States has negotiated a trade agreement and signed it without applying a TPL to every country
- DR-CAFTA establishes stricter customs enforcement – The United States can conduct surprise visits to producers in Central America and undertake other enforcement actions to suspicious goods such as a bar of entry
- A cumulation provision will also help to improve customs enforcement and cooperation rules. For Mexico and Canada to gain access to duty free benefits they must actively work with the United States to improve their customs enforcement to help stop those who wish to evade customs rules. A total of 100 million square meters is the beginning annual cap but can increase to 200 million for Mexico and Canada. The growth of this cap is tied directly with the growth of the CAFTA trade.
• The United States did establish a textile safeguard provision – if injury should occur due to import surges, the US is allowed to impose certain tariffs on certain textile products
• Each party is still confined to the rules and regulations of the International Labor Organization concerning the treatment and rights of their employees and working environment. Enforcement of labor laws will be implemented in every country and these should not be violated

Source: OTEXA, 2006

F) Ending of World Trade Organization (WTO) Multi-Fiber Arrangement January 1, 2005
(Note: With China safeguards in place until 2008 for 34 product categories, global dynamics regarding production, consumption, and sourcing continue to occur).

Anticipated Impacts

With the ending of the World Trade Organization (WTO) Multi-Fiber Arrangement January 1, 2005, the elimination of quota has provided opportunities and challenges for countries and global apparel companies. In general, U.S. corporations continue to move production offshore in search of efficiencies and economics (lower costs and higher profits). However, with the growth of China’s infrastructure (particularly in textile and apparel production), many market analysts predict that smaller developing nations, whose economic basis has largely been in the (apparel) manufacturing sector, are expected to suffer job losses. Specific predictions indicated that after 2005, many global apparel manufacturers/marketers will consolidate their production to fewer countries for cost savings as well as reducing risks, providing more efficiencies (e.g., response time to consumer needs as well as market distribution). A report (Sweatshop, 2003) indicated that by 2010 the number of foreign suppliers could drop to 1/4 - 1/3 of the number stated in 2005.

In general, textile and apparel production is expected to concentrate in countries that have:
• High under-employed populations
• Low-cost reliable labor
• Vertical textile set-up
• Current textile expertise/infrastructure
• Special trade privileges (AGOA, NAFTA, QIZ)
• Proximity to market
• Low costs (first cost and final cost – “landed” cost)
• Developed transportation and telecommunications systems
• Expertise in “full package”, as this will provide the most competitive offer (countries currently known for this expertise includes China, India, Pakistan, Vietnam).

Note: “Value-added” services (pre-production, post-production) continue to be concentrated in developed countries.
Industries that are cited “most at risk” include low-skill, low-wage industries employing relatively few workers, while “least at risk” include high-skill, high-wage industries who have identified a market niche for their product and service, including high-tech and smart fabrics (Bernard et al, 2004). The U.S. Department of Labor (Bureau of Labor Statistics, 2007) reports that employment in “broader textile mills” (NAICS 313, 314) totals 367,030, a decline since 2004 (which reported 383,200 textile manufacturing jobs). United States’ employment levels in apparel and footwear manufacturing have fallen drastically. According to the US Department of Labor, domestic apparel employment has fallen by 79% from the mid-1990s to 181,300 in February 2007 (from 853,800 in December 2004). Increased quotas, reduced tariffs, and a string of free-trade and preferential trade agreements have contributed to the steady flow of manufacturing jobs out of the United States and into low-cost countries in Asia, Latin America, Africa and the Caribbean. According to the Department of Labor data (2007), apparel employment peaked in 1973 at 1.45 million; since then, the sector has shed more than a million jobs.

These dynamic changes will continue to create political, economic, legal and social issues. In addition, even with the elimination of quotas, tariffs will remain in place for products (estimated through 2015). Countries with preferential tariff advantages provide significant economic advantages for global companies in the export of products.

Safeguard Provision

A key issue remaining in today’s global marketplace is the safeguard provision related to trade with China. The continued debate in the U.S. marketplace between supply chain members has been the issue of filing safeguards with evidence of “market disruption” (documented evidence; a position taken by U.S. apparel marketers, retailers, and importers) versus “presumed market disruption” (a position of many U.S. fiber, yarn, and fabric manufacturers). China, in responding to the safeguard petitions filed in 2003 and 2004, proposed a potential “tariff” on each item exported. (Note: This tariff expected to encourage China’s production of “high-value” niche products - which can absorb the tariff easier - with the potential of shifting commodity/basic goods - with low margins - to other developing countries). November 2005, a total of 34 safeguards for textile and apparel products (originating from China and destined for the U.S. marketplace) were put into place.

In addition to the safeguard differences, members of the U.S. textile supply chain remain divided regarding political and trade issues. The August 2005 passage of DR-CAFTA legislation by the U.S. Congress has been ratified by all six DR-CAFTA countries (Nicaragua, El Salvador, Honduras, Guatemala, Dominican Republic, Costa Rica). In addition, continuing discussions about the impact of Vietnam joining the WTO, deliberations about trade promotion authority (TPA), political issues (Democrats and Republicans) regarding effectiveness of “free trade”, and trade agreements (including Free Trade of the Americas (FTAA) and other agreements being negotiated (e.g., Korea, others), will potentially have a significant impact on the South Carolina textile complex.
Impact of Elimination of Quota

Speculation continues to occur regarding the impact of the elimination of quota (January 1, 2005). Overall, it is anticipated that quota elimination will continue to provide a greater variety of product in the U.S. marketplace at a lower cost. While U.S. textile and apparel prices have continued on a price deflation slant for the last several years, it is still too early to anticipate if/when the cost savings from elimination of quota will be passed on to consumers, and how the cost savings will be “shared” in the supply chain. Several industry sources consistently indicate, however, that the outsourcing of U.S. manufacturing and retailing will result in a “narrower” vendor matrix – with textile and apparel manufacturers/marketers and retailers sourcing from fewer vendors and fewer countries.

G) U.S. Retail Marketplace

While statistics for all textile product end uses at retail are difficult to obtain, Table 12 provides United States’ retail sales for apparel products.

<table>
<thead>
<tr>
<th>Year</th>
<th>Apparel Stores</th>
<th>Men’s Apparel</th>
<th>Women’s Apparel</th>
<th>Family and Other Apparel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>214,732</td>
<td>9,772</td>
<td>39,407</td>
<td>109,886</td>
</tr>
<tr>
<td>Change 2005-2006 (%)</td>
<td>6.4%</td>
<td>3.2%</td>
<td>6.7%</td>
<td>6.7%</td>
</tr>
<tr>
<td>10 Year Growth Rate (%)</td>
<td>4.6%</td>
<td>.02%</td>
<td>3.4%</td>
<td>6.9%</td>
</tr>
</tbody>
</table>

*Millions (US $)
Standard and Poor’s Industry Survey, 2007

United States’ apparel sales rose 5.1% in 2006 to $190.1 billion, according to the NPD Group, a market research firm. Sales of women’s apparel rose 5.3% to $102 billion, while men’s apparel sales rose 2.9% to $54.8 billion. Sales of children’s clothing rose 8.4% to $33.3 billion. Women’s clothing represented 54% of all apparel sales in 2006. The men’s apparel segment made up 29% of clothing sales. Children’s apparel (clothing for boys, girls, infants, and toddlers) made up the rest with 17%. Retail sales of apparel rose 5% in 2006, compared with a 4% increase in each of the past three years, according to NPD Fashionworld consumer estimated data.

Through February 2007, United States’ consumers spent an annualized $369.7 billion on clothing and footwear, up 4.2% from the $354.8 billion spent in the year earlier period, according to the U.S. Department of Commerce. Given an estimated US population of 301.6 million as of February 2007, per capita expenditures on clothing and footwear equaled roughly $1,226.
United States’ retailers have experienced declining prices due to imports from China and Southeast Asia countries as well as aggressive price promotions. Table 13 lists 2006 sales units (in percentages) by U.S. retail distribution channel.

Table 13
Sales Units for U.S. Retail, by Distribution Channel (2006)

<table>
<thead>
<tr>
<th>U.S. Retail Distribution Channel</th>
<th>Sales Units a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty</td>
<td>30.8%</td>
</tr>
<tr>
<td>Department</td>
<td>16.2%</td>
</tr>
<tr>
<td>Mass merchants b</td>
<td>19.9%</td>
</tr>
<tr>
<td>National chains</td>
<td>14.6%</td>
</tr>
<tr>
<td>Off-price</td>
<td>7.5%</td>
</tr>
<tr>
<td>Direct mail/e-tail</td>
<td>5.1%</td>
</tr>
<tr>
<td>Factory outlets</td>
<td>1.7%</td>
</tr>
<tr>
<td>All other</td>
<td>4.2%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>


a Percentage of apparel dollars purchased by consumers at distribution channels

b Three largest discount stores: Wal*Mart 272.3B; Target 59.5B; Kmart 18.6B. Wal*Mart is the world’s largest retailer (272.3B fiscal year ending January 2007 – about 2.1% of US GDP).

c Warehouse stores, dollar stores, company stores, membership retail outlets.

Notes:
More women’s than men’s apparel purchased in specialty and department stores
Men’s apparel more prevalent in discount and general merchandise
Children’s’ apparel higher proportion in discount stores
All other includes warehouse, outlets, company stores, miscellaneous

U.S. Retail Industry Issues
The United States’ retail industry, like the global textile complex, is faced with many issues:

• Creation of multiple collections by vendors under different labels, many exclusive to individual retailers (e.g., private labels). These private label products provide key product/fashion trends with cost and value advantages and may involve licensing agreements and exclusive arrangements with designers

• Development and marketing of secondary brands (e.g., Polo Ralph Lauren’s Chaps line for Kohl’s) to provide key fashion products, with less expensive fabrics and fewer embellishments

• Speed to market (“fast fashion”) for apparel and home textile products, especially with fashion-basic and fashion goods

• Focus of mass retailers (discounters) on affordable “value” fashions

• Focus on “big box” retailers and discount department stores for linen sales
U.S. Retail Industry Issues (continued)

- Increase of fashion goods by retailers due to improved sourcing and production capabilities.
- Use of information technology systems to improve design and development of products, merchandising, marketing, and inventory control.
- Increased adoption of e-commerce as a distribution channel for apparel and home textiles (linens).
- Increase in the focus on value -- as the hallmark for products and services.
- Price compression by retailers (especially discount retailers) to assure the greatest possible discount, allowing retailers to maintain and even lower apparel prices.
- Combination of a) mature highly saturated markets, b) slow sales growth environment, and c) merchants’ ability to raise prices to drive down costs and/or improve economies of scale.
- Product newness (via new product development; licensing agreements) to garner market share.
- Growth of hypermarkets or “membership only” warehouse clubs (such as Costco, BJ’s, Sam’s Club); merchandise is displayed via bulk displays of soft goods with low margins. Costco, for example, typically will maintain margins of 15%. This retail channel relies on increasingly sophisticated technology to help management inventory and reduce buying, supply and distribution costs.
- Retailers are stocking a diversity of apparel products:
  - Fashion merchandise: Shorter selling season, demand is cyclical, and long lead times.
  - Basic merchandise: Relatively unchanged in both style and design (underwear, t-shirts, jeans) with demand remaining steady. Predictable demand is such that the ordering process does not require long lead times.
  - Fashion-basic merchandise (in-between two categories): Basic items with fashion element (t-shirt with trim; stone washed jeans). Growing percentage of basic products have fashion component.
- Requirement of technology programs with retail partnerships.

