

**An Analysis of the Economic Development Role
Of Business Associations
And Other Intermediary Organizations
Serving Appalachian Industries**

VOLUME I: REPORT

Submitted to
the Appalachian Regional Commission

Second Edition
April 2000

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EXECUTIVE SUMMARY

This report examines how collaboration among firms through business associations and other entities can increase the participating firms' competitiveness. These intermediary organizations can tailor their services to a membership of firms that differs in terms of the size, sector, and location of their members. By combining their efforts at research and development, training, technology acquisition, and marketing, small and medium-sized enterprises (SMEs) garner economies of scale in providing services that come naturally to a larger operation. The most comprehensive system of inter-firm services would assist all types of firms (small and large, peers and suppliers, local and multiple locations) with their specific needs related to reducing both transaction and adaptive costs[§]. Such a system would also promote regional and national industrial development simultaneously.

The Appalachian Regional Commission (ARC) wanted to identify the extent that business associations and other intermediary organizations increase the competitiveness of firms in the thirteen-state Appalachian region. In addition, ARC wanted to know the number and type of such intermediary organizations, the various strategies they use in providing services, and the opportunities for public-private sector cooperation in delivering services. This report meets these objectives by focusing on case studies of four prominent manufacturing sectors in the Appalachian region.

CASE STUDIES

Four important manufacturing sectors were selected for detailed case studies to analyze the role of business associations in economic development in this region. The furniture, wood products, textiles, and apparel industrial sectors were selected because they are among the most prominent in the Appalachian states, based on their employment size and concentration (as indicated by location quotients). A brief institutional profile is provided, followed by a summary of business associations within the industry, their functions, and their weaknesses. These summaries are based on telephone interviews and an organizational literature review of 59 business, public, or quasi-public institutions.

Furniture

Furniture production takes place throughout the thirteen states in the Appalachian region; these states account for almost half of all jobs in furniture manufacturing in the United States. Twenty percent of all U.S. manufacturing jobs in furniture construction are provided by plants in the Appalachian Region, and fifteen percent are provided by North Carolina plants—six percent exist in firms within the state's Appalachian region. Several industry trade associations and other intermediary institutions serve the industry nationally from High Point, North Carolina, and elsewhere in the state. Each

[§] Transaction costs include typical costs of producing the same product, while adaptive costs include the costs of shifting to new products or processes in response to changes in long-term demand.

organization represents small and large firms in their respective constituency. Each also organizes a peer group of firms that are horizontally related in an industrial supply chain. They assist coordinating the supply chain in the furniture market through the International Home Furnishings Marketing Association (IHFMA) and several industrial extension/research institutes for the industry.

The clustering of these various associations in High Point rather than in Washington, D.C. lends a local focus to their efforts and offers strong spin-off benefits in terms of local and statewide development. These institutions offer services that allow firms to reduce both transaction and adaptive costs. For instance, one institution offers transaction cost savings for the industry by lobbying through its Furniture Political Action Committee, and by carrying out extensive activities to coordinate its members' output and input markets. Other institutions help the industry with new product development, research and development, and training.

The lack of such institutional clustering in other furniture-producing states such as Mississippi and Tennessee has weakened the furniture manufacturing support systems there. Local associations would allow firms to meet more frequently and perhaps influence state-level economic development efforts—a critical policymaking level in this age of federal devolution. Given this institutional vacuum, several non-profit community development organizations have begun to organize the industry at the local level (e.g., the Community Development Foundation (CDF), in Mississippi, and the Appalachian Center for Economic Networks (ACEnet) in Ohio). Another gap in the furniture sector is in the area of production labor training. Outside North Carolina, specialized training for furniture workers is scarce.

Lumber and Wood Products

In the thirteen states comprising the Appalachian region, wood and forest products manufacturing jobs on a state-wide basis account for about 40 percent of such jobs nationally, and are concentrated in North Carolina, Alabama, Georgia, Pennsylvania, Mississippi, and Virginia. Appalachian firms account for fifteen percent of these jobs nationally. Several organizations represent divisions of the industry nationally with headquarters in Washington, D.C. The American Forest and Paper Association (AF&PA) represents peer firms that are sometimes connected in the supply chain, but its activities at a local/regional level have been minimal.

There are several regional and sectoral business associations, but only a few target the wood products industry specifically. Other regional associations serving firms in the same wood products sector exist almost exclusively for product promotion. These organizations have been too dispersed in membership to exert much influence at the state level for funding and targeting industrial extension activities.

In terms of creating adaptive cost efficiencies, there is a separation of the industry into top-down (and nationally centered) and bottom-up (regionally and locally focused)

efforts. One top-down national effort is the Sustainable Forestry Initiative promoted by the AF&PA. The Southeastern Lumber Manufacturers Association (SLMA) has initiated a regional effort through its resource pooling schemes, “managers’ roundtables,” and strategic planning. At the local or statewide level, Kentucky’s Wood Products Competitiveness Corporation (KWPC) also has established resource pooling schemes and strategic planning initiatives for the industry.

Compared to the other industries profiled, associations in the lumber and wood products industry seem the least involved in collective research efforts, training, and new technology. No linkage or collaborative efforts with union or production labor were mentioned. Another institutional gap in this sector is the lack of many local or state-level associations to influence and/or work with state industrial extension services, although Kentucky and North Carolina are exceptions. In addition, there is a relatively low level of collective research and new technology initiatives in the lumber and wood products sectors.

Textiles

The textile industry is centered in the U.S. South. North Carolina alone provides almost one-third of all textile jobs in the country, and 75 percent of the industry’s total business volume. Adding North Carolina, Georgia, South Carolina, and Alabama—in order by size of employment concentration—the employment total of all textile jobs is about 78 percent. Over one-third of all jobs in this industry are located in the Appalachian Region.

State textile associations exist in North Carolina, South Carolina, Georgia, and Alabama. Some of these associations, such as the Georgia Textile Manufacturers Association and the North Carolina Textile Manufacturers Association, provide financial support and collaboration with state technical schools and community colleges for worker training. The business-community college link is most apparent at the regional or local level. Several highly local actors have taken a more active role in helping their member firms collectively focus on adaptive cost efficiencies. For instance, the Dalton Floor Covering Marketing Association (DFCMA) assists smaller firms in Georgia by hosting its own local suppliers and equipment show.

In contrast to these state or local textile associations is the American Textile Manufacturers Institute (ATMI) whose members process about 80 percent of all textiles made in U.S. plants. The organization’s mission is to allow its member firms to solve problems collectively at a national level and to act as the industry’s representative to federal agencies, Congress, and the news media. Many of the activities for stimulating textile firms to acquire new technologies and skills come from the national level. Several universities, national organizations, the federal government, and key manufacturing companies started new institutions to promote basic research and technology diffusion in integrated textile industries. The first national-level institution for the integrated textile complex was the Textile/Apparel Clothing Corporation (TC²). Located in North

Carolina, it focuses on research and development for automating the apparel industry. Other institutions include the American Textile Partnership (AMTEX), a collaborative research program involving industry representatives, federal agencies, and a consortium of universities.

The specialized federal-level efforts may not always be coordinated with state or sub-state efforts. Smaller textile firms—often underrepresented in national and diversified business associations—may receive less support from this set of institutions, weakening the development of state or sub-state textile clusters. Some state or sub-state textile clusters served by proactive business associations have enhanced their competitiveness. However, more localized clusters without such associations are relatively under-served.

Apparel

Fifty-one percent of all jobs in the U.S. apparel industry are located in the thirteen states comprising the Appalachian region, with the largest number of state-wide, apparel jobs in New York, North Carolina, Georgia, Pennsylvania, Tennessee, Alabama, and South Carolina. Within the Appalachian Region, 16 percent of all jobs in the U.S. apparel industry, with Tennessee, Alabama and Pennsylvania having the largest employment. For some Appalachian counties, apparel constitutes the most sizable manufacturing opportunity locally.

The apparel industry in the Appalachian region is well-served by a host of innovative, basic-research and training organizations that are organized and funded at the national level through AMTEX. The American Apparel Manufacturers Association (AAMA) offices are in the Washington area, allowing it to carry out significant federal level lobbying activities. Against this context of national institutions, one can compare the set of local or regional apparel associations likely to involve the industry's smaller firms. This contrast shows that the institutional structure serving apparel at this lower level is relatively weak if almost non-existent.

By itself, the AAMA is not involved with business associations that operate at a sub-national level; nor does it host local chapters of the AAMA. Two regional business associations, the American Apparel Producers Network (AAPN) and the Southeastern Apparel Manufacturers and Suppliers Association (SEAMS), offer contrasting images of the potential for regional trade associations in this industry. AAPN offers its member firms cooperative marketing and cooperative workers' compensation insurance schemes. SEAMS aims to assist its members with acquiring information about markets and technology. Organizations that serve or organize state-level or sub-state clusters of apparel firms were not encountered. State competitiveness efforts, on the whole, did not target the apparel industry for specialized services (except North Carolina's manufacturing extension services). Targeted and sector-specific associations, government extension, and/or community college services do not serve the bulk of small apparel firms in much of the Appalachian area.

AMTEX and other organizations are national institutions that are regionally sited, and provide services for moving the apparel industry into computerized and automation technologies. However, it is unclear the extent to which these efforts have been linked up with smaller apparel firms in the industry. Several regional associations indicate a closer proximity to SME manufacturers, but differ immensely in terms of their performance. Finally, none of the associations interviewed for this section mentioned collective efforts with worker training.

FINDINGS AND RECOMMENDATIONS

This section summarizes the main insights that emerge from the foregoing case studies. It also includes recommendations for how public sector agencies such as the Appalachian Regional Commission can build on the noted institutional strengths or overcome institutional weaknesses.