Sources:
Standard & Poor’s Industry Surveys, 2007
Internet industry research, including company reports
Stores (National Retail Federation), 2006

U.S. Consumer Textile and Apparel Preferences at Retail
The current U.S. retail environment places a keen interest and knowledge of consumer preferences (including branding) and past purchases (“pull marketing” approach). There are numerous consumer marketplace issues, including:
- Value orientation (which can mean price + quality = value; can also mean emphasis on price, quality, service, convenience, or a combination).
- Cross-shopping across retail channels.
- “Precision shopping”, given limited time to shop.
- Dichotomy of luxury and commodity/basic products.
- Differentiated products, with niche product selections.
• Individualized and mass-customized products.
• Diverse pricing strategies: Opening retail price (full price) for some items, budget/low end prices for commodity/basic prices.
• Growing importance of diverse consumer micro-markets (diverse cultural, economic, social groups).
• Continued focus on spending power of consumer groups: Baby Boomers = biggest per capita consumption for many textile products; youth markets with significant spending power.
• Consumer’s focus on VALUE.

Sources:
Standard & Poor’s Industry Survey, 2007
Internet research, including company information

H) Definition: Textile Industry to Textile Complex

Given the above global competitive dynamics, the distribution of textile complex business continues to evolve to include pre-production, production, and post-production processes. Traditionally, the “textile industry” was defined by production activities (NAIC 313 – 315), but due to various dynamics identified earlier, several companies (including South Carolina companies) have transformed their business activities to include “textile complex” activities (including added-value activities) throughout the textile complex (see Figure 1).

![Figure 1: Textile Added Value Curve](image)

The inclusion of pre-production, production, and post-production activities have provided a broader depiction of the textile value chain (see Figure 2).

Figure 2. Textile Value Chain


4. II. Global Textile Competitiveness Framework (Fishbone Diagram)

To summarize the global textile competitiveness dynamics facing the South Carolina textile complex, the Global Textile Competitiveness Framework (Figure 3) was developed. The framework, a fishbone diagram, is a strategic approach to assess global competitiveness. This diagram takes into account macro-environmental (global) dynamics including economic, political/trade, textile industry production and consumption, global supply chain issues (including where the “power” is in the textile supply chain), industry trends, and product innovation.

The fishbone diagram includes: a) textile-related strategies (strategic initiatives) needed for global competition with corresponding tactics (business tactical implementations), and b) the combination of production, marketing and service
Components (with the emphasis on globalization further to the right – beyond operating with a product efficiency focus).

Companies can use the Global Textile Competitiveness Framework as an assessment tool to a) assess their existing core competencies (both strategies and tactics) and b) identify “gaps” in strategies and competencies (i.e., only tactical without strategic focus; strategies and tactics not aligned; only operating in strategies to the left, and not throughout the entire numerator).

**Figure 3**

*Global Textile Competitiveness Framework*

**Strategies**

![Diagram of Global Textile Competitiveness Framework]

**Tactics**

5. Results

5.1. South Carolina Textile Complex

Descriptive Profile:

Two steps were used to identify companies in the South Carolina Textile Complex Database:

Step 1:
- A company location must have a primary code listed in Reference USA:
  - 313-315
  - Textile Machinery
  - Wholesale
  - Fiber
- OR be listed in Davison’s Textile Bluebook in South Carolina

Companies meeting these criteria included:
Reference USA: 618 South Carolina textile complex companies
Dun & Bradstreet: 706 South Carolina textile complex companies
Davison’s Textile Blue Book: 488 South Carolina textile complex companies
Step 2:  
Company location must EXIST by phone number or name in two of the three databases (Reference USA, Dun & Bradstreet, Davison’s Textile Blue Book).

RESULT: South Carolina Textile Database: 912 total textile company locations (Note: includes 10 locations included on subjective basis).

A total of 46 of the 46 counties in South Carolina have at least one textile complex company location with representation of companies in the following sectors (See Figure 4):

Figure 4  
South Carolina Textile Complex


Table 14 presents descriptive information about the textile complex in South Carolina, as represented in the South Carolina Textile Complex Database. Figures 5 and 6 visually depict the company locations of the South Carolina Textile Complex and Figure 7 presents the I-85 corridor of the textile complex (Charlotte, North Carolina cluster connecting with the South Carolina textile complex).


Table 14  
Descriptive Analyses  
South Carolina Textile Complex Database  

<table>
<thead>
<tr>
<th>Companies</th>
<th>912 companies&lt;sup&gt;(a)&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes fiber &amp; yarns, textile mills, textile product mills, synthetic fibers, wholesale, apparel &amp; home interiors, accessories, logistics, textile machinery, chemicals, packaging, recycling, and associations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees</th>
<th>64,759 employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Over 1000 (n = 6; .2%)</td>
</tr>
<tr>
<td></td>
<td>501-999 (n = 17; 1.9%)</td>
</tr>
<tr>
<td></td>
<td>250-500 (n = 50; 5.6%)</td>
</tr>
<tr>
<td></td>
<td>100-249 (n = 81; 8.9%)</td>
</tr>
<tr>
<td></td>
<td>50-99 (n= 82; 9.0%)</td>
</tr>
<tr>
<td></td>
<td>25-49 (n = 91; 10.0%)</td>
</tr>
<tr>
<td></td>
<td>10-24 (n = 173; 19.0%)</td>
</tr>
<tr>
<td></td>
<td>5-9 (n = 130; 14.4%)</td>
</tr>
<tr>
<td></td>
<td>1-4 (n = 263; 28.8%)</td>
</tr>
<tr>
<td></td>
<td>No size listed (n = 19; 2.2%)</td>
</tr>
</tbody>
</table>

| Ownership | 6.9% are public; 93.1% are private |

| Sales | Total Sales are: $21,847,119,110 (90.0% companies with reported data)<sup>(b)</sup> |

<table>
<thead>
<tr>
<th>Function of Location</th>
<th>Number of Companies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber</td>
<td>8</td>
<td>.6%</td>
</tr>
<tr>
<td>Yarn &amp; Thread</td>
<td>29</td>
<td>3.2%</td>
</tr>
<tr>
<td>Fabric</td>
<td>140</td>
<td>15.4%</td>
</tr>
<tr>
<td>Woven</td>
<td>96/140</td>
<td></td>
</tr>
<tr>
<td>Narrow</td>
<td>14/140</td>
<td></td>
</tr>
<tr>
<td>Nonwoven</td>
<td>18/140</td>
<td></td>
</tr>
<tr>
<td>Knit</td>
<td>12/140</td>
<td></td>
</tr>
<tr>
<td>Finishing</td>
<td>125</td>
<td>13.8%</td>
</tr>
<tr>
<td>Woven</td>
<td>44/125</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>75/125</td>
<td></td>
</tr>
<tr>
<td>Coating</td>
<td>6/125</td>
<td></td>
</tr>
<tr>
<td>Textile Products</td>
<td>185</td>
<td>20.4%</td>
</tr>
<tr>
<td>Apparel</td>
<td>95</td>
<td>10.6%</td>
</tr>
<tr>
<td>Wholesale</td>
<td>133</td>
<td>14.7%</td>
</tr>
<tr>
<td>Yarn/Fabric</td>
<td>39/133</td>
<td></td>
</tr>
<tr>
<td>Apparel</td>
<td>37/133</td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>57/133</td>
<td></td>
</tr>
<tr>
<td>Business Type</td>
<td>Quantity</td>
<td>Percentage</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>Logistics</td>
<td>4</td>
<td>.5%</td>
</tr>
<tr>
<td>Machinery</td>
<td>149</td>
<td>16.4%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>20</td>
<td>2.2%</td>
</tr>
<tr>
<td>Packaging</td>
<td>5</td>
<td>.5%</td>
</tr>
<tr>
<td>Recycling</td>
<td>3</td>
<td>.4%</td>
</tr>
<tr>
<td>Trade Organizations</td>
<td>12</td>
<td>1.3%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>912</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

**Trade/Technology Adoption/Global Orientation**

<table>
<thead>
<tr>
<th>Import/Export</th>
<th>Quantity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Only</td>
<td>68</td>
<td>7.5%</td>
</tr>
<tr>
<td>Import Only</td>
<td>42</td>
<td>4.6%</td>
</tr>
<tr>
<td>Both</td>
<td>84</td>
<td>9.2%</td>
</tr>
<tr>
<td>Websites</td>
<td></td>
<td>55.8%</td>
</tr>
</tbody>
</table>

aData represents validated company locations. We acknowledge that government data differs.

bSome sales are estimates, some are actual.

Note: Springs ($2.4B), Bowater ($3.5B), Sonoco ($3.6B), Intertech ($2.5B) are included in total.

cLimited data: website, Commerce participation

**Figure 5. South Carolina Textile Complex – Company Locations by Business**
Figure 6. South Carolina Textile Complex – Sector Representation

Results:
Location
(n=912)

Figure 7. South Carolina Textile Complex – Sales

Results:
Sales
n=$21,847,119,110
Figure 8. South Carolina Textile Complex – Employment

Results:
Employment (n=64,759)

Figure 9. Interstate 85 Corridor Textile Complex: Carolinas
NC and SC Textile Connection
Global Trade Dynamics of the South Carolina Textile Complex

The South Carolina advanced manufacturing sectors (NAICS 313, 314, 315) have been active in exporting textile products. The following tables (Tables 15-20) depict this export activity:

Table 15. South Carolina Exports: Yarn and Fabric (NAIC 313)

SC Exports of Yarn and Fabric (NAIC: 313)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>6 Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Countries</td>
<td>507,760,614</td>
<td>458,916,722</td>
<td>482,812,766</td>
<td>570,651,934</td>
<td>590,025,282</td>
<td>537,529,865</td>
<td>3,147,697,183</td>
</tr>
<tr>
<td>1</td>
<td>Canada</td>
<td>162,224,637</td>
<td>165,406,600</td>
<td>158,002,428</td>
<td>162,853,501</td>
<td>150,862,088</td>
<td>128,087,955</td>
<td>927,437,201</td>
</tr>
<tr>
<td>2</td>
<td>Mexico</td>
<td>82,543,169</td>
<td>62,937,635</td>
<td>73,195,274</td>
<td>95,549,735</td>
<td>113,154,899</td>
<td>111,820,890</td>
<td>539,201,513</td>
</tr>
<tr>
<td>3</td>
<td>Honduras</td>
<td>41,410,664</td>
<td>28,083,721</td>
<td>39,334,957</td>
<td>74,498,774</td>
<td>68,944,551</td>
<td>44,904,909</td>
<td>297,177,574</td>
</tr>
<tr>
<td>4</td>
<td>El Salvador</td>
<td>41,343,801</td>
<td>45,841,757</td>
<td>40,560,209</td>
<td>36,237,130</td>
<td>36,905,647</td>
<td>30,961,577</td>
<td>231,850,321</td>
</tr>
<tr>
<td>5</td>
<td>Colombia</td>
<td>3,941,853</td>
<td>1,697,739</td>
<td>2,784,803</td>
<td>13,659,095</td>
<td>12,372,124</td>
<td>26,481,351</td>
<td>60,936,965</td>
</tr>
<tr>
<td>7</td>
<td>China</td>
<td>8,101,485</td>
<td>10,038,901</td>
<td>10,563,811</td>
<td>11,576,448</td>
<td>12,778,066</td>
<td>21,652,654</td>
<td>74,711,369</td>
</tr>
<tr>
<td>8</td>
<td>Dominican Republic</td>
<td>33,393,385</td>
<td>25,057,599</td>
<td>31,915,093</td>
<td>32,845,826</td>
<td>29,384,418</td>
<td>15,310,410</td>
<td>157,906,737</td>
</tr>
<tr>
<td>9</td>
<td>Nicaragua</td>
<td>1,453,970</td>
<td>4,171,868</td>
<td>1,090,408</td>
<td>2,784,188</td>
<td>14,754,088</td>
<td>14,686,502</td>
<td>38,941,029</td>
</tr>
<tr>
<td>10</td>
<td>United Kingdom</td>
<td>10,315,633</td>
<td>10,081,931</td>
<td>12,861,093</td>
<td>13,288,864</td>
<td>13,382,987</td>
<td>13,861,992</td>
<td>73,792,499</td>
</tr>
</tbody>
</table>

Source: Origin of Movement Data from GTIS using U.S. government statistics

Note: Significant South Carolina yarn and fabric exports to NAFTA and DR-CAFTA regions
### Table 16. South Carolina Exports of Yarn and Fabric: Rank among U.S.

**SC Exports of Yarn and Fabric (NAIC: 313)**

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>6 Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North Carolina</td>
<td>1,204,685,562</td>
<td>1,297,029,139</td>
<td>1,375,876,550</td>
<td>1,590,553,759</td>
<td>1,719,593,801</td>
<td>1,841,198,128</td>
<td>9,028,936,939</td>
</tr>
<tr>
<td>2</td>
<td>Texas</td>
<td>1,364,129,011</td>
<td>1,402,165,651</td>
<td>1,412,689,426</td>
<td>1,353,279,762</td>
<td>1,323,931,721</td>
<td>1,290,258,324</td>
<td>8,106,453,895</td>
</tr>
<tr>
<td>3</td>
<td>California</td>
<td>553,743,360</td>
<td>613,775,337</td>
<td>650,306,200</td>
<td>726,848,006</td>
<td>743,329,101</td>
<td>688,799,006</td>
<td>4,796,801,010</td>
</tr>
<tr>
<td>4</td>
<td>Georgia</td>
<td>406,552,643</td>
<td>487,120,763</td>
<td>480,070,273</td>
<td>653,359,886</td>
<td>705,567,925</td>
<td>644,585,591</td>
<td>3,357,256,781</td>
</tr>
<tr>
<td>5</td>
<td>South Carolina</td>
<td>507,760,614</td>
<td>458,916,722</td>
<td>482,812,766</td>
<td>570,651,934</td>
<td>590,025,282</td>
<td>537,529,865</td>
<td>3,147,697,183</td>
</tr>
</tbody>
</table>

Source: Origin of Movement Data from GTIS using U.S. government statistics

Note: South Carolina ranks #5 (among U.S. states) in exports of yarn and fabric

### Table 17. South Carolina Export Partners of Textile Mill Products (NAIC: 314)

**SC Export Partners of Textile Mill Products (NAIC: 314)**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>6 Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Canada</td>
<td>66,011,18</td>
<td>57,936,828</td>
<td>53,282,17</td>
<td>52,904,192</td>
<td>34,102,153</td>
<td>22,809,943</td>
<td>287,046,469</td>
</tr>
<tr>
<td>2</td>
<td>Mexico</td>
<td>2,276,134</td>
<td>4,343,560</td>
<td>2,179,784</td>
<td>5,013,451</td>
<td>7,384,788</td>
<td>12,720,440</td>
<td>33,918,154</td>
</tr>
<tr>
<td>3</td>
<td>United Kingdom</td>
<td>2,575,802</td>
<td>2,172,857</td>
<td>4,859,252</td>
<td>3,381,329</td>
<td>2,920,418</td>
<td>3,953,655</td>
<td>19,863,307</td>
</tr>
<tr>
<td>4</td>
<td>United Arab Emirates</td>
<td>170,757</td>
<td>556,151</td>
<td>161,850</td>
<td>275,053</td>
<td>199,894</td>
<td>2,875,164</td>
<td>4,238,869</td>
</tr>
<tr>
<td>5</td>
<td>China</td>
<td>673,630</td>
<td>1,614,922</td>
<td>2,829,058</td>
<td>1,234,531</td>
<td>1,580,617</td>
<td>2,326,215</td>
<td>10,258,973</td>
</tr>
<tr>
<td>6</td>
<td>Japan</td>
<td>2,588,084</td>
<td>699,516</td>
<td>2,440,964</td>
<td>3,319,090</td>
<td>2,641,004</td>
<td>1,883,638</td>
<td>13,572,296</td>
</tr>
<tr>
<td>7</td>
<td>India</td>
<td>314,753</td>
<td>937,903</td>
<td>1,429,297</td>
<td>1,022,370</td>
<td>2,658,792</td>
<td>1,593,874</td>
<td>7,956,989</td>
</tr>
<tr>
<td>8</td>
<td>Germany</td>
<td>434,857</td>
<td>742,027</td>
<td>410,374</td>
<td>657,924</td>
<td>803,417</td>
<td>1,532,367</td>
<td>4,580,966</td>
</tr>
<tr>
<td>9</td>
<td>Bangladesh</td>
<td>911,164</td>
<td>728,084</td>
<td>1,599,668</td>
<td>1,475,558</td>
<td>1,614,223</td>
<td>1,334,102</td>
<td>7,662,791</td>
</tr>
<tr>
<td>10</td>
<td>Hong Kong</td>
<td>803,653</td>
<td>924,856</td>
<td>509,395</td>
<td>343,087</td>
<td>590,355</td>
<td>926,979</td>
<td>4,098,325</td>
</tr>
</tbody>
</table>

Source: Origin of Movement Data from GTIS using U.S. government statistics

Note: Significant South Carolina textile mill product exports to NAFTA, followed by Western Europe, Middle East, and Asia. Also note significant decline of exports to Canada.
## Table 18. South Carolina Export Partners of Textile Mill Products (NAIC: 314)

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>6 Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Georgia</td>
<td>422,267,309</td>
<td>363,980,045</td>
<td>367,851,306</td>
<td>406,727,031</td>
<td>465,621,459</td>
<td>531,302,300</td>
<td>2,557,751,450</td>
</tr>
<tr>
<td>2</td>
<td>Texas</td>
<td>196,416,533</td>
<td>179,407,291</td>
<td>170,897,491</td>
<td>215,198,788</td>
<td>290,280,561</td>
<td>307,760,274</td>
<td>1,359,960,938</td>
</tr>
<tr>
<td>3</td>
<td>Unspecified</td>
<td>137,271,495</td>
<td>164,896,008</td>
<td>192,736,267</td>
<td>218,869,259</td>
<td>256,851,429</td>
<td>292,816,822</td>
<td>1,263,441,280</td>
</tr>
<tr>
<td>4</td>
<td>California</td>
<td>152,873,134</td>
<td>150,434,208</td>
<td>156,712,996</td>
<td>174,504,237</td>
<td>187,801,509</td>
<td>200,782,691</td>
<td>1,170,586,266</td>
</tr>
<tr>
<td>5</td>
<td>North Carolina</td>
<td>152,337,556</td>
<td>146,590,556</td>
<td>129,555,452</td>
<td>174,504,237</td>
<td>187,801,509</td>
<td>200,782,691</td>
<td>1,170,586,266</td>
</tr>
<tr>
<td>7</td>
<td>Michigan</td>
<td>86,876,696</td>
<td>90,925,821</td>
<td>75,919,774</td>
<td>83,107,573</td>
<td>97,768,693</td>
<td>511,273,508</td>
<td>2,902,015,508</td>
</tr>
<tr>
<td>8</td>
<td>Virginia</td>
<td>98,658,869</td>
<td>92,011,468</td>
<td>81,444,453</td>
<td>79,789,877</td>
<td>65,092,599</td>
<td>61,665,223</td>
<td>478,662,489</td>
</tr>
<tr>
<td>9</td>
<td>South Carolina</td>
<td>98,658,869</td>
<td>92,011,468</td>
<td>81,444,453</td>
<td>79,789,877</td>
<td>65,092,599</td>
<td>61,665,223</td>
<td>478,662,489</td>
</tr>
<tr>
<td>10</td>
<td>Pennsylvania</td>
<td>90,429,584</td>
<td>92,732,271</td>
<td>75,046,827</td>
<td>77,456,928</td>
<td>86,878,696</td>
<td>511,273,508</td>
<td>2,902,015,508</td>
</tr>
<tr>
<td>11</td>
<td>Ohio</td>
<td>55,188,426</td>
<td>46,735,237</td>
<td>48,033,129</td>
<td>55,767,057</td>
<td>58,595,730</td>
<td>346,325,459</td>
<td>1,981,581,457</td>
</tr>
<tr>
<td>12</td>
<td>Washington</td>
<td>34,157,027</td>
<td>37,741,406</td>
<td>49,389,658</td>
<td>69,378,620</td>
<td>77,759,106</td>
<td>441,948,149</td>
<td>2,557,751,450</td>
</tr>
<tr>
<td>13</td>
<td>New Jersey</td>
<td>62,381,447</td>
<td>61,452,939</td>
<td>59,312,848</td>
<td>58,595,730</td>
<td>68,815,438</td>
<td>366,325,459</td>
<td>2,557,751,450</td>
</tr>
<tr>
<td>14</td>
<td>Alabama</td>
<td>55,188,426</td>
<td>46,735,237</td>
<td>48,033,129</td>
<td>55,767,057</td>
<td>58,595,730</td>
<td>346,325,459</td>
<td>1,981,581,457</td>
</tr>
<tr>
<td>15</td>
<td>South Carolina</td>
<td>98,658,869</td>
<td>92,011,468</td>
<td>81,444,453</td>
<td>79,789,877</td>
<td>65,092,599</td>
<td>61,665,223</td>
<td>478,662,489</td>
</tr>
</tbody>
</table>