Findings

- These associations show a great range in capacity, from government lobbying to assisting member firms develop new products, processes, skills, and technology.
- Few business associations researched for these case studies actively recruit, train, and/or structure career paths for production workers in their member firms.
- National business associations represent all four industries in the Appalachian region but many local clusters of firms are under-served by business associations.
- Large firms are well served by business associations in all four industries but smaller firms remain neglected in terms of separate representation for their specific issues.
- Business associations in the sectors surveyed foster peer groups of firms within an industry more than supply chain relationships.
- Local business associations, state economic development agencies, and other state or local actors together have constructed highly innovative support systems.

Policy Options

- Stimulate the organization of local or regional business groups, especially for small and medium-sized enterprises.
- Facilitate vertical supply chain cooperation by hosting trade shows, conventions, strategic planning efforts, or other mechanisms to bring inter-linked sectors together at a national or sub-national level.
- Encourage closer links between business associations and training institutions, and research collective labor-management efforts and independent labor associations to provide training and other support services.
- Foster the benchmarking of business associations for “best practices” to stimulate weak or inactive associations.

CONCLUSION

This report has analyzed the capacity of business associations and other inter-firm organizations in the furniture, lumber and wood products, textiles, and apparel industries in the Appalachian region. It offers a framework to assess these organizations by examining their functions and scope. The case studies reveal many successful practices by associations that could be replicated in other geographic locations or other industries. For example, collaboration among furniture trade associations, universities, and other state agencies has resulted in significant economic benefits for North Carolina. Other states with clusters of furniture manufacturing could use some programs and practices in North Carolina as a model. The case studies also reveal insufficient inter-firm associations in certain areas, particularly for small firms, and insufficient programs for worker training and supply-chain integration. The findings and policy options in this study offer important opportunities for future collaboration among public-sector organizations, including the Appalachian Regional Commission, and business associations. Successful collaboration based on these findings could improve the effectiveness of business associations and lead to greater economic development in the Appalachian region, both in the industries examined and in other industries.

I. INTRODUCTION

Public policymakers are examining the involvement of groups of firms in a variety of economic development efforts. Economic development practitioners and researchers hold that informal and formal collaboration among firms such as business or vendor associations, research and development or training consortia increases participating firms' competitiveness. Collaboration is believed to promote collective problem solving, the sharing of information, new technology diffusion, access to new markets, and new product or process innovation among firms. This emphasis on the role of collective business institutions comes from a decade of research on the successful models of collaborative and "flexible" production in regions of Italy, Germany, and Japan.

The research on the role of business associations in the United States,¹ and the more substantial literature covering less developed countries,² also suggests there is increased pay-off to regions and firms through formal institutions of collaboration. For instance, Annalee Saxenian's³ investigation of electronics firms in Silicon Valley points out the key role played by business associations, such as the Western Electronics Manufacturers Association and the Semiconductor Equipment and Materials Institute, in encouraging cooperative research and development, marketing, and information-sharing activities among such firms. Stewart Rosenfeld's⁴ evaluation of the Northwest Area Foundation's efforts to start new business associations among rural manufacturers in the states of Minnesota, Washington, and Montana suggests that firms credited their expanded sales to membership in such associations. Lynn McCormick's⁵ history of a trade association among the small firms in Chicago's metalworking industry shows how it was a critical support during periods of restructuring by providing collective strategic industry planning, constant institutional organizing, and the collective provision of training, technological, and other services. Lastly, other research implies that many of the activities such associations provide are an important source of strategic information for the member firms.⁶

The Appalachian Regional Commission (ARC) wants to identify the extent to which business associations and other intermediary organizations in which businesses participate, such as research and development or technology-based consortia, non-profit regional development organizations, increase the competitiveness of firms in the thirteen-state Appalachian region.⁷ In addition, the Appalachian Regional Commission wants to know the number and type of such intermediary organizations, the various strategies they utilize in servicing firms, and the opportunities for public-private sector cooperation in delivering such services.

This paper focuses primarily on business associations and offers a framework for analyzing the inter-firm institutional capacity of a particular sector and region. It draws on existing theoretical and case study material on business associations and other inter-firm institutions. This framework is then applied to four key industrial sectors within the Appalachian region—furniture, wood products, textiles, and apparel—to identify areas of

institutional strengths and weaknesses. The institutional capacity of these sectors is gauged by interviews with representatives of business associations and other intermediary organizations, and a review of the organizational literature they publish. The report concludes by suggesting critical areas of intervention for the public and/or quasi-public sector to strengthen these collective inter-firm institutions, as well as areas for future research.

II. THE FUNCTIONS AND SCOPE OF BUSINESS ASSOCIATIONS AND OTHER INTERMEDIARY ORGANIZATIONS

Successful flexible production districts in other countries show that business associations and other intermediary organizations undertake a variety of activities to promote regional development. This section offers a framework of the functions and scope of business associations for analyzing the inter-firm institutional capacity in the Appalachian region. This framework suggests the full range of activities that business associations could undertake to promote the growth of firms, industries, and regions. Before detailing this framework, the key institutional features of the flexible production districts are highlighted.

Business Associations and other Intermediary Organizations in Flexible Production Districts

Much of the interest in promoting business associations and other intermediary organizations for economic development stems from research of highly successful “flexible production” manufacturing districts in the 1980s and 1990s in other countries. Firms in flexible production districts organize manufacturing along collaborative lines that changes the nature of competition. This structure contrasts with firms in most U.S. regions, as U.S. firms are often described as carrying on distant or “arms length” relationships with other firms, and as solving business problems on their own. This “arms length” mentality has been cited as a cause of the declining competitiveness of American manufacturing.⁸

Researchers, firms, and policymakers in this country began to observe and replicate the collaborative relationships and institutions in “flexible production” districts elsewhere. These institutions in such regions as Emilia-Romagna in Italy (called the “Third Italy”), in Baden-Wuerttemberg in southern Germany, and in Japan include:⁹

- (1) a web of business associations—sometimes legally mandated by government—to give firms a formalized governance structure for solving problems collectively;
- (2) a system of technical assistance service centers that offer firms advice on marketing, technology acquisition, research and development, new product commercialization, and general industry research;

(3) links among the service centers, faculty at local universities and vocational schools, and industry representatives, all of whom provide input on curriculum and policy development matters;

(4) a host of local or regional governmental support services for existing firms, would-be entrepreneurs, and workers that are often offered in partnership with industry associations (e.g., vocational training programs; subsidized loans, venture capital funds, industrial space; day care and other social services for workers);

(5) direct involvement by unions or organized labor in industrial policymaking on the shop floor, in local technical assistance centers, and in vocational training programs.

Flexible production systems necessitate collaboration among many actors. Intermediary organizations, such as business associations, labor unions, and less formalized collective institutions like consortia, are directly involved in activities that provide business assistance to firms. These non-governmental actors also forge partnerships or act in an indirect advisory capacity with local and regional government agencies and other public sector actors such as universities and public school systems to promote local economic development and industrial policy. The greater the overlap and duplication of such collaborative partnerships, the greater the opportunity for all firms to link to the beneficial framework.

Collective Action to Minimize Transaction and Adaptive Costs

Regional economists traditionally discuss how groups of firms offer certain economies as compared with the individual firm. Firms in clusters enjoy *external* economies of scale and scope comparable to the *internal* economies of scale and scope that the large, vertically integrated corporation provides for itself (e.g., as when it employs automated assembly line technology). Firms gain external economies, or cost savings, by sharing a skilled and specialized pool of labor, a specialized set of local providers (e.g., from suppliers of components to business services), and technological information and know-how which allows each firm to better solve its own distinct production problems. These represent cost savings from the *unplanned* behavior of firms that are co-located in the same place. When firms *intentionally* carry out collective action with others—as when they join together in a business association—they may achieve even greater cost savings for each member.¹⁰

Analysts distinguish between two types of cost savings that groups of firms can achieve through intentional group action: those related to *transaction costs* and those related to *adaptive costs*.¹¹ Business associations can achieve transaction costs savings for their members by helping them deal most economically with short-term changes in demand. The challenges are to increase capacity utilization, profitability, and productivity for individual firms in the association. Savings related to adaptive costs

occur when groups of firms are helped to produce new products in the same or different sectors, and helped to create higher value-added niches in an existing product range. These situations require new skills, new capital investments, and/or new technology so the firms can create new products, diffuse new technologies, and utilize their workers more flexibly than before.

Researchers argue that adaptive costs are more critical for firms today given the increased focus on innovation as the key competitive factor in the “flexibly structured” global marketplace. In comparison, until recently many American manufacturers focused solely on transaction costs, and issues such as increasing productivity or cutting production costs. A firm or group of firms today, however, must innovate *and* increase productivity and cost savings in order to remain competitive. Firms must attend to both transaction and adaptive costs.

Critical Functions of Business Associations and Other Intermediary Organizations

Seven critical functions of business associations and other intermediary organizations will be discussed below (see Figure 1).¹² Functions that achieve transaction cost savings are discussed first, followed by those related to adaptive costs.

(1) Public and Private Sector Roles. The first critical function that business associations and other groups of economic actors carry out is to clarify the respective roles of the public and private sector concerning property ownership and use. This function can lead to transaction cost savings when business associations and other intermediary organizations push government agencies to stabilize or increase private property rights, to enhance government performance, or to expand the provision of infrastructure for a locality. Business associations in the U.S. and other advanced industrialized countries often lobby governments to decrease tax burdens, ease regulations, and increase public sector efficiency and the provision of infrastructure. The results strengthen the returns to private property owners.