**Source:** Origin of Movement Data from GTIS using U.S. government statistics

**Note:** South Carolina ranks #15 (among U.S. competitors) in exports of textile mill products

## Table 19 South Carolina Exports of Apparel and Accessories (NAIC: 315)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>6 Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dominican Republic</td>
<td>17,036,472</td>
<td>5,400,506</td>
<td>1,637,971</td>
<td>19,806,883</td>
<td>28,958,686</td>
<td>12,995,255</td>
<td>85,835,768</td>
</tr>
<tr>
<td>2</td>
<td>Canada</td>
<td>20,345,307</td>
<td>13,482,425</td>
<td>10,591,917</td>
<td>17,502,025</td>
<td>18,199,115</td>
<td>12,638,894</td>
<td>92,747,712</td>
</tr>
<tr>
<td>3</td>
<td>Costa Rica</td>
<td>1,090,243</td>
<td>4,563,719</td>
<td>5,903</td>
<td>4,307,984</td>
<td>22,174,258</td>
<td>8,859,925</td>
<td>39,922,518</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>795,555</td>
<td>597,063</td>
<td>1,369,673</td>
<td>2,068,305</td>
<td>1,770,957</td>
<td>634,072</td>
<td>10,595,625</td>
</tr>
<tr>
<td>5</td>
<td>Mexico</td>
<td>87,039,235</td>
<td>52,536,906</td>
<td>52,904,910</td>
<td>23,118,982</td>
<td>77,759,106</td>
<td>3,153,644</td>
<td>226,463,203</td>
</tr>
<tr>
<td>6</td>
<td>Japan</td>
<td>45,014,484</td>
<td>8,715,698</td>
<td>5,328,839</td>
<td>5,206,973</td>
<td>2,908,624</td>
<td>51,171,065</td>
<td>114,004,943</td>
</tr>
<tr>
<td>7</td>
<td>Switzerland</td>
<td>2,009,245</td>
<td>2,630,016</td>
<td>4,278,894</td>
<td>3,837,084</td>
<td>3,609,215</td>
<td>2,948,303</td>
<td>18,611,955</td>
</tr>
<tr>
<td>8</td>
<td>Hong Kong</td>
<td>93,081</td>
<td>0</td>
<td>364,821</td>
<td>557,045</td>
<td>740,099</td>
<td>1,248,383</td>
<td>2,875,880</td>
</tr>
<tr>
<td>10</td>
<td>Netherlands</td>
<td>457,380</td>
<td>952,373</td>
<td>810,845</td>
<td>838,777</td>
<td>1,538,614</td>
<td>856,524</td>
<td>5,454,546</td>
</tr>
</tbody>
</table>

**Source:** Origin of Movement Data from GTIS using U.S. government statistics

**Note:** Significant South Carolina textile mill product exports to DR-CAFTA, NAFTA, followed by Western Europe, and Asia. Also note significant overall decline in South Carolina exports.
Table 20. South Carolina Exports of Apparel and Accessories (NAIC: 315)

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>6 Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>California</td>
<td>1,119,928,528</td>
<td>1,115,637,069</td>
<td>1,040,461,196</td>
<td>1,042,853,723</td>
<td>1,234,190,791</td>
<td>1,280,841,366</td>
<td>6,832,912,673</td>
</tr>
<tr>
<td>2</td>
<td>North Carolina</td>
<td>1,241,957,662</td>
<td>1,153,767,968</td>
<td>1,186,918,116</td>
<td>1,085,364,967</td>
<td>889,165,547</td>
<td>757,169,154</td>
<td>6,085,405,512</td>
</tr>
<tr>
<td>3</td>
<td>New York</td>
<td>423,068,865</td>
<td>347,690,872</td>
<td>309,589,925</td>
<td>333,511,558</td>
<td>412,759,583</td>
<td>452,232,944</td>
<td>2,787,853,474</td>
</tr>
<tr>
<td>4</td>
<td>Texas</td>
<td>771,445,104</td>
<td>735,838,709</td>
<td>504,970,040</td>
<td>427,007,097</td>
<td>462,735,352</td>
<td>417,893,694</td>
<td>3,339,889,996</td>
</tr>
<tr>
<td>6</td>
<td>Unspecified</td>
<td>234,253,416</td>
<td>167,366,171</td>
<td>173,950,976</td>
<td>181,656,738</td>
<td>208,631,019</td>
<td>247,743,570</td>
<td>1,213,771,895</td>
</tr>
<tr>
<td>7</td>
<td>Puerto Rico</td>
<td>153,211,332</td>
<td>199,528,187</td>
<td>204,361,123</td>
<td>245,084,081</td>
<td>259,485,378</td>
<td>221,488,287</td>
<td>1,283,178,388</td>
</tr>
<tr>
<td>8</td>
<td>Florida</td>
<td>703,602,088</td>
<td>431,421,281</td>
<td>363,738,815</td>
<td>283,173,003</td>
<td>216,424,023</td>
<td>178,741,367</td>
<td>2,177,100,577</td>
</tr>
<tr>
<td>9</td>
<td>New Jersey</td>
<td>107,918,499</td>
<td>87,994,689</td>
<td>80,746,509</td>
<td>96,241,850</td>
<td>113,420,659</td>
<td>141,989,834</td>
<td>627,012,040</td>
</tr>
<tr>
<td>10</td>
<td>Massachusetts</td>
<td>80,675,075</td>
<td>21,807,801</td>
<td>20,612,549</td>
<td>19,673,175</td>
<td>19,476,988</td>
<td>14,500,284</td>
<td>202,046,909</td>
</tr>
<tr>
<td>11</td>
<td>Pennsylvania</td>
<td>198,100,186</td>
<td>168,023,706</td>
<td>137,403,769</td>
<td>88,592,342</td>
<td>92,329,530</td>
<td>79,808,364</td>
<td>764,337,897</td>
</tr>
<tr>
<td>12</td>
<td>Wisconsin</td>
<td>69,531,960</td>
<td>55,891,899</td>
<td>75,607,606</td>
<td>78,152,481</td>
<td>65,244,798</td>
<td>67,317,558</td>
<td>411,746,302</td>
</tr>
<tr>
<td>13</td>
<td>Ohio</td>
<td>48,894,026</td>
<td>50,719,588</td>
<td>56,624,923</td>
<td>69,503,014</td>
<td>53,744,839</td>
<td>60,486,564</td>
<td>340,074,241</td>
</tr>
<tr>
<td>14</td>
<td>Kentucky</td>
<td>110,279,922</td>
<td>68,097,182</td>
<td>73,659,900</td>
<td>62,442,943</td>
<td>54,089,149</td>
<td>59,767,296</td>
<td>428,852,322</td>
</tr>
<tr>
<td>15</td>
<td>South Carolina</td>
<td>272,761,806</td>
<td>149,518,086</td>
<td>120,968,235</td>
<td>89,753,957</td>
<td>93,439,704</td>
<td>53,897,163</td>
<td>780,338,229</td>
</tr>
</tbody>
</table>

Source: Origin of Movement Data from GTIS using U.S. government statistics

Note: South Carolina ranks #15 (among U.S. states) in exports of apparel and accessories. Note significant decline in South Carolina exports of apparel and accessories.

South Carolina Company Headquarters: South Carolina Textile Complex

Numerous textile complex company headquarters are in South Carolina. The following tables (Tables 21, 22) depict company headquarters (Dun & Bradstreet provided a more comprehensive listing of headquarters; both listings included for information purposes).

Table 21. South Carolina Company Headquarters
Source: Reference USA

<table>
<thead>
<tr>
<th>Asten Johnson*</th>
<th>Bowater</th>
<th>Delta Woodside (a)</th>
<th>Greenwood Mills*</th>
<th>Hampshire Group LTD</th>
<th>Heritage Sportswear</th>
<th>Inman Mills*</th>
<th>JPS Industries*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leigh Fibers*</td>
<td>Milliken &amp; Company*</td>
<td>Monroe Industries*</td>
<td>Reeves Brothers*</td>
<td>Rietter</td>
<td>Sonoco*</td>
<td>Springs Global US Inc.*</td>
<td>Wellman</td>
</tr>
</tbody>
</table>