(2) Market Coordination. The second critical function of business associations and other intermediary organizations is to coordinate their members input and output markets to achieve transaction cost savings. For example, input markets are influenced when small firms engage in resource pooling. Business associations in the U.S., such as Chicago’s Tooling and Manufacturing Association (TMA), help small firms share the cost of health insurance and long-distance telephone service. Collective efforts to ensure an adequate supply of labor, such as the TMA’s collective screening of potential workers, also influence the quantity, quality, and price that individual firms pay for this specific input.¹³

Collective control over output markets is enhanced when business associations collect and disseminate information on changing market trends and/or help market their members’ products. Business associations and other intermediary organizations can also limit or redirect the productive capacity of the group as a whole through market sharing

and/or export promotion schemes in downturns. In the Depression of the 1930s, for instance, members of the TMA collectively agreed to reduce the workweek and not to hoard work individually. Today, New York City's Garment Industry Development Corporation influences its members' exports through overseas export missions and other activities.¹⁴

(3) Skill Upgrading. A third function involves upgrading skills and productive capacity of member firms and other actors. These activities achieve adaptive cost savings for groups of firms moving into new or improved product areas. For instance, Chicago's TMA has operated a training program for its members' workers for at least forty years and took the lead locally in diffusing information about numerically controlled and computer-numerically controlled technology in the industry in the 1960s and 1970s. The Great Lakes Manufacturing Technology Center (GLMTC) in the Cleveland area, a creation of the State of Ohio, offers seminars and workshops on computer applications in metalworking operations to local manufacturers.¹⁵

(4) Research and Development. Collectively promoting research and development activities among a group of firms, may stimulate them to innovate new products and production processes faster. Calstart, for instance, is a consortium of public and private organizations in Southern California that has organized a network of component suppliers to investigate the commercialization of an electric car and to build a prototype.¹⁶

(5) Inter-firm Coordination. A fifth function involves the intentional coordinating of inter-firm relationships to smooth out conflicts and achieve shipping, production, and other efficiencies. The Consortium for Supplier Training is a collective effort by major customer firms (e.g., Xerox, Motorola, Digital) that has standardized quality accreditation requirements and run regional training programs for its suppliers. This improves the production quality and capacity of many supplier firms while also coordinating supply chain relationships better. The State of Oregon's Key Industries Development program subsidized "brokers" to organize bidding consortia and other cooperative projects among small manufacturers.¹⁷ Whether the collaborative effort is vertical—between firms in a supply chain—or horizontal—between peers wanting to pool resources, the coordination of networks requires leadership to organize and maintain relationships.¹⁸

(6) Strategic Planning. A sixth function is strategic planning for an industry and/or inter-linked businesses. This function is critical for allowing firms to anticipate future changes in technology, labor force requirements, markets, and other conditions. In some cases, a public sector actor carries out this role.¹⁹ In other cases, a business association or other non-public-sector actor plays this role. Chicago's TMA conducts strategic planning exercises for the metalworking industry periodically, allowing firms to

**Figure 1 -Institutional Framework
For Collective Inter-firm Partnerships**

<p align="center">ORGANIZATIONAL SCOPE</p> <p align="center">ORGANIZATIONAL FUNCTION</p>	<p align="center">1. Size of member firms</p> <p align="center"><i>Small vs. Large</i></p>	<p align="center">2. Industries of member firms</p> <p align="center"><i>Peer vs. Supply Chains</i></p>	<p align="center">3. Location of member firms</p> <p align="center"><i>Local cluster vs. Dispersed</i></p>
<p>1. Clarifying public and private sector roles. Increasing private property rights, improving government performance and infrastructure, lobbying.</p>			
<p>2. Coordinating markets. Increasing control over input and output markets (including resource pooling schemes), increasing member information about markets, limiting or redirecting productive capacity collectively (also including searching for new, export markets).</p>			
<p>3. Upgrading skills and productive capacity/technology. Developing management and workers skills, diffusing new technologies, improving product/production process quality (e.g., by enacting higher standards).</p>			

ORGANIZATIONAL SCOPE ORGANIZATIONAL FUNCTION	1. Size of member firms <i>Small vs. Large</i>	2. Industries of member firms <i>Peer vs. Supply Chains</i>	3. Location of member firms <i>Local cluster vs. Dispersed</i>
4. Promote R&D and new product development. Promoting research and development, new product development, and basic research.			
5. Coordinating inter-firm relationships. Increasing efficiency in supply chains, coordinating peer firms relationships, acting as lead organizer for group (e.g., by setting up inter-firm relationships or moderating conflicts among firms).			
6. Conducting strategic planning for relevant industry(s) Planning for future changes in markets, technologies, labor and training needs, and product trends.			
7. Upholding labor standards and social benefits. Setting wage or benefit standards and/or providing other social supports for workers.			

identify critical challenges in their environment, such as changes in technology.²⁰ Very large firms and corporations carry out strategic planning functions for their own related businesses, but not for an industry at large.

(7) Labor Standards. A seventh, and final, is to uphold labor standards and other social benefits for workers. This is often accomplished in partnership with organized labor unions and/or public sector institutions, such as when the local government in the “Third Italy” arranged for day care services for working women.²¹ Labor standards and social benefits for workers may emerge as a function of government regulation, such as in the United States (e.g., worker safety laws).²² It can also arise out of negotiation between unions and business associations. An example is Chicago’s TMA in its early years. This business association was originally formed out of a partnership with the Machinists Union in the 1920s. Both metalworking suppliers and their workers wanted a collective mechanism to counteract the cutthroat pricing their customers were encouraging. Implicit within this worker-management partnership were higher wages and skills training for the craft workers.²³ Craft communities historically have often forged partnerships between firm owners and their skilled workers.²⁴ The provision of collective labor standards and other social benefits fosters the dynamism of firms when workers are also given greater autonomy on the shop floor and can help management innovate new products and production processes with their experience and input.²⁵

Businesses, acting collectively with or without labor, can also *inhibit* the adaptation process toward more innovative practices to the extent that they solely seek higher returns and protection from competition. This is the basis for U.S. antitrust policy. However, some researchers argue that some higher returns are required to invest in new technologies, skills, and research and development in order to promote the adaptation process in the longer term. These researchers feel it is better to regulate how such returns are used than prohibit collective business activities completely.²⁶

In summary, researchers have conceptualized how various activities of business associations and other collective entities have intentionally achieved cost savings and other external economies for members. These activities help cut transaction costs by protecting firms’ private property rights and coordinating input and output markets. Savings related to adaptive costs occur when the following activities are offered collectively: upgrading skills and firm technologies, promoting research and development activities, coordinating supply chain and peer relationships, and conducting strategic planning for industries. These results allow firms to enter new product markets and adopt new technologies more efficiently.

The Scope of Business Associations and Other Intermediary Organizations

Business associations and other intermediary organizations carry out diverse functions and work at different levels, or scope. Inter-firm institutions can be classified according to three types of scope: size, sector, and location of their member firms (refer again to Figure 1).

(1) Small and Medium-Sized Enterprises versus Big Business. Models of flexible production systems from other countries offer examples of small and large-firm-oriented collective services. The focus on small and medium-sized enterprise (SME) emerges in studies of the Italian flexible industrial district model. Institutions that serve large firms are more prevalent in the Japanese case.

There are two rationales for focusing the efforts of collective institutions on providing support to SMEs versus larger businesses. First, by combining their efforts on research and development, training, technology acquisition, and marketing, SMEs garner economies of scale in providing services that come naturally to a larger operation. Secondly, many SMEs face resource and capacity constraints compared to much larger and resource-rich corporations. Government subsidies are appropriate to encourage SME survival because such firms produce wider benefits for regional economies. For instance, small firms are believed to provide a greater proportion of new jobs, offer an important livelihood in areas faced with high unemployment (e.g., rural areas in developed countries and much of the developing world), and be more flexible in labor deployment to meet rapid changes in demand.

SMEs can be efficient and dynamic, especially when linked to highly cooperative small-firm communities or large firms that transfer critical skills and resources. Business associations can provide this linkage. Since SMEs are local and less mobile compared to multinational firms, they offer entrepreneurial opportunities and returns to local people.²⁷ Hence, some researchers hold that small-business support activities foster regional development simultaneously—a development path that is controlled by local people.²⁸ In addition to the economic gains that SMEs potentially accrue through collective action and institutions, SMEs can achieve political goals more effectively as a group by lobbying other public and private sector actors.

To achieve such benefits, the U.S. government launched its Manufacturing Extension Partnership (MEP) program in 1989 under the supervision of the National Institute of Standards and Technology within the Department of Commerce. MEP is a network of manufacturing extension centers in each state that target technical assistance and other services to help SMEs become globally competitive. Local centers operate with federal, state, and local government support and use in-house as well as consultant expertise. Most are linked with local economic and industrial development organizations. For instance, Georgia's Manufacturing Extension Alliance operates in

partnership with Georgia Tech’s Economic Development Institute, which has provided assistance to area firms for over 30 years through 18 field offices. Alabama’s Technology Network links the University of Alabama, Auburn University, the Economic Development Partnership of Alabama, and some two-year colleges to its manufacturing extension system of 10 regional offices. MEP services are provided to individual firms or groups of firms and include help in such areas as technology assessment and adoption, quality standards, workforce training, workplace organization, business systems, marketing, and finance. Business associations can offer similar services to local companies on their own or sometimes in partnership with the country’s MEP centers and/or state economic development agencies.²⁹

Researchers disagree as to whether large firms use the services of business associations. Some authors imply that large firms—especially vertically or horizontally integrated firms—do not require inter-firm mechanisms to carry out their goals.³⁰ Other researchers describe how business associations and other intermediary organizations help large firms meet the increasing pace of technological change and shorter product life cycles. Large firms in Japan and the business groups, or *keiretsu*, to which they belong, engage in frequent collaborative behavior to solve joint problems and lobby the government.³¹ Collaboration in associations and research and development consortia allows large and small firms alike to achieve technological “synergies” and realize economies of scope through sharing technological skills and solutions.³²

Associations representing large firms often carry out different functions than those representing smaller firms. Large firm associations are more likely to lobby the government for trade protection. Associations representing SMEs, on the other hand, are more likely to work on joint export promotion, research and development, training, and marketing schemes that large firms easily implement internally. Separate intermediary organizations also allow SMEs to formulate policy independently within such organizations without fear that larger firms will dominate decision-making.³³ Therefore, public sector may help by stimulating certain kinds of collective policies and organizations for SMEs—as do the German and Japanese industrial policy models.

(2) Same versus Different Sector Institutions. Industry focus also influences the character, goals, and activities of inter-firm support institutions. One can distinguish cooperative actions between firms in the same industry versus cooperative actions in different but inter-linked industries. A separate set of incentives and disincentives shapes cooperation between actors in these two separate categories.

Researchers draw on social and human ecology theory, business strategy, and other literatures to construct typologies that explain how groups of firms act collectively to control their environment.³⁴ Figure 2 offers a synopsis of these typologies. *Peer* groups of firms make similar demands on an environment (in terms of resources used), experience similar resource and other environmental constraints, and, hence, face a “common fate.” They are competitors in the same or similar industries. *Supply-chain* groups are made up of mutually interdependent firms—connected in input-output

relationships—that hold different resource demands and can face dissimilar although inter-linked fates. One could characterize Japanese inter-firm institutions as primarily belonging to the vertical supply-chain type, and Italian ones as heavily focused on inter-firm cooperation among peers. Each of these groups of firms can be subdivided again into different types of action based on whether a small or large number of firms is involved and whether inter-firm relationships (e.g., joint contracting arrangements) or formal institutions (e.g., business associations) are required.

If competition for limited resources shapes the interaction of firms in the same sector, why would they ever engage in cooperative behavior? Some authors suggest they infrequently cooperate, and do so only under stress, or such firms are mostly in the pre-competitive stages of production (e.g., providing collective training or infrastructure). Therefore, public efforts are especially needed to encourage same sector, or peer, cooperation.³⁵ Others suggest that horizontal cooperation is more frequent, especially among SMEs, as a coping strategy for capital or labor constraints of the individual firm, to provide collective services, or to engage in political lobbying. SMEs may pool production capacity, for instance, to share a large order from a customer.³⁶ Therefore, although there are serious market disincentives for firms in the same sector to cooperate, other economic and political incentives push firms into peer collaboration, as do external threats (e.g., competition by firms outside the region or country). These economic and political incentives may be such things as the need for a stronger lobbying force, the pooling of resources, or sharing the costs of public goods such as infrastructure provision and training.

Inter-firm cooperation also takes place between firms in different, but inter-linked sectors. This type of cooperation faces a different incentive/disincentive structure. The incentive is the market tie; firms that buy or sell from each other have a reason to cooperate to carry out the exchange smoothly.³⁷ In addition, there is no competition to act as a disincentive—the firms need each other. However, transaction-based relationships can breed distrust too since they may breakdown into cheating or “opportunism” and, hence, are equally difficult to establish.³⁸

This is especially likely in situations where there is an imbalance of power between collaborating partners, which can happen in subcontracting arrangements between a large customer and myriad small suppliers.³⁹ For instance, the United Auto Workers Union experienced difficulty establishing a horizontal peer network among auto suppliers—a project fostered by the Michigan Manufacturing Technology Center (MMTC)—because large customer firms were “whipsawing” their suppliers, encouraging them to bid their prices down against each other. In Chicago, cutthroat-pricing situations stimulated by larger customers, however, encouraged small metalworking suppliers to initially organize their horizontal business association as a counter to what they saw as

Figure 2 - Inter-firm Relationships

	Peer Relationships (horizontal relationships)	Supply Chain Relationships (vertical relationships)
Direct Relationships (small number of firms)	<p>Two or more firms that are competitors in the same industry, collaborate in a horizontal relationship (e.g., firms sharing machinery and equipment; also price collusion).</p>	<p>A small number of firms in different sectors—having a vertical and often supply-chain relationship—collaborate (e.g., a joint venture; a producer and user improving components in their shared manufacturing process).</p>
Indirect Relationship (large number of firms)	<p>Many competitor firms in the same sector—a horizontal relationship—collaborate (e.g. a trade association of firms in the same industrial sector; a sector specific and supported training program).</p>	<p>Many firms in different, but vertically related sectors, collaborate (e.g., a supply chain network organization, and an inter-sectoral research and development consortium).</p>

“ruinous” price pressures.⁴⁰ Hence, horizontal or vertical cooperation among firms is related and each may influence the other. Both produce distinct economic and political benefits and can enhance firm competitiveness. Both also carry the potential to create conflict.

(3) Regional and National Inter-firm Institutions. Models of flexible production systems from other countries suggest that both national and regional institutions among firms are critical to their growth and adaptation to new competitive forces. However, regional development accompanies firm growth only in cases where actors have constructed regional (and local level) institutions. At one extreme is the “Third Italy,” where collective inter-firm institutions, industry activity, and public sector support services concentrate within a single region (or even smaller communities at the sub-regional level).⁴¹ In this model, strengthening inter-firm institutions leads to development within the region.

At the other extreme lies Japan, with its Ministry of Industry and Trade (MITI) and the many national-level business associations that guide it. Japanese industrial policy and efforts at collaborative inter-firm behavior do not promote a regional benefit, even though large, multi-plant firms do well with this centrally focused assistance.⁴² Germany presents an intermediate case between Italy and Japan with industrial policy and inter-firm institutions operating separately at the regional and national levels.⁴³ Institution building can promote the development of certain regions, but it depends on the combination of institutions and policies that are developed at the national and regional levels.

Some researchers who have studied business associations in the United States describe regional institutions. For instance, collaborative inter-firm relationships at the regional level in Silicon Valley (both formalized associations and less formalized inter-firm norms and behavior) have been linked with promoting the development of that region and its electronics industry. These regional institutions help promote development of the industry and region simultaneously.⁴⁴ A key finding of recent research on voluntary associations in America is that they expand nationally. Many such associations adopt a three-tiered federated structure—parallel to that found in the public sector’s local, state, and national levels. By creating geographically dispersed structures, locally embedded groups can more easily tap into a broader set of people, resources, and political leverage.⁴⁵ The National Association of Manufacturers, with national headquarters in Washington, D.C. and state level chapters, is a version of this federated structure.

In summary, business associations and other intermediary organizations can tailor services to a membership that differs in terms of scope. Such organizations can assist SMEs or large firms; they can serve firms that are peers or those related because of

supply chain needs; and they can include local clusters of firms or a more national and dispersed membership. The most comprehensive system of inter-firm services would assist all such sub-groupings of firms (small and large, peers and supply chains, local and multi-location) with their specific needs related to both transaction and adaptive costs. Such a system would provide an array of functions for firms at different levels, and promote regional and national industrial development simultaneously. In the real world, however, inter-firm governance systems, which require public and/or private sector resources to maintain, may be skewed toward assisting only certain constituencies. In the next section, the potential of a comprehensive framework for inter-firm governance will be compared with actual patterns in different Appalachian industries to determine key institutional gaps.

III. CASE STUDIES OF INTER-FIRM INSTITUTIONS IN THE APPALACHIAN REGION

The foregoing discussion of the theoretical basis of inter-firm institutions and the behavior of successful manufacturing models from Italy, Germany, and Japan, provides a framework for mapping institutional capacity of business associations and other intermediaries in the Appalachian region (refer again to Figure 1). Institutions are classified by the functions they provide and the scope at which they operate. This classification is accomplished by focusing on the role of business associations in organizing manufacturing firms in the Appalachian states. Their role emerges from case studies of four prominent industrial sectors in this region. These case studies also show how institutions such as community colleges, non-profit regional development organizations, and public sector economic development organizations can forge collective partnerships with businesses.⁴⁶

Selection of Industries

Initially, this research was narrowed to all *manufacturing* industries in the Appalachian region because much of the literature on inter-firm collaboration focuses on manufacturing industries. Lists of relevant business associations within the country and/or for the states comprising the Appalachian region were compiled for all manufacturing sectors from the national and regional volumes of the *Encyclopedia of Associations* (see Appendix).⁴⁷ Due to the significant volume of business associations serving manufacturing nationally and within the thirteen states of the Appalachian region, only four prominent manufacturing sectors were selected for detailed case studies. The four sectors are furniture, wood products, textiles, and apparel.

These industrial sectors were selected because they are among the most prominent in the Appalachian states based on location quotients.^{**} This data was drawn from the 1996 statistics published in *County Business Patterns*⁴⁸ (see Appendix).⁴⁹ Furthermore, associations in North Carolina's furniture industry had been chronicled elsewhere as innovative institutions.⁵⁰ Hence, it made sense to choose this industry as a benchmark for the other cases.

To better understand collective inter-firm behavior in these four industries, phone interviews were conducted with the representatives of 21 business associations and 15 public or non-profit development organizations operating programs related to these business associations or industries. Literature published by such organizations was also gathered, which allowed an additional 21 business, public or quasi-public sector institutions to be profiled. Interviewees and related organizational literature are listed in the reference section. The case studies are based on this material unless otherwise noted. Figure 3 offers a list of all relevant organizations and their acronyms. From this data an institutional profile, including institutional strengths and gaps, is offered for the furniture, wood products, textiles, and apparel industry.

Furniture

Of the four industries surveyed for this report, the furniture industry most closely approximates the "Third Italy" in terms of its institutional agglomeration in North Carolina. A coordinated set of trade associations and other institutions are centered in High Point, just outside the borders of that state's Appalachian region and near the other furniture producing hub of Hickory. Fifteen percent of all U.S. manufacturing jobs in furniture construction are provided in North Carolina plants, and nearly six percent exist in firms within the state's Appalachian region. In terms of scope, the trade associations and other intermediaries servicing the industry assist small and large firms, are sector-specific but linked through collaborative activities along the supply chain, and offer a concentrated regional presence while also representing the related set of industries nationally. In regard to function, these institutions help firms achieve transaction cost efficiencies, but also work through a variety of innovative efforts to increase adaptive cost efficiency as well. However, as noted at the end of this section, there are several key gaps in this rich institutional infrastructure for the Appalachian region as a whole.

^{**}A location quotient is a measure of concentration of industrial activity in a region. It is a ratio that compares the share that an industry comprises of all manufacturing in a region to the same share, or percentage, in the country as a whole. Sales or employment levels are often utilized to indicate industry activity. In this report, location quotients are calculated using employment figures. A location quotient greater than "1" suggests that an industry is more concentrated in a particular region than in the country as a whole.