(a) Filed bankruptcy in 2007, but still listed in Reference USA
* Listed as headquarters in both databases
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Local Business Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGY Holding Corp</td>
<td>Palmetto Garment Co Inc</td>
</tr>
<tr>
<td>Alice Manufacturing Co Inc</td>
<td>Peace Textile America Inc</td>
</tr>
<tr>
<td>Amblor Industries Inc</td>
<td>Quality Stitching Inc</td>
</tr>
<tr>
<td>American Solid Woven Corp</td>
<td>Reeves Brothers Inc</td>
</tr>
<tr>
<td>AstenJohnson Inc</td>
<td>Ross Textiles Inc</td>
</tr>
<tr>
<td>Basic Concepts Inc</td>
<td>Sandhill Quilting Co Inc</td>
</tr>
<tr>
<td>Basket Place Inc</td>
<td>Sandpiper Knitting Inc</td>
</tr>
<tr>
<td>BBA Nonwovens Simpsonville Inc</td>
<td>Santee Print Works</td>
</tr>
<tr>
<td>Belton Industries Inc</td>
<td>Southern Felt Co Inc</td>
</tr>
<tr>
<td>Blumenthal Mills Inc</td>
<td>Southern Weaving Co</td>
</tr>
<tr>
<td>Browning TS Inc</td>
<td>Springs Global Us Inc</td>
</tr>
<tr>
<td>Carolina Yarn &amp; Fabrics Inc</td>
<td>Tex-Fil Inc</td>
</tr>
<tr>
<td>CDS Ensembles Inc</td>
<td>Twilight Inc</td>
</tr>
<tr>
<td>Central Textiles Inc</td>
<td>Weavetec Inc</td>
</tr>
<tr>
<td>CHA Technologies Inc</td>
<td>Wellstone Mills LLC</td>
</tr>
<tr>
<td>Chesterfield Yarn Mills Inc</td>
<td>Whitesides Inc</td>
</tr>
<tr>
<td>Craig Industries Inc</td>
<td>3G Mermet Corp</td>
</tr>
<tr>
<td>Felters Co</td>
<td>Art &amp; Frame Gallery Inc</td>
</tr>
<tr>
<td>Fendrich Industries Inc</td>
<td>Asian Textile Resources Inc</td>
</tr>
<tr>
<td>Gerber Childrenswear Inc</td>
<td>Bargain City Clothing Corp</td>
</tr>
<tr>
<td>Greenwood Holding Corp</td>
<td>Bob Leboeuf</td>
</tr>
<tr>
<td>Hamrick Mills Inc</td>
<td>Builders Wholesale Carpet Inc</td>
</tr>
<tr>
<td>Hexcel Reinforcements Corp</td>
<td>Delta Mills Inc</td>
</tr>
<tr>
<td>Inman Mills</td>
<td>Deslee Textiles USA Inc</td>
</tr>
<tr>
<td>JPS Industries Inc</td>
<td>Groz-Beckert USA Inc</td>
</tr>
<tr>
<td>Knight Textile Corp</td>
<td>Hampshire Group, Limited</td>
</tr>
<tr>
<td>Leigh Fibers Inc</td>
<td>Kraus Orders Inc</td>
</tr>
<tr>
<td>Liberty Uniform Manufacturing</td>
<td>LA Marsha Co Inc</td>
</tr>
<tr>
<td>Martin Color-Fil Inc</td>
<td>Le Creuset of America Inc</td>
</tr>
<tr>
<td>Monroe Industries Inc</td>
<td>Myrtle Wear Inc</td>
</tr>
<tr>
<td>Monster T-Shirts LLC</td>
<td>Ninety Six Manufacturing Co</td>
</tr>
<tr>
<td>Pageland Screen Printers Inc</td>
<td>Promotional Fashions Corp</td>
</tr>
<tr>
<td>Milliken &amp; Company</td>
<td>Ruff Hardware Co</td>
</tr>
<tr>
<td>Scene Weaver LLC</td>
<td>Shore Décor Inc</td>
</tr>
<tr>
<td>Shore Décor Inc</td>
<td>Southern Imaging</td>
</tr>
<tr>
<td>Strand Import and Dist.</td>
<td>William M. Bird &amp; Co.</td>
</tr>
<tr>
<td>William Prym Inc</td>
<td>Zambaiti USA Inc</td>
</tr>
<tr>
<td>Zambaiti USA Inc</td>
<td>Advance Textile Products</td>
</tr>
<tr>
<td>Bekaert Carding</td>
<td>Elliott Metal Works</td>
</tr>
<tr>
<td>Hollingsworth, Johnson</td>
<td>Kusters Corp</td>
</tr>
<tr>
<td>Marshall &amp; William</td>
<td>Menzel Inc</td>
</tr>
<tr>
<td>Menzel Inc</td>
<td>Morrison Textile Machinery</td>
</tr>
<tr>
<td>Morrison Textile Machinery</td>
<td>Palmetto Loom Reed</td>
</tr>
<tr>
<td>Steel Heddle Inc</td>
<td>Staubli Corp</td>
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<td>Staubli Corp</td>
<td>Hurley &amp; Harrison</td>
</tr>
<tr>
<td>Lockwood Greene</td>
<td>Sonoco</td>
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<td>Sonoco</td>
<td>Sunbelt</td>
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<tr>
<td>Best Machinery Mov.</td>
<td>Amertric Corp</td>
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<td>Amertric Corp</td>
<td>CeramiTec North An.</td>
</tr>
<tr>
<td>Clarkson Industrial</td>
<td>IDEA</td>
</tr>
<tr>
<td>IDEA</td>
<td>Intertech</td>
</tr>
<tr>
<td>Intertech</td>
<td>M Dohmen USA</td>
</tr>
<tr>
<td>M Dohmen USA</td>
<td>OEC Fluid Handling</td>
</tr>
<tr>
<td>OEC Fluid Handling</td>
<td>Rayon Yarn Corp</td>
</tr>
<tr>
<td>Rayon Yarn Corp</td>
<td>In Chem</td>
</tr>
</tbody>
</table>
Descriptive Statistics: By Textile Complex Sector (Map Clusters)
The following provides a description of the textile complex sectors in South Carolina. Descriptive information includes a sample of companies.

Textile Value Chain Segments: Textile Inputs

### Machinery
- **NAIC:** 333292
- **Locations:** 149 (16.34%)
- **Employees:** 4,339 (6.7%)
- **Sales:** $456,734,491* (2.09%)
- **Export/Import/Both:** 10/10/21
- **Companies:** Rieter, Zima, Global Textiles, Southern Loom, John D Hollingsworth

*~80% have sales data

### Chemicals
- **NAIC:** varied
- **Locations:** 20 (2.19%)
- **Employees:** 1,698 (2.62%)
- **Sales:** $6,504,644,736 (29.77%)
- **Export/Import/Both:** 1/3/0
- **Companies:** Intertech, Sunbelt, EMS-Chemie, Bowater, Pack Tell, Lockwood Greene
Packaging

- **NAIC**: varied
- **Locations**: 5 (.55%)
- **Employees**: 2,652 (4.1%)
- **Sales**: $3,666,939,000 (16.78%)
- **Export**: 1
- **Companies**: Sonoco, Mariplast, Paragon Plastics, Diversified Plastics, Dabney Enterprises

Fiber

- **NAIC**: 325222 & varied
- **Locations**: 12 (1.32%)
- **Employees**: 3,536 (5.46%)
- **Sales**: $683,494,575 (3.13%)
- **Export/Import/Both**: 3/2/0
- **Companies**: Invista, Solutia, Nan Ya, DAK, Wellman, Solutia
Textile Value Chain Segments: Textile Manufacturing

Yarn & Thread

- **NAIC:** 3131
- **Locations:** 29 (3.18%)
  - 3 are thread locations
- **Employees:** 5,727 (8.84%)
- **Sales:** $539,059,818 (2.47%)
- **Export/Import/Both:** 2/1/6
- **Companies:** Parkdale, Ameritex, Unifi, Wellstone, YLI Corp

Fabric

- **NAIC:** 3132
- **Locations:** 140 (15.35%)
- **Employees:** 16,852 (26.02%)
- **Sales:** $3,155,903,987
- **Export/Import/Both:** 16/9/24
Broadwoven Fabric

- **NAIC:** 313210
- **Locations:** 96 (10.53%)
- **Employees:** 13,050 (20.15%)
- **Sales:** $2,681,004,270 (12.27%)
- **Export/Import/Both:** 12/6/14
- **Companies:** Milliken, Inman Mills, Glen Raven, West Point Stevens, Hexcel

Narrow Fabric

- **NAIC:** 313221
- **Locations:** 14 (1.54%)
- **Employees:** 640 (.99%)
- **Sales:** $94,938,600 (.43%)
- **Export/Import/Both:** 4/2/3
- **Companies:** Paxar, Opperman Webbing
Nonwoven Fabric

- **NAIC:** 313230
- **Locations:** 18 (1.97%)
- **Employees:** 2,393 (3.7%)
- **Sales:** $299,106,768 (1.37%)
- **Export/Import/Both:** 0/1/4
- **Companies:** BBA Fiberweb, Linq, Batson, Felters

*28 companies have 313230 as a NAIC code

Knitted Fabric

- **NAIC:** 31324
- **Locations:** 12 (1.32%)
- **Employees:** 769 (1.19%)
- **Sales:** $80,854,349 (.37%)
- **Export/Import/Both:** 0/0/3
- **Companies:** Milliken, CHF Industries, Kenda Knits
Finishing

- NAIC: 3133
- Locations: 125 (13.71%)
- Employees: 10,432 (16.11%)
- Sales: $1,188,522,862 (5.44%)
- Export/Import/Both: 11/6/8

Broadwoven Finishing

- NAIC: 313311
- Locations: 44 (4.82%)
- Employees: 4,566 (7.05%)
- Sales: $712,283,554 (3.26%)
- Export/Import/Both: 6/0/2
- Companies: Bondtex, Santee, Asten Johnson, Central Textiles
Other Finishing

- **NAIC:** 313312
- **Locations:** 75 (8.22%)
- **Employees:** 5,628 (8.69%)
- **Sales:** $421,475,943 (1.93%)
- **Export/Import/Both:** 4/5/5
- **Companies:** Swift Galey, Milliken, National Textiles

Fabric Coating Mills

- **NAIC:** 313320
- **Locations:** 6 (.66%)
- **Employees:** 238 (.37%)
- **Sales:** $54,763,365 (.25%)
- **Export/Import/Both:** 1/1/1
- **Companies:** Omnova, Sealoflex
Textile Value Chain Segments: Textile Products

Textile Product Mills

- **NAIC:** 314
- **Locations:** 185 (20.29%)
- **Employees:** 5,931 (9.16%)
- **Sales:** $631,661,271 (2.89%)
- **Export/Import/Both:** 16/3/11

Home & Interiors:
Carpets & Rugs, Curtains, Other Household Products

- **NAIC:** 3141
- **Locations:** 39 (4.28%)
- **Employees:** 1,980 (3.14%)
- **Sales:** $268,808,435 (1.23%)
- **Export/Import/Both:** 3/1/4
- **Companies:** Riegel, Orian, Collins & Aikman, Milliken
Textile Product Mills:
Bags, Canvas Related Products, Rope, Cordage, & Tire Cord

- **NAIC:** 3149*
- **Locations:** 49 (5.37%)
- **Employees:** 1,613 (2.49%)
- **Sales:** 185,508,682 (.85%)
- **Export/Import/Both:** 6/1/2
- **Companies:** Menardi, Shakespeare Co, Dayco, Sodetal, Richloom

*Does not include 314999

Miscellaneous Textile Products

- **NAIC:** 314999
- **Locations:** 97 (10.64%)
- **Employees:** 2,338 (3.61%)
- **Sales:** $177,344,154 (.8%)
- **Export/Import/Both:** 7/1/5
- **Companies:** American Solid Woven, Belton, Leigh Fibers
Apparel & Accessories