Figure 3 - List of Organizations and Their Acronyms

Acronym	Name of Organization
AACA	Atlantic Area Contractors Association
AAMA	American Apparel Manufacturers Association
AAPN	American Apparel Producers Network
ACEnet	Appalachian Center for Economic Networks
AF&PA	American Forest & Paper Association
AFMA	American Fiber Manufacturers Association
AFMA	American Furniture Manufacturers Association
AHEC	American Hardwood Export Council
AHMI	Appalachian Hardwood Manufacturers Inc.
ARC	Appalachian Regional Commission
ASFD	American Society of Furniture Designers
ATMA	Alabama Textile Manufacturers Association
ATMI	American Textile Manufacturers Institute
AWPI	American Wood Preservers Institute
CAR	Clemson Apparel Research
CDF	Community Development Foundation
CHA	Carolina Hosiery Association
CPA	Composite Panel Association
CRI	Carpet and Rug Institute
CVCC	Catawba Valley Community College
DFCMA	Dalton Floor Covering Marketing Association
DOE	U.S. Department of Energy
EDI	Georgia Tech's Economic Development Institute
FMMC	Furniture Manufacturing and Management Center, North Carolina State University
GIDC	Garment Industry Development Corporation
GTMA	Georgia Textile Manufacturers Association
HMA	Hardwood Manufacturers Association
HP&VA	Hardwood Plywood and Veneer Association
IFAI	Industrial Fabrics Association International
IHFMA	International Home Furnishings Marketing Association
IHFRA	International Home Furnishings Representatives Association
ITT	Institute of Textile Technology
KCMA	Kitchen Cabinet Manufacturers Association
KTA	Knitted Textiles Association

KTS	Kentucky Technology Service
KWMA	Kentucky Wood Manufacturers Association
KWPCC	Kentucky Wood Products Competitiveness Corporation
MEP	Manufacturing Extension Partnership agency
NAM	National Association of Manufacturers
NCMEP	North Carolina Manufacturing Extension Partnership
NCTMA	North Carolina Textile Manufacturers Association
NHFA	National Home Furnishings Association
NIST	National Institute of Standards and Technology, Department of Commerce
NKSA	National Knitwear and Sportswear Association
NTMA	National Tooling and Machining Association
NWFMA	National Wood Flooring Manufacturers Association
OTEXA	Office of Textile, Fiber, and Apparel Industries, U.S. Department of Commerce
PA&TA	Philadelphia Apparel & Textile Association
SBA	Structural Board Association
SCMA/SCTMA	South Carolina Manufacturers Alliance (formerly South Carolina Textile Manufacturers Association)
SEAMS	Southeastern Apparel Manufacturers & Suppliers Association
SFPA	Southern Forest Products Association
SLEA	Southern Lumber Exporters Association
SLMA	Southeastern Lumber Manufacturers Association
SME	Small and medium-sized business
SPC	Southern Pine Council
TC2	Textile/Clothing Technology Corporation
THC	The Hardwood Council
TRI	Textile Research Institute Princeton
UFAC	Upholstered Furniture Action Council
WMMPA	Wood Moulding & Millwork Producers Association
WTC	Wood Truss Council

(1) Furniture Production in the Appalachian Region. High Point and North Carolina are, of course, only part of the furniture manufacturing industry nationally. In addition to historical concentrations in California and Michigan, furniture production also takes place throughout the thirteen states comprising the Appalachian region, in part due to its hardwood forests used in furniture construction. Almost half of all jobs in furniture manufacturing in the United States occur in these thirteen states. As can be seen in Figure 4, other top furniture producing states—with major furniture employment in the state as a whole and/or in the Appalachian counties—include the following:

	<u>Percent of U.S. SIC 25 Jobs</u>	<u>State Location Quotient</u>
North Carolina	15.2 percent	5.1
Mississippi	5.5 percent	6.4
Tennessee	5.3 percent	2.4
Virginia	4.0 percent	1.6
New York	3.5 percent	0.5
Pennsylvania	3.2 percent	0.7

Several of these states show high concentrations of furniture manufacturing employment in their Appalachian counties—with location quotients much greater than 1 (e.g., Mississippi at 24.6, North Carolina at 10.0, Virginia at 5.2, Tennessee at 4.3, and New York at 2.4). Furniture manufacturing employment within the entire Appalachian region totals 20.6 percent of all jobs in this industry nationally. Plants in the industry tend to be similar in size to all manufacturers in the country. For instance, 68 percent of *all furniture establishments* in the U.S. employ fewer than 20 workers and 3.4 percent employ at least 250 workers. Comparable statistics for *all manufacturers* are 67 percent and 3.6 percent, respectively.⁵¹

(2) Institutional Scope. Several industry trade associations and other intermediary institutions serve the industry nationally from High Point, North Carolina, and elsewhere in the state. Figure 5 describes the scope and the functions of these institutions. The overall relationships among these organizations are indicated in Figure 6. The American Furniture Manufacturers Association (AFMA), the International Home Furnishings Representatives Association (IHFRA), and the National Home Furnishings Association (NHFA) represent small and large firms, and serve the manufacturing or wholesale/retail distribution portion of the supply chain. Other institutions connect to this network, such as North Carolina State University, the community college system, and other specialist business associations.

In regard to scope, each association organizes a horizontally related, or peer group of firms within a separate link in the overall supply chain. By coordinating their efforts (e.g., all associations and their members are invited to attend the NHFA's industry-wide convention, held biannually), they also achieve supply chain coordination at the front end of production. Collective coordination of the backend of production (e.g., suppliers to

**Figure 4 - Appalachian States Ranked According to Employment
in Furniture and Related Products (SIC 25)**

INDUSTRY IN THE STATE				INDUSTRY IN APPALACHIA ONLY			
	Empt.	As % of U.S. Empt.	LQ*		Empt.	As % of U.S. Empt.	LQ*
United States	498,464			United States	102,645		
North Carolina	75,586	15.2%	5.1	North Carolina	27,360	5.5%	10.0
Mississippi	27,393	5.5%	6.4	Mississippi	22,433	4.5%	24.6
Tennessee	26,203	5.3%	2.4	Tennessee	18,372	3.7%	4.3
Virginia	20,126	4.0%	1.6	Alabama	10,629	2.1%	2.1
New York	17,450	3.5%	0.5	Pennsylvania	7,435	1.5%	0.7
Pennsylvania	16,183	3.2%	0.7	Virginia	4,738	1.0%	5.2
Ohio	14,970	3.0%	0.7	New York	4,002	0.8%	2.4
Alabama	12,890	2.6%	1.7	Georgia	3,520	0.7%	1.1
Georgia	11,754	2.4%	0.8	Ohio	1,166	0.2%	0.6
Kentucky	4,759	1.0%	0.7	South Carolina	884	0.2%	0.4
South Carolina	4,655	0.9%	0.7	Kentucky	826	0.2%	0.7
Maryland	3,222	0.6%	0.4	Maryland	666	0.1%	1.7
West Virginia	604	0.1%	0.2	West Virginia	614	0.1%	0.2

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).

SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

furniture manufacturers) and of the overall complex is carried out through the International Home Furnishings Marketing Association (IHFMA) and association-sponsored trade shows (described below). Joining this initial cluster of industry-related associations are sets of special institutions that provide unique functions or represent critical personnel in the industry. These organizations serve large and small peer firms. UFAC (the Upholstered Furniture Action Council), for example, was formed in the 1970s to solve the issue of upholstery fires in the home. The American Society of Furniture Designers (ASFD) offers services to design professionals in the industry. However, a weak link in these relationships and institutions servicing the furniture industry is the absence of any collective relationships among firms with production labor (either through unions or labor training programs, as touched on below). Interviewees stated that the industry in the South remains unorganized; hence, few workers' institutions exist that could collaborate.

The institutions mentioned all represent the industry nationally. For instance, manufacturers which used to be represented by regional groups, such as the Southern Furniture Manufacturers Association and the National Association of Furniture Manufacturers, merged into the AFMA in 1983 to overcome institutional duplication. The AFMA's 300-plus member firms are located primarily in the Southeast. However, the association has a presence in 37 states and does not consider itself a regional group.

The clustering of these various associations in High Point rather than in Washington, D.C. and their joint promotion of the High Point market lends a local focus to their efforts and offers strong spin-off benefits in terms of local and statewide development. For example, North Carolina's Manufacturing Extension Partnership (NCMEP) includes a furniture specialist on its engineering staff who works regularly with AFMA on local projects. The state MEP programs that offer sectoral specialists have often been lobbied by business groups to provide them with more specific extension assistance (e.g., see Kentucky's example in the wood industry case). AFMA also helped start North Carolina State's Furniture Manufacturing and Management Center (described below) that is part of NCMEP. Other states without localized sector associations have not been able to establish such links.

Some state extension agents utilize existing business associations to more efficiently market their services. The NCMEP not only works through the AFMA but also through local-level manufacturers associations (e.g., the Robertson County Plant Managers Association) or chambers of commerce. Its specialists will also organize or re-energize such networks if needed, much as agricultural extension agents did in earlier periods.⁵² This is a critical theme, as touched on at the end of this section, and one can compare the institutional agglomeration in North Carolina with its opposite—the lack of such organizations serving furniture clusters elsewhere within the Appalachian region as a whole.

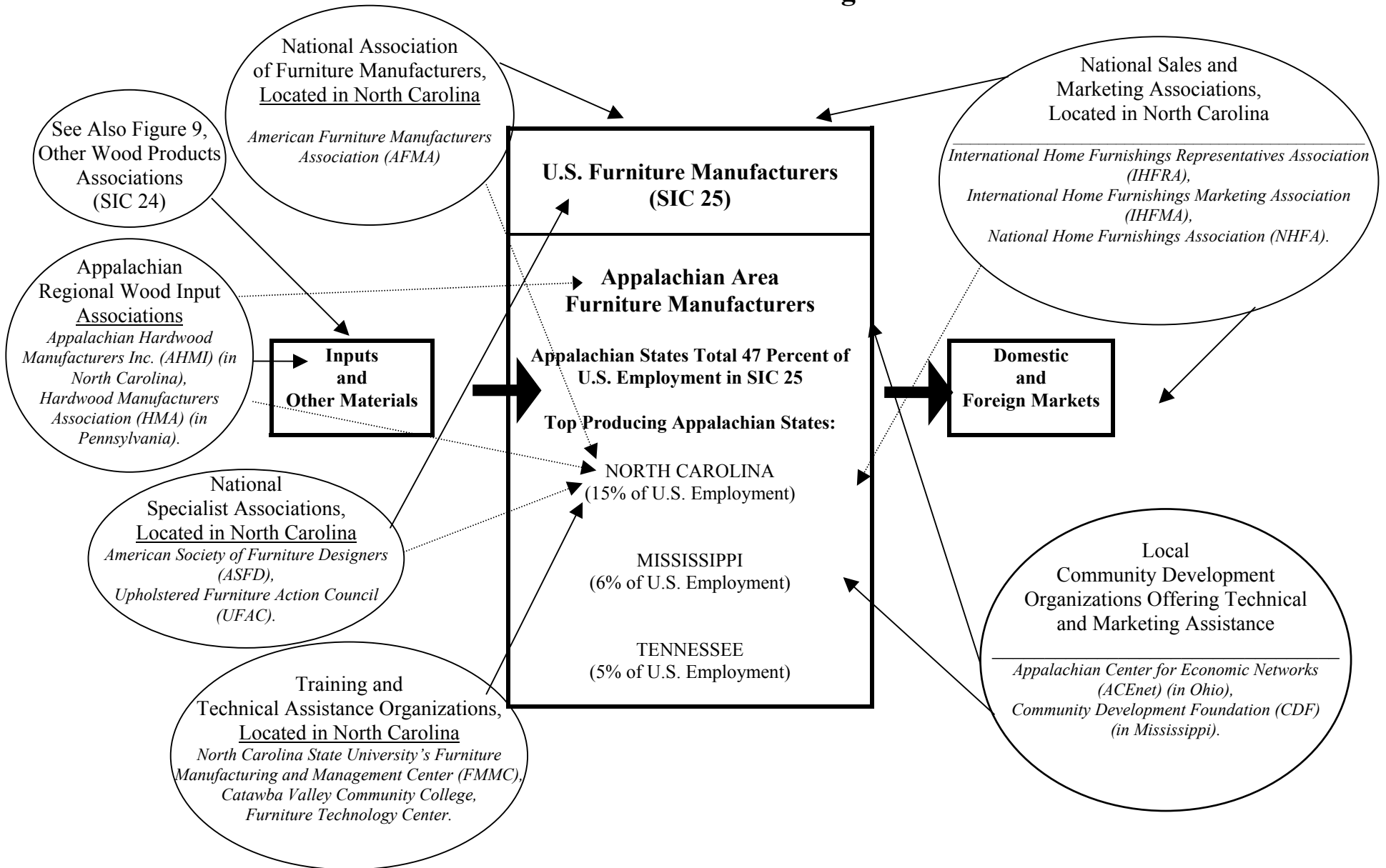
**Figure 5 -
Institutional Framework for Select Inter-firm Partnerships
in the Appalachian Furniture and Related Industries**

ORGANIZATIONAL SCOPE	1. Size of member firms		2. Industries of member firms		3. Location of member firms	
ORGANIZATIONAL FUNCTION	<i>Smaller</i>	<i>vs. Larger (or All Firms)</i>	<i>Peers</i>	<i>vs. Supply Chains</i>	<i>Local/regional Cluster</i>	<i>vs. Dispersed</i>
1. Clarifying public and private sector roles. Increasing private property rights, improving government performance and infrastructure, lobbying.		AFMA		AFMA		AFMA*
2. Coordinating markets. Increasing control over input and output markets (including resource pooling schemes), increasing member information about markets, limiting or redirecting productive capacity collectively (also including searching for new, export markets).	ACEnet IHFRA	AFMA IHFMA CDF NHFA	AFMA ACEnet IHFRA NHFA	IHFMA CDF	CDF ACEnet	IHFMA* IHFRA* NHFA*
3. Upgrading skills and productive capacity/technology. Developing management and workers skills, diffusing new technologies, improving product/production process quality (e.g., by enacting higher standards).	IHFRA ASFD	AFMA/FMMC NHFA CVCC	AFMA/FMMC NHFA IHFRA ASFD	CVCC	AFMA/FMMC CVCC	NHFA* IHFRA* ASFD*

ORGANIZATIONAL SCOPE ORGANIZATIONAL FUNCTION	1. Size of member firms <i>Smaller vs. Larger (or All Firms)</i>	2. Industries of member firms <i>Peers vs. Supply Chains</i>	3. Location of member firms <i>Local/regional Cluster vs. Dispersed</i>
4. Promote R&D and new product development. Promoting research and development, new product development, and basic research.	AFMA/FMMC UFAC	AFMA/FMMC UFAC	AFMA/FMMC UFAC*
5. Coordinating inter-firm relationships. Increasing efficiency in supply chains, coordinating peer firms relationships, acting as lead organizer for group (e.g., by setting up inter-firm relationships or moderating conflicts among firms).	IHFMA AFMA	IHFMA	IHFMA*
6. Conducting strategic planning for relevant industry(s). Planning for future changes in markets, technologies, labor and training needs, and product trends.	NHFA	NHFA	NHFA*
7. Upholding labor standards and social benefits. Setting wage or benefit standards and/or providing other social supports for workers.	IHFRA	IHFRA	IHFRA*

* These organizations serve a disperse constituency in the sense that they are national business associations. However, all cluster in High Point, North Carolina, and therefore, offer significant additional developmental benefits to that locality and region.

Figure 6 - Relationships Among Organizations Serving the Furniture and Home Furnishings Industries



(3) Institutional Functions. These institutions offer services that allow firms to reduce both transaction and adaptive costs (refer again to Figures 5 and 6). Some institutions are better at offering a range of functions than are others; some institutions exist purely as special-function organizations. As an overview, the AFMA provides a lobbying function common among U.S. trade associations. The organization keeps a lobbying staff in Washington to push the industry's point of view; it sponsors the Furniture Political Action Committee to support election of congressional candidates friendly to the furniture industry; and increasingly it lobbies on legislative and regulatory issues at the state level as well. Lobbying protects the private interests of firms (e.g., by seeking lower taxes or public training subsidies) and may offer transaction cost savings for the industry.

Market coordination activities also assist in reducing transaction costs. AFMA carries out extensive activities concerning its members' output markets, but fewer activities related to input markets. For instance, it offers training for the marketing executives in furniture plants, it promotes a membership directory of manufacturers, it regularly offers information on export markets, and it conducts overseas trade missions. It sponsors the International Woodworking Machinery and Furniture Supply Fair USA biannually in Atlanta and operates a Suppliers Division within its membership to facilitate contact between suppliers and furniture manufacturers. These activities regulating supply chain relationships is traditional in the sense that the organization does not actively promote enhanced supply chain efficiency among these partners. However, to the extent that trade shows—either promoting the industry's products or those of its key suppliers—help firms to adopt and develop new processes and products, they help cut adaptive costs.

The AFMA also operates a Transportation and Logistics Committee that helps members improve Just-in-Time delivery of products—representing adaptive cost efficiencies and significant changes in the way distribution is practiced by members. Adaptive cost efficiencies are also achieved by upgrading skills, technology use, and research and development in the industry. AFMA significantly influences this aspect of its members' performance through its Furniture Foundation. Funded by member dues, the foundation has supported educational activities at North Carolina State University for almost a century (the Furniture Manufacturing and Management curriculum offers an undergraduate degree in industrial engineering) and co-funded and co-established the Furniture Manufacturing and Management Center.

Started in 1991, the Center offers workshops on *Team Building for Furniture Manufacturers* and *Furniture Process Improvement*, and an applied research and industrial extension program for firms in the industry. Recent research projects include the virtual factory, robotic sanding, product development with parametric feature based computer-aided design (CAD), and kiln scheduling. Center staff and other university faculty, operating as cross-functional teams, work with individual furniture manufacturers on focused technical assistance projects lasting four to six months. These efforts result in new product development and process improvements in firms in the furniture industry.

Other institutions help the industry collectively with new product development, research and development, and training. UFAC, for instance, was founded by furniture manufacturers in 1974—albeit to forestall federal regulations of the industry—to set higher fire retardant standards for upholstery construction as well as to carry out research in new fabric use or product construction to achieve the same goal. Both the NHFA, a national trade association for furniture retailers, and IHFRA, an association for furniture wholesalers, offer training programs as well as resource pooling schemes for their constituencies. NHFA offers a sales training institute for mid-level management and strategic planning and financial management courses for top level CEOs in retail operations. IHFRA offers its members (most are individuals operating as self-employed, independent contractors) professional sales and related training through its Certified Home Furnishings Representative Program, designed with manufacturer input. In addition, NHFA goes further than any of the other organizations in conducting strategic planning for its industry. A decade ago, it produced “Profile 5” and “Profile 6,” consultant reports looking at the furniture store of the future. Currently, the organization is studying customer service performance in retail operations. The interviewed business associations in this category identified retail customer service as one of the weakest links in the entire furniture manufacturing and distribution chain.

The final and critical institutional actor comprising this complex is the IHFMA, the organization that operates and coordinates High Point’s furniture trade show. Held in April and October each year, the show is the largest furniture market in the world. As such, it draws in manufacturers and distributors from all over the U.S. and 80 countries. The AFMA, NHFA, and IHFRA all maintain their headquarters in High Point since they are sure to make contact with the bulk of their membership there at least twice a year at the market. In fact, the NHFA and IHFRA moved their operations from Chicago to High Point in the late 1980s in recognition of the growing preeminence of this trade show. The expanding institutional agglomeration in North Carolina represents a slow movement during much of this century of furniture manufacturers from the Midwest and Northeast to the south and the weakening influence of Chicago’s furniture mart at the same time.