- **NAIC:** 315
- **Locations:** 95  
  (10.42%)
- **Employees:** 9,207  
  (14.22%)
- **Sales:** $3,526,425,394  
  (16.14%)
- **Export/Import/Both:**  
  8/5/6

Hosiery & Knits

- **NAIC:** 3151
- **Locations:** 14  
  (1.54%)
- **Employees:** 844  
  (1.3%)
- **Sales:** $55,385,187  
  (.25%)
- **Export/Import/Both:**  
  0/1/1
- **Companies:** US Textile Corp, Rice Mills, Hanesbrands
Cut & Sew

- **NAIC:** 3152
- **Locations:** 41 (4.5%)
- **Employees:** 1,499 (2.31%)
- **Sales:** $80,139,490 (.37%)
- **Export/Import/Both:** 0/1/1
- **Companies:** Perry Ellis, Gerber Childrenswear, Jostens Caps & Gowns

Accessories

- **NAIC:** 3159
- **Locations:** 40 (4.39%)
- **Employees:** 6,864 (10.6%)
- **Sales:** $3,237,212,005 (14.82%)
- **Export/Import/Both:** 3/3/2
- **Companies:** Springs Global, Milliken, Color Fi, Mar Mac
Wholesale

- **NAIC:** 423220 & 4243
- **Locations:** 133 (14.58%)
- **Employees:** 4,125 (6.37%)
- **Sales:** $1,464,981,471 (6.71%)
- **Export/Import/Both:** 0/3/7

Yarn & Fabric Wholesale

- **NAIC:** 424310
- **Locations:** 39 (4.28%)
- **Employees:** 1,083 (1.67%)
- **Sales:** $317,598,390 (1.45%)
- **Export/Import/Both:** 0/0/3
- **Companies:** Asten Inc, Prym-Dritz Corp
Apparel Wholesale

- **NAIC:** 42432 & 42433
- **Firms:** 37 (4.06%)
- **Employees:** 2,023 (3.12%)
- **Sales:** $758,550,738 (3.47%)
- **Export/Import/Both:** 0/2/2
- **Companies:** Jones Apparel Group, Bay Island Sportswear, Kendall Healthcare/Tyco

Home Furnishings Wholesale

- **NAIC:** 423220
- **Locations:** 57 (6.25%)
- **Employees:** 1,019 (1.57%)
- **Sales:** $388,832,343 (1.78%)
- **Export/Import/Both:** 0/1/2
- **Companies (sample):** Harvard Textiles/Madison Industries, LeCreuset, Professional Towel Mills
Logistics

- **NAIC:** varied
- **Locations:** 4
- **Employees:** 162
- **Sales:** $20,600,000
- **Import:** 1
- **Companies:** Clarkson, Best Machinery Movers, IDEA, Sourcing Services

Textile Value Chain Segments: After-Sale

Recycling

- **NAIC:** varied
- **Locations:** 3
- **Employees:** 9
- **Sales:** $1,900,000
- **Companies:** John J Ryan, Massey Yarn, Plastex
Organizations, Associations & Training

- **NAIC:** varied
- **Locations:** 12 (1.32%)
- **Employees:** 89 (.14%)
- **Sales:** $6,251,505
- **SEAMS, SCMA, Phillips Resource Group, Clemson**
Foreign Direct Investment in South Carolina

The following listing (Table 23) of foreign direct investment in the South Carolina textile complex represents a diverse listing of countries and significant investment in machinery and chemicals.

Table 23. Foreign Direct Investment in South Carolina

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Value Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Starlinger-SAHM</td>
<td>Austria</td>
<td>Machinery</td>
</tr>
<tr>
<td>Zimmer Machinery Corporation</td>
<td>Austria</td>
<td>Machinery</td>
</tr>
<tr>
<td>Orian Rugs</td>
<td>Belgium</td>
<td>Home: Rugs</td>
</tr>
<tr>
<td>Pierret NA Division</td>
<td>Belgium</td>
<td>Machinery</td>
</tr>
<tr>
<td>Santan of American</td>
<td>Belgium</td>
<td>Home: Towels</td>
</tr>
<tr>
<td>In Chem</td>
<td>Bermuda</td>
<td>Chemicals</td>
</tr>
<tr>
<td>Schlumberger</td>
<td>France</td>
<td>Machinery</td>
</tr>
<tr>
<td>Rhodia</td>
<td>France</td>
<td>Chemicals</td>
</tr>
<tr>
<td>AGY</td>
<td>France</td>
<td>Glass Fiber</td>
</tr>
<tr>
<td>Chargeurs Wool</td>
<td>France</td>
<td>Wool Fiber</td>
</tr>
<tr>
<td>BGF Industries</td>
<td>France</td>
<td>Woven, Carbon based Fibers</td>
</tr>
<tr>
<td>Mermet of 3G</td>
<td>France</td>
<td>Fabric -solar Protection Fabrics</td>
</tr>
<tr>
<td>Michelin</td>
<td>France</td>
<td>Textile Products: Tire</td>
</tr>
<tr>
<td>Hartmann-Conco</td>
<td>Germany</td>
<td>Textile based Medical Supplies</td>
</tr>
<tr>
<td>Thies</td>
<td>Germany</td>
<td>Machinery</td>
</tr>
<tr>
<td>American Liba</td>
<td>Germany</td>
<td>Machinery</td>
</tr>
<tr>
<td>Mahlo</td>
<td>Germany</td>
<td>Machinery</td>
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<tr>
<td>LTG</td>
<td>Germany</td>
<td>Machinery</td>
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<tr>
<td>Henkel</td>
<td>Germany</td>
<td>Chemicals</td>
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<tr>
<td>Dorflastan</td>
<td>Germany</td>
<td>Chemicals</td>
</tr>
<tr>
<td>BASF</td>
<td>Germany</td>
<td>Chemicals</td>
</tr>
<tr>
<td>Menzel</td>
<td>Germany</td>
<td>Machinery</td>
</tr>
<tr>
<td>ADO Corporation</td>
<td>Germany</td>
<td>Home: Curtains</td>
</tr>
<tr>
<td>Bayer Corporation</td>
<td>Germany</td>
<td>Chemicals: Dyes</td>
</tr>
<tr>
<td>Erhardt &amp; Leimer Inc.</td>
<td>Germany</td>
<td>Machinery</td>
</tr>
<tr>
<td>EVAC: Kusters Zima</td>
<td>Germany</td>
<td>Machinery</td>
</tr>
<tr>
<td>CeramTec</td>
<td>Germany</td>
<td>Machinery, Piece Goods Wholesale: Sewing</td>
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<tr>
<td>Groz-Beckert</td>
<td>Germany</td>
<td>Needles</td>
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<tr>
<td>Ibena</td>
<td>Germany</td>
<td>Home Textile Wholesale</td>
</tr>
<tr>
<td>Mayer</td>
<td>Germany</td>
<td>Machinery: Circular Knitting</td>
</tr>
<tr>
<td>Steeger</td>
<td>Germany</td>
<td>Machinery: Braiding; Sewing, Folding</td>
</tr>
<tr>
<td>Texpa: Southern Textile Works</td>
<td>Germany</td>
<td>Packaging</td>
</tr>
<tr>
<td>Sunbelt</td>
<td>India</td>
<td>Chemicals: Dyes</td>
</tr>
<tr>
<td>Mariplast</td>
<td>Italy</td>
<td>Packaging: Plastic Yarn Carriers</td>
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<td>Marzoli</td>
<td>Italy</td>
<td>Machinery</td>
</tr>
<tr>
<td>Idea</td>
<td>Italy</td>
<td>Machinery: Weaving Parts</td>
</tr>
<tr>
<td>Radici USA</td>
<td>Italy</td>
<td>Home Wholesale: Rugs</td>
</tr>
<tr>
<td>Dupont Teijin Films</td>
<td>Japan</td>
<td>Chemicals: Broadwoven Fabric – Industrial</td>
</tr>
<tr>
<td>Takata: Highland Industries</td>
<td>Japan</td>
<td>Synthetic Material</td>
</tr>
<tr>
<td>Hyosung</td>
<td>Korea</td>
<td>Chemicals</td>
</tr>
<tr>
<td>Peace Textile America</td>
<td>Korea</td>
<td>Knitted Fabric</td>
</tr>
<tr>
<td>DAK</td>
<td>Mexico</td>
<td>Fibers</td>
</tr>
<tr>
<td>AKAB</td>
<td>Sweden</td>
<td>Machinery: Textile Products: Rope, Textile</td>
</tr>
<tr>
<td>Nibril</td>
<td>Sweden</td>
<td>Components for Window Blinds</td>
</tr>
<tr>
<td>Staubli</td>
<td>Switzerland</td>
<td>Machinery</td>
</tr>
</tbody>
</table>
Table 23 (continued). Foreign Direct Investment in South Carolina

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Value Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSM Sharer Schweiter Mettler</td>
<td>Switzerland</td>
<td>Machinery</td>
</tr>
<tr>
<td>American Santex &amp; R Horton (part of Santex Group)</td>
<td>Switzerland</td>
<td>Machinery</td>
</tr>
<tr>
<td>Rieter</td>
<td>Switzerland</td>
<td>Machinery</td>
</tr>
<tr>
<td>EMS-Chemie</td>
<td>Switzerland</td>
<td>Chemicals: Nylon Resins</td>
</tr>
<tr>
<td>Graf Metallic of America</td>
<td>Switzerland</td>
<td>Machinery</td>
</tr>
<tr>
<td>Nanya</td>
<td>Taiwan</td>
<td>Fibers</td>
</tr>
<tr>
<td>Southern Felt</td>
<td>UK</td>
<td>Fabric: Nonwovens</td>
</tr>
<tr>
<td>Bondex</td>
<td>UK</td>
<td>Fabric: Wool Broadwoven</td>
</tr>
<tr>
<td>BBA Fiberweb</td>
<td>UK</td>
<td>Fabric: Nonwovens</td>
</tr>
<tr>
<td>Bekaert Carding Solutions</td>
<td>UK</td>
<td>Machinery: Card Wire</td>
</tr>
</tbody>
</table>

In addition, South Carolina textile complex companies play an important role in the American Fiber Manufacturers Association (AFMA) membership (see Table 24).