(4) Institutional Gaps. The institutional strengths presented thus far include a multitude of specialist business associations that service the furniture supply chain from manufacturing to wholesale and retail, marketing (e.g., IHFMA), and research and design issues (e.g., UFAC, ASFD). Additionally, there are dynamic business associations that help firms learn new skills, design new products, and decrease transaction costs (e.g., through FMMC). Finally, there is an institutional agglomeration of “national” business associations in North Carolina that has produced significant local economic development benefits for firms in that state.

However, the lack of such institutional clustering in other furniture-producing states has weakened the furniture manufacturing support systems there. Therefore, a key gap is the absence of institutions (such as those in High Point) servicing other furniture-making centers in the industry, such as in Mississippi, Tennessee, or other Appalachian

states. Furniture manufacturers in Mississippi, for example, which represent the second largest concentration of furniture producers in the Appalachian states in terms of employment, do not have a local or state association to serve their needs but use the “national” associations in North Carolina. They have not influenced the state’s MEP agency to target specialized services for their industry as have their competitors in North Carolina.⁵³ In this situation, an institutional actor with a state or local-level focus, such as a non-profit development organization, a local or state governmental agency, or local business association could bring local manufacturers together for information-sharing and joint problem-solving as has been done in High Point. Local institutions would offer firms a venue to meet more frequently than twice a year and at less cost and difficulty for the small firm especially. Local associations may also be in a better position to influence state-level economic development efforts—a critical policymaking level in this age of federal devolution.

Given this institutional vacuum, the Community Development Foundation (CDF), a sub-state non-profit entity in Tupelo, Mississippi, has begun to organize this industry. The CDF is one of the original Tennessee Valley Authority community organizations. The organization carries out a range of social and economic development services for a two-county area. Its promotion of the Tupelo Furniture Market and provision of other services to the furniture industry stimulates cooperation between furniture firms there. Another example of a non-profit networking organization is the Appalachian Center for Economic Networks (ACENet)—in Athens, Ohio. It has organized a network of furniture manufacturers in its local area. ACENet also organizes inter-firm networks and support services (e.g., incubator space) for other critical local industries—such as specialty food products. These networks have been able to create new products and move into new niche markets through the joint efforts of member firms.

Another gap in the furniture sector is in the area of production labor training. Associations exist to train, collectively organize, and provide benefits to other “workers” in this complex (e.g., IHFRA and ASFD), but attention to training for production workers is inconsistent. None of the associations interviewed mentioned any involvement or interest in undertaking training for furniture workers, although training of managerial and design labor takes place through the connection to North Carolina State University. On the other hand, the Catawba Valley Community College operates a highly regarded Furniture Technology Division that provides training in furniture design and production to manufacturing workers and operates in conjunction with the NCMEP. Several leading manufacturers provide scholarships to students at the college and groom them for jobs.⁵⁴ None of the interviewed business associations in the furniture industry mentioned direct support for this program. Outside North Carolina, specialized training for furniture workers is even scarcer. Although worker training is important for some manufacturers, it is an underdeveloped or less critical issue for these business associations and their membership collectively.

Lumber and Wood Products

The institutional make-up of the lumber/wood products industry is profiled first in this section. In terms of scope, the lumber/wood products industry and the textile industry represent sectors that are institutionally more similar to the Japanese case. Both industries consist of large corporate and small, family-owned firms but are organized substantially by very big, influential, and broad-based institutions operating at the national level. These institutions headquarter in Washington where they exhibit a “corporatist” profile in the sense of large corporations (accompanied by some that are smaller members) that maintain a focus on federal government policies. Regional and/or state associations exist to work with manufacturers closer to their point of production. These regional associations may stimulate local-level development in their industries, depending on the functions they provide. Association performance can be critical in economic development, and these regional associations vary widely in the range of functions they offer member firms and their ability to stimulate greater competitiveness and adoption of best practices in their respective industries.

(1) The Wood Products Industry in the Appalachian Region. In the thirteen states comprising the Appalachian region, wood and forest products manufacturing (SIC 24) totals about 40 percent of SIC 24 jobs nationally and is concentrated in several states, both in terms of size (1994 employment) and state location quotient. These include:

	<u>Percent of U.S. SIC 24 Jobs</u>	<u>State Location Quotient</u>
North Carolina	6.0 percent	2.0
Alabama	4.8 percent	3.2
Georgia	4.8 percent	1.6
Pennsylvania	4.1 percent	0.9
Mississippi	3.6 percent	4.1
Virginia	3.4 percent	1.4

Looking at just the ARC portion of these states, Kentucky and Ohio also show high location quotients (of 3.2 and 3.3, respectively) along with the states already mentioned. This suggests that wood/forest product jobs are highly concentrated in the Appalachian counties of these states versus other industries (see Figure 7 for detailed data). However, wood products jobs in the Appalachian counties total only about 15 percent of all such jobs nationally.⁵⁵ Wood products firms are much smaller than most manufacturers nationally. Whereas 81 percent of the establishments in this industry employ fewer than 20 workers, only two-thirds of all manufacturers do so nationally. Only one percent of wood products plants employ 250 workers or more, compared with three percent of all manufacturers in the U.S which employ 250 workers or more.

**Figure 7 - Appalachian States Ranked According to Employment
in Lumber and Wood Products (SIC 24)**

INDUSTRY IN THE STATE			
	Empt.	As % of U.S. Empt.	LQ*
United States	732,400		
North Carolina	43,771	6.0%	2.0
Alabama	35,425	4.8%	3.2
Georgia	34,963	4.8%	1.6
Pennsylvania	30,068	4.1%	0.9
Mississippi	26,060	3.6%	4.1
Virginia	24,692	3.4%	1.4
Ohio	23,856	3.3%	0.7
Tennessee	21,006	2.9%	1.3
South Carolina	14,878	2.0%	1.4
New York	13,507	1.8%	0.3
Kentucky	12,624	1.7%	1.3
West Virginia	8,466	1.2%	2.2
Maryland	4,386	0.6%	0.3

INDUSTRY IN APPALACHIA ONLY			
	Empt.	As % of U.S. Empt.	LQ*
United States	107,954		
Alabama	21,705	3.0%	2.9
Pennsylvania	20,448	2.8%	1.4
Ohio	10,485	1.4%	3.9
Tennessee	10,316	1.4%	1.6
North Carolina	8,570	1.2%	2.1
West Virginia	8,400	1.1%	2.2
Mississippi	8,123	1.1%	6.1
Kentucky	5,623	0.8%	3.2
Georgia	5,088	0.7%	1.1
Virginia	3,535	0.5%	2.6
New York	3,101	0.4%	1.2
South Carolina	1,880	0.3%	0.6
Maryland	680	0.1%	1.2

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).

SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

(2) Institutional Scope. In terms of institutional scope, several organizations represent divisions of the industry nationally with headquarters in Washington—close to federal agencies, Congress, and each other (see Figures 8 and 9). This contrasts with the furniture sector which has very few trade associations in Washington. For instance, one such trade association is the highly diversified American Forest and Paper Association (AF&PA); it represents firms throughout the U.S. in the related forest, paper, and wood products industries. These companies grow, harvest, and process wood; they make pulp, paper, and engineered and traditional wood items for sale to a variety of industrial users and individual consumers. AF&PA estimates its member firms produce more than eight percent of the nation's total manufacturing output. Organized into separate sub-organizations, such as the American Wood Council for the wood products section of this diversified industry, AF&PA represents broad groupings of peer firms that may (e.g., forestry and paper) or may not be connected in the supply chain (e.g., wood products versus paper).

AF&PA is a horizontally and vertically integrated trade association. Given its size and preeminence in these related sectors, the organization includes some small but mostly very large corporate actors. It is seen by other trade associations as existing primarily to lobby the federal government and to set standards for the industry—for instance, by working with building code organizations to facilitate increased use of wood in construction. (It is also seen as dominated by the paper industry, according to one person interviewed. Hence, the issues of the wood products industry may get lost.) AF&PA's Wood Council coordinates its activities with regional groups—such as the Southern Forest Products Association (SFPA)—and nationally-oriented associations representing specialized niche markets (e.g., the Structural Board Association, the Wood Truss Council of America). Until the present, its activities at a local/regional level have been minimal.

However, the organization is currently initiating the organization of state member groups, or planning to work through existing state organizations, to facilitate implementation of its Sustainable Forestry Initiative described in detail below. This model of top-down policymaking and fostering the adoption of production standards by smaller firms in regional settings through a set of subsidiary organizations parallels the preferred supplier networks that major American manufacturers are copying from Japanese corporations. Increased performance is stimulated by large firms from the top-down, or national center, in much of this industry.