Table 24. AFMA Membership: Role of South Carolina Textile Complex

| AFMA Membership |
|-----------------|----------------|
| • AFMA member companies produce more than 90% of the total U.S. output of these fibers. |
| • 9/27 are from SC, and 7 are from NC making 16/27 from the Carolinas |

1)AGY  
2)Color Fi  
3)Leigh Fibers  
4)Nan ya  
5)William Barnet  
6)Wellman  
7)Teijin/Dupont  
8)Plastex  
9)Palmetto Synthetics
5. II. Clusters: Geographic and Industry

What is a cluster?
Clusters are:
- Geographic concentrations of interconnected companies
- Tools for improving economic conditions
  - Market driven
  - Inclusive
  - Strategic
  - Knowledge-based
  - Value creating
- Potentials for increasing productivity, for global competitiveness
- Opportunities for South Carolina Council on Competitiveness personnel to work with collaborative group of businesses
  - Forum for businesses – issues/concerns/education and training

Why cluster?
Clusters can provide:
1) Increase productivity of companies in the region (state)
2) Drive the direction and pace of innovation
3) Stimulate formation of new businesses within the cluster.

Geographic Cluster Criteria
Formation of the South Carolina Textile Complex geographic cluster included the following criteria:
County must meet two of the following three:
- Locations: 13+ company locations
- Employees: 1,000+
- Sales: $100,000,000+

Geographic Clusters
There are two geographic textile complex clusters in South Carolina representing approximately 71% of all South Carolina company locations (represented in the database). Note: The Upstate Cluster is the State’s largest textile complex cluster. These two geographic clusters have:
- a) historical basis, with the development of key areas within the state due to resources (natural, textile-related, human), and
- b) distribution basis (location near the main transportation arteries in the State --- I85, 95, 77, 26, 20; with access to ports and rail systems).
Geographic Clusters

- **Locations:** 643 (70.5%)
- **Employees:** 42,894 (66.24%)
- **Sales:** $12,744,209,311 (58.33%)
- **Counties:** 15 of 46

Upstate Cluster

- **Counties:** Anderson, Cherokee, Chester, Chesterfield, Greenville, Greenwood, Lancaster, Laurens, Pickens, Spartanburg, Union, York
- **Locations:** 575 (63.05%)
- **Employees:** 27,282 (57.79%)
- **Sales:** $11,763,274,995 (53.84%)
- **Companies:** Inman Mills, Invista, Milliken, Springs, Tietex
Midstate Cluster

- **Counties**: Florence, Richland & Sumter
- **Locations**: 68 (7.46%)
- **Employees**: 5,469 (9.99%)
- **Sales**: $980,934,316 (4.49%)
- **Companies**: Shaw Industries, Nan Ya, Wellman
Industry Clusters

There are three textile complex industry clusters in South Carolina. While the advanced manufacturing cluster exists, two new/emerging clusters exist to provide global competitiveness opportunities for South Carolina companies.

- Advanced Manufacturing Cluster
- New/Emerging Clusters in the South Carolina Textile Complex
  - Textile & Apparel Creative Innovation Cluster
  - Textile & Apparel Wholesale Cluster
Advanced Manufacturing Cluster

- **Locations:** 294 (32.24%)
- **Employment:** 33,011 (50.98%)
- **Sales:** $4,883,486,667 (22.35%)
- **Export/Import/Both:** 29/16/38
- **Companies:** Inman, Avondale, Milliken, Hanesbrands, BBA Fiberweb

**Advanced Manufacturing Cluster**

**Core Competency:** Manufacturing Intensive, Product Efficiency, Product Innovation with Differentiation

- Raw Materials
- Human Resources
- Suppliers & Manufacturers
- Auxiliary firms (dyestuffs, packaging, logistics/distribution)
- Dyeing & Finishing
- Transportation
- Training & Education

Productivity Measure: Production efficiencies, Production innovation with differentiation

**Note:** While traditional South Carolina Manufacturing Cluster has lost the competitive advantage due to global competition, advanced manufacturing (products, labor, innovation, service) provides differentiated products and services.
Textile and Apparel Creative Innovation Cluster

(Inputs: Chemicals, Fiber, Machinery, Packaging)

- **Locations:** 186 (20.39%)
- **Employees:** 12,223 (18.87%)
- **Sales:** $11,311,812,802 (51.78%)
- **Export/Import/Both:** 15/15/22
- **Companies:** Sonoco, Dak, Nan Ya, Staubli, Bowater, Para-Chem

**Core Competency:** Creative Innovations from textile inputs (chemicals, fiber, machinery, packaging) to assist with advanced manufacturing

Productivity Measure: Innovation in New Products and Services
Goal: Market Leadership in Innovation

**Potential to Connect Creative Innovation with Advanced Manufacturing!!**
Textile and Apparel Wholesale Cluster

Textile and Apparel Wholesale Cluster

- **NAIC**: 423220 & 4243
- **Locations**: 133 (14.58%)
- **Employees**: 4,125 (6.54%)
- **Sales**: $1,464,981,471 (6.71%)
- **Export/Import/Both**: 0/3/7
- **Companies**: Tyco Healthcare, Renfro, Asten Inc, Bay Island Sportswear

**Core Competency**: Knowledge Intensive, Supply Chain Expertise

Data Networks: Logistics & Packaging, Global Trade/Import & Exports, Design/Development Trends & Centers, Product Focus/Manufacturing Expertise, Transportation, IT Support

Human Resources: Testing/Specifications, Finance/tax/legal, Marketing & Merchandising, Education

Productivity Measures:
* “Seamless” sourcing procurement of goods (components and “full package” and services)
* Interconnected networks (products, production, markets/consumption, innovation, services)

Goal: Market leadership in procurement of competitive textile products to meet market needs
Preliminary Results: South Carolina Industry Clusters

Preliminary results of the South Carolina industry clusters have indicated:

1. Clusters, especially a focus on new/emerging clusters, can increase productivity, innovation, and stimulate new business opportunities for South Carolina. Historically, South Carolina’s focus has been with manufacturing, thus the somewhat well-developed Advanced Manufacturing Cluster. However, new/emerging clusters have/are being formed that focus on pre-production and post-production processes. Two (2) new/emerging clusters are Textile and Apparel Creative Innovation Cluster and Textile and Apparel Wholesale Cluster.

2. Core competencies consistent across all clusters are knowledge and innovation. Diverse core competencies exist with each cluster, plus similar and different business infrastructures are required for each.

3. Clusters may not have geographic limitations. Due to electronic communications and global logistics/supply chains, “virtual vertical” operations may exist. In addition, other industry models suggest that manufacturing can be separated from the creative function (e.g., automotive industry – manufacturing in Michigan and southern states, with creativity/innovation in California).

4. The cluster diagrams provide a structure for the three segmentation groups: “Flourishing”, “Coping”, “Potentially Vulnerable.” Preliminary analyses of the clusters using the study’s database indicates:
   - “Flourishing” companies participate in new/emerging clusters, rather than just the Advanced Manufacturing Cluster
   - “Coping” companies, while clustered more heavily in traditional manufacturing, have become involved in the Wholesale Cluster
   - “Potentially Vulnerable” companies appear to remain in manufacturing, and/or are not tied with a cluster.
   - Further analyses of South Carolina industry clusters may provide a more thorough examination of the South Carolina textile complex, as well as in depth analyses of company segmentation (“Flourishing”, “Coping”, “Potentially Vulnerable”).

5. The new/emerging clusters provide opportunities for creative programs to be shared with the South Carolina textile complex. These programs include: import-ready, supply chain management, global business strategy, design/development/creative innovative, as well as marketing programs (including trade show development). These programs can be provided by the South Carolina Council on Competitiveness, as well as collaboration with universities, community colleges, and industry associations.
5. III. Segmentation of South Carolina Companies

Segmentation Definitions:

“Flourishing” companies are leaders in the marketplace, with implementing three (3) or more of the segmentation criteria listed in Table 25. These companies have physical presence in a South Carolina cluster, and are “linked” with other organizations via business relationships, web presence, association membership, and/or company organization (e.g., headquarters). These companies should be targeted by South Carolina for growth and expansion.

“Coping” companies have implemented two (2) of the segmentation criteria (Table 25) and are searching for opportunities and are pursuing “linked connections” in order to be successful. These companies can benefit from global textile industry market and product knowledge and training.

“Potentially Vulnerable” companies have implemented only one (1) or no criteria as part of their business model. In general, these companies are not “linked” in the supply chain and/or with sources for information (research, development, market information). This segment can benefit from Workforce Development and Community College training.

Criteria for Segmentation:

Table 25 presents the segmentation criteria used for the South Carolina Textile Complex companies.

Table 25
Criteria for Segmentation

<table>
<thead>
<tr>
<th>Criteria for Segmentation&lt;sup&gt;a)&lt;/sup&gt;</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Must have 25 (or greater) employees&lt;sup&gt;b)&lt;/sup&gt;</td>
<td>124</td>
</tr>
<tr>
<td>2) Import and/or Export</td>
<td>131</td>
</tr>
<tr>
<td>3) Trade Association Participation</td>
<td></td>
</tr>
<tr>
<td>4) Website</td>
<td></td>
</tr>
<tr>
<td>5) Presence in a Geographic Cluster</td>
<td></td>
</tr>
<tr>
<td>6) Headquarters in South Carolina</td>
<td></td>
</tr>
</tbody>
</table>

Note: 37% = “Flourishing” (n = 124)

39% = “Coping” (n = 131)

24% = “Potentially Vulnerable” (n = 82)

<sup>a)</sup> Preliminary segmentation criteria. More in depth analysis should be undertaken to refine segmentation listings.

<sup>b)</sup> Total of 337 companies used in this analysis. Companies with less than 25 employees were heterogeneous in nature, with different business models.

Note: With 93.1% of South Carolina companies privately held, company sales data is an approximate number. Individual companies can add current sales, past sales history, plus anticipated sales as an additional segmentation criterion.
5. IV South Carolina Textile Complex – Fishbone

Figure 10 provides the Global Textile Competitiveness Framework (Fishbone Diagram) followed by company self-assessment steps, and a South Carolina company (“Flourishing”; Figure 11) depicted.

Figure 10
Global Textile Competitiveness Framework

Company Self-Assessment

Using the Global Textile Competitiveness Framework (fishbone diagram, p. 34-35) combined with the segmentation criteria (p. 72), South Carolina companies can use the fishbone diagram as a company self-assessment tool to ascertain the company’s global competitiveness. The following steps for company self-assessment include:

1) Identification of company’s implementation of strategies (numerator). How many strategies are components of the company’s current business model?
2) What business strategy(ies) is part of the company’s mission? Only operations to the left (e.g., manufacturing capabilities only?) or diverse strategies (left to right?)?
3) Identification of company’s implementation of tactics (denominator; how many, and how extensive are tactics implemented and level of sophistication? Transparency of systems?).
4) Are strategies and tactics “linked” (e.g., is the global perspective of business “matched” with business models – joint ventures, alliances, seamless global supply chain, partnerships, other)?
5) Specifically, how many segmentation criteria are implemented (Table 25)?
6) Combining current, past sales history, and realistic future sales potential with segmentation criteria (Table 25), how would the company categorize their business (“Flourishing”, “Coping, “Potentially Vulnerable”)?
7) How does the company continue to improve global competitiveness (either move to next segmentation category, such as “Coping” to “Flourishing”, and/or advance within the segmentation-- “Flourishing” becoming more global competitive)?
8) What “next steps” should the company undertake to become more globally competitive, and what is the timeline for implementation of “next steps”?
Figure 11. Milliken (“Flourishing”)

Strategies


Product type & Product Mix  Business Strategies  Market  Seamless Global Supply Chain

Production Efficiencies  Marketing Program Tactics for Global Textile Competitors  Logistics  Sourcing  Type of Business

Tactics

Note: Highlighted Business Activities: Strategies and Tactics
Preliminary Results: Segmentation of South Carolina Textile Complex

Preliminary results using the *Global Textile Competitiveness Framework* have indicated that the three segmentation groups (“Flourishing,” “Coping,” “Potentially Vulnerable”) have strategic positioning in the global textile complex. While *further analyses are needed*, it appears that:

1. “Flourishing” companies are implementing three (3) or more of the segmentation criteria (Table 25). These companies have a physical presence in a South Carolina cluster, and are “linked” with other organizations via business relationships, web presence, association membership, and/or company organization (headquarters in South Carolina). Flourishing companies are more likely to be involved in advanced activities, including innovations in technology, products, markets, and are marketing diverse products.

2. “Coping” companies have implemented two (2) of the segmentation criteria (Table 25) and are searching for opportunities and pursuing “linked connections” in the State --- both with customers and suppliers as well as with clusters. These companies, historically rooted in traditional textile and apparel manufacturing, have limited global “knowledge” but may be interested in pursuing a global presence.

3. “Potentially Vulnerable” companies have implemented only one (1) or no segmentation criteria as part of their business model. In general these companies are focusing efforts on tactical approaches to competition as represented on the left side of the fishbone diagram (e.g., traditional textile and apparel manufacturing efficiencies; basic/commodity product focus; limited product and market knowledge with limited product line(s)).
5. V. Supply Chain “Nodes”: How South Carolina Textile Complex is “Linked”

While future research can provide detailed information regarding how the South Carolina Textile Complex is “linked”, the following (Figure 13) indicates the importance of supply chain linkages within the textile complex.

**Figure 12. Supply Chain Linkages in South Carolina**

Preliminary analyses using the *South Carolina Textile Complex Database* indicate that the textile complex is currently organized in an Advanced Manufacturing Cluster with new/emerging clusters in Textile and Apparel Creative Innovation Cluster and Textile and Apparel Wholesale Cluster. Further analyses *may indicate* the need for South Carolina companies to become aligned/realigned with suppliers and customers. In addition, node configuration *may differ* by the three segmentation groups. For example,

- “Flourishing” companies may reflect more advanced virtually integrated participation, with diverse clusters (including virtual vertical);
- “Coping” companies may be linked within the Advanced Manufacturing Cluster, but also may be linked with other clusters/nodes such as the Textile and Apparel Wholesale Cluster (in order to “survive and thrive”); and
- “Potentially Vulnerable” companies may be either linked with the Advanced Manufacturing Cluster or not linked with a cluster.
5. VI. Assistance for South Carolina Textile Complex (by Company Segmentation)

Table 26. South Carolina Council on Competitiveness
Assistance to the South Carolina Textile Complex

<table>
<thead>
<tr>
<th>Category</th>
<th>Assistance</th>
</tr>
</thead>
</table>
| Flourishing | Target for growth, expansion and training  
Identify new export markets  
Database can be used to identify new companies to participate in trade events |
| Coping      | Provide regional expertise to develop an effective economic development plan for the future  
Can provide personal attention to prepare companies to move into the Flourishing category  
Will benefit from employee training grants and community college assistance  
Companies will benefit from global involvement and should be targeted for Export Ready Programs and Trade organization participation |
<p>| Potentially | Companies at greatest risk against foreign competition.                                                                                     |
| Vulnerable  | Will benefit from education, training, grants, and increased industry knowledge and involvement                                           |</p>
<table>
<thead>
<tr>
<th>Resources</th>
<th>Strategies</th>
<th>Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>Better Products/</td>
<td>R &amp; D</td>
</tr>
<tr>
<td></td>
<td>New Products</td>
<td>Niche Market</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New Product Development Process</td>
</tr>
<tr>
<td>Associations</td>
<td>Better Process/</td>
<td>Efficiency</td>
</tr>
<tr>
<td>Universities</td>
<td>New Process</td>
<td>Productivity</td>
</tr>
<tr>
<td>Associations</td>
<td>New Markets</td>
<td>Global Business Strategy</td>
</tr>
<tr>
<td>Universities</td>
<td></td>
<td>Business/Marketing Plan</td>
</tr>
<tr>
<td>Cluster Programs</td>
<td></td>
<td>Market profiles: Military Performance, Automotive Industrial/Technical</td>
</tr>
<tr>
<td>Associations</td>
<td>New Business Functions</td>
<td>Marketing, Design</td>
</tr>
<tr>
<td>Universities</td>
<td></td>
<td>Development, Logistics,</td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td>Sourcing, Trade Show</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development</td>
</tr>
</tbody>
</table>

Table 27. Future Education and Resource Programs
South Carolina Textile Complex
6. Conclusions and Next Steps

With the anticipated growth of global production and consumption of textile-related products and services, there are opportunities and challenges for the South Carolina textile complex.

Five conclusions from this study are as follows:

1) A viable textile complex exists in South Carolina (estimated sales in excess of $21 billion), with companies who are global competitors. This complex, while perhaps different in configuration from the industry five years ago, is extensive in company locations (912 company locations). There is a textile complex company location in each of the 46 South Carolina counties. The South Carolina “textile industry” has restructured to become the “textile complex”, with representation of all three textile business activities in the State: Pre-production, production, and post-production.

2) South Carolina is home to several headquarters. In addition, the South Carolina textile complex has a global interface, not only in trade activities (export, import, both) but also in foreign direct investment in the State (particularly in machinery and chemicals).

3) Two geographic clusters and three industry clusters exist in the South Carolina textile complex. These clusters provide profitability, innovation and opportunities for new business development.

- **Geographic Clusters**: While the largest geographic textile cluster is the Upstate Cluster, the second geographic cluster (Midstate Cluster) provides strength to the State. The transportation infrastructure, especially the I-85 corridor, provides significant textile business to the State!

- **Industry Clusters**: Three industry clusters exist in the State. The Advanced Manufacturing Cluster provides commodity plus niche/specialty products and services, with some global market coverage. The new/emerging clusters provide some infrastructure and growth potential for the State (individual growth potential, plus growth for the Advanced Manufacturing Cluster). The Textile and Apparel Creative Innovation Cluster is composed of companies providing “textile inputs” (chemicals, fibers, machinery, packaging) and provides opportunities for creative innovation to the Advanced Manufacturing Cluster. The Textile and Apparel Wholesale Cluster focuses on wholesale activities (yarn & fabric, apparel, home furnishings) and is the State’s textile-related business activity in post-production activities. This cluster, diverse in business models, also represents companies with smaller employment.

4) Segmentation of South Carolina textile complex resulted in three segments:
"Flourishing" (n = 124; 37%); “Coping” (n = 131; 39%), “Potentially Vulnerable” (n = 82; 24%). With the anticipated global growth of textile product production and markets, some South Carolina companies (especially “Flourishing”) are positioned to maintain and build global business. The segmentation criteria can be used by South Carolina companies to assess their current positioning as well as identify ways to improve their company’s global competitiveness.

5) The continued enhancement of knowledge programs via seminars and conferences provided by associations, the Textile Cluster, universities, and other organizations will enhance the State’s textile complex, including individual companies, in global competitiveness. Such programs include market dynamics, trade and sourcing, new product development, supply chain management, and leadership/human resource development.

In addition to the study’s conclusions, three additional outcomes of this study will assist the South Carolina Council on Competitiveness in providing assistance to the South Carolina textile complex:

1. Development and use of the Global Textile Competitiveness Framework (fishbone diagram) will provide the identification of business strategies and tactics imperative to compete in the global marketplace. This strategic framework, combined with data regarding global dynamics, can provide a template for individual company examination of global competitiveness capabilities and opportunities.

2. A comprehensive resource, South Carolina Textile Complex Database, can be used to further profile South Carolina textile complex companies (a total of 912 companies, with up to 50 descriptive variables for each company) and target select companies for Council (and Textile Cluster) programs.

3. The updated “picture” of the South Carolina textile complex has provided:
   a. Overall descriptive analyses
   b. Geographic and industry clusters, including the focus on pre-production and post-production processes (reflected in new/emerging clusters)
   c. Segmentation of the South Carolina textile complex
   d. Identification of South Carolina Council on Competitiveness services to strengthen the South Carolina textile complex.

A proactive approach by the Council, using results from this study, can assist South Carolina companies to “survive” and “thrive.”

This project, with the expertise of North Carolina State University College of Textiles’ personnel, provides rich research outcomes, especially with inputs from the collaborative and interdisciplinary representation on the study’s Steering Committee. Bringing together personnel from government, industry and academe has provided timely results, with a research framework that can be replicated by other South Carolina cluster teams (i.e., apparel, tourism).
Next Steps/Future Research Studies:
Database Research Projects:

• Development of the Textile Connect Information Warehouse for South Carolina Textile Complex. This web presence, with additional promotional efforts, can communicate the strength of the South Carolina textile complex to enhance company and industry profitability, increase the South Carolina textile cluster, and potentially identify opportunities for company recruitment to the State.

• “The New World of Textiles” in South Carolina. This initial research project has identified a presence of advanced manufacturing companies as well as a significant number of companies moving from traditional manufacturing to other areas of textile business (pre-production, post-production). Results from “The New World of Textiles” study could also set the stage for a further series of textile-related clusters in the State. With segmenting the South Carolina database, the “Flourishing” category can provide significant information about advanced manufacturing success as well as this “phase shift” to other textile business activities.

• Innovation: Leveraging Machinery and Suppliers to Assist in Innovation and Development for Products and Services to Meet Market Demand. The South Carolina textile complex has a significant presence in machinery and suppliers (Creative Innovation cluster). It would be useful to build “areas of strategic development” that utilize the existing structure, e.g., work with machinery and suppliers to bring information about potential products for the national market.
REFERENCES


APPENDICES