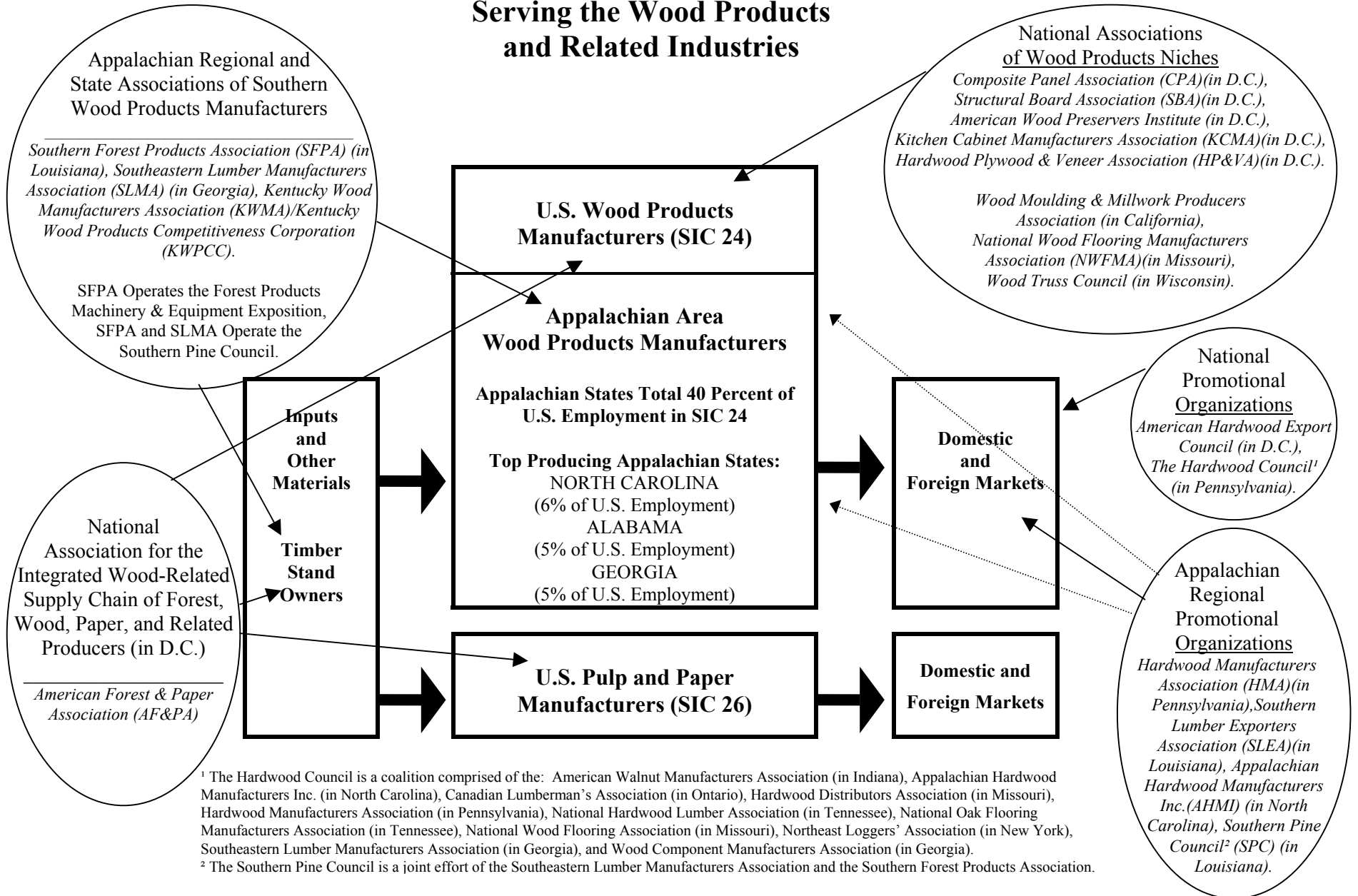
The woods products industry is also represented by a host of nationally oriented business associations that include all (small and large companies) in a single niche product area. Hence, these are national peer organizations—many of whom are headquartered in the Washington, D.C. area presumably to influence the federal

**Figure 8 -
Institutional Framework for Select Inter-firm Partnerships
in the Appalachian Wood Products Industry**

ORGANIZATIONAL SCOPE	1. Size of member firms		2. Industries of member firms		3. Location of member firms				
ORGANIZATIONAL FUNCTION	<i>Smaller</i>	<i>vs.</i>	<i>Larger (or All Firms)</i>	<i>Peers</i>	<i>vs.</i>	<i>Supply Chains</i>	<i>Local/regional Cluster</i>	<i>vs.</i>	<i>Dispersed</i>
1. Clarifying public and private sector roles. Increasing private property rights, improving government performance and infrastructure, lobbying.	SLMA KWMA		AF&PA SFPA	SLMA SFPA KWMA		AF&PA	SLMA SFPA KWMA		AF&PA
2. Coordinating markets. Increasing control over input and output markets (including resource pooling schemes), increasing member information about markets, limiting or redirecting productive capacity collectively (also including searching for new, export markets).	SLMA KWPCP/ KWMA		AHMI AHEC SPC HMA SLEA THC	AHMI SPC HMA SLMA KWPCP /KWMA		SLEA AHEC THC	SLMA AHMI SPC HMA SLEA KWPCP/ KWMA		AHEC THC
3. Upgrading skills and productive capacity/technology. Developing management and workers skills, diffusing new technologies, improving product/production process quality (e.g., by enacting higher standards).	SLMA KWPCP/ KWMA/ KTS		AF&PA SFPA	SLMA SFPA KWPCP /KWMA /KTS		AF&PA	SLMA SFPA KWPCP/ KWMA/ KTS		AF&PA

ORGANIZATIONAL SCOPE	1. Size of member firms		2. Industries of member firms		3. Location of member firms	
ORGANIZATIONAL FUNCTION	<i>Smaller</i>	<i>vs. Larger (or All Firms)</i>	<i>Peers</i>	<i>vs. Supply Chains</i>	<i>Local/regional Cluster</i>	<i>vs. Dispersed</i>
4. Promote R&D and new product development. Promoting research and development, new product development, and basic research.	KWPCP/ KTS	AF&PA	KWPCP /KTS	AF&PA	KWPCP/ KTS	AF&PA
5. Coordinating inter-firm relationships. Increasing efficiency in supply chains, coordinating peer firms relationships, acting as lead organizer for group (e.g., by setting up inter-firm relationships or moderating conflicts among firms).	SLMA KWPCP/ KWMA	AHEC THC SLEA AF&PA	SLMA KWPCP /KWMA	AHEC THC SLEA AF&PA	SLMA KWPCP/ KWMA	AHEC THC SLEA AF&PA
6. Conducting strategic planning for relevant industry(s). Planning for future changes in markets, technologies, labor and training needs, and product trends.	SLMA KWPCP/ KWMA		SLMA KWPCP /KWMA		SLMA KWPCP/ KWMA	
7. Upholding labor standards and social benefits. Setting wage or benefit standards and/or providing other social supports for workers.						

Figure 9 - Relationships Among Organizations Serving the Wood Products and Related Industries



government. They include such organizations as the Kitchen Cabinet Manufacturers Association; the Hardwood Plywood and Veneer Association; and the Composite Panel Association. Some such organizations may be located close to their point of production, such as the National Wood Flooring Association in Manchester, Missouri.⁵⁶

In contrast to these nationally oriented organizations, there are several regional and sectoral business associations. At least one of these—the Southeastern Lumber Manufacturers Association, or SLMA—was started in the 1960s to offer a collective voice exclusively to smaller firms in the wood products industry. This association, headquartered in Forest Park, Georgia, represents over 300 independent (i.e. not publicly traded) manufacturers in 16 states in the Southeast. Its membership is restricted to companies employing fewer than 500 workers—most are family-owned sawmill operations. The association’s biggest member company currently employs about 220 workers. Thus, as a representative of the association stated—SLMA does not include “Georgia-Pacific . . . [We] are not big business.” This is one of the few associations contacted (either by phone or internet) with an exclusive smaller-firm focus—much as some Italian and German associations operate today (another serves the carpet industry in Dalton, Georgia—as profiled below). The state MEP programs, of course, target small- and medium-sized manufacturers (those under 500 workers). However, only a few target the wood products industry specifically (e.g., Kentucky and North Carolina). The SLMA concentrates on firms in the same sector—although it allows suppliers to this industry to join as associate members. This is a practice most associations encourage—which may be critical since the second most important source of strategic information for manufacturing firms in the Appalachian region is through suppliers.⁵⁷

Another Appalachian region business association in the wood products industry is the Southern Forest Products Association (SFPA is headquartered in Kenner, Louisiana). SFPA’s members are located in a similar swath of ten southern states—as are the firms belonging to SLMA. Its membership, however, ranges from some of the largest international companies to the very small family-run operations. Essentially a slightly diversified peer organization, its membership includes only firms producing products of southern pine (the organization was named the Southern Pine Council until the 1960s). About 70 companies comprise its active and affiliate membership (i.e. sawmills, and companies producing wood components, laminates, or treated products). Adding the associates that supply these firms with services or products brings the total membership to around 200. Hence, SFPA is a “large-firm” version of SLMA.

Other regional associations exist with duplicate membership areas—for example, the Appalachian Hardwood Manufacturers Institute (AHMI) in North Carolina, the Hardwood Manufacturers Association (HMA) in Pennsylvania, Southern Lumber Exporters Associations (SLEA), and the Southern Pine Council (a joint effort of the SLMA and SFPA) in Louisiana. But these associations provide a much narrower set of functions to the industry—that is, they exist almost exclusively for product promotion with potential wood products users—who are located either domestically or abroad. The Hardwood Council is a national umbrella group or coalition of ten such business

associations—that also exists exclusively to conduct promotional marketing activities.⁵⁸ The American Hardwood Export Council (AHEC), in Washington, D.C. is the national version of the SLEA.

All these regional organizations have, however, been still too dispersed in membership to exert much influence at the state level in the funding and targeting of state and local level industrial extension activities. State or local-level associations are required here, as Kentucky's Wood Products Competitiveness Corporation (KWPC) discovered. KWPC is a non-profit organization that the state legislature created at the same time (in 1994) it endorsed the Kentucky Technology Service (KTS)—the state MEP program. The two organizations partner in providing extension services to the wood products industry. One-third of KTS's engineers are specialists in the wood products industry, and the cost of their salaries is shared by KTS and KWPC.

The legislation establishing KWPC was spearheaded by a small group of wood industry leaders. Since KWPC's founding, it has helped this group formally organize itself as the Kentucky Wood Manufacturers Association (KWMA). KWPC jointly works with this association to organize annual meetings of the industry, to market its short course series and technical assistance services, to initiate benchmarking activities among firms in the industry, and to organize cooperative health care and workers compensation insurance programs. KWPC also works cooperatively with other existing business associations—the Kentucky Forest Industry Association, and occasionally the SFA and the AF&PA. It also creates smaller networks of wood products manufacturers—in conjunction with the State Cabinet of Economic Development's Networking Initiative—to encourage joint contracting and marketing activities among groups of firms in the industry.

(3) Institutional Functions. How do these various organizations differ in regard to the functions they provide their member firms? Do any organizations facilitate adaptive cost efficiencies, new product development, skill upgrading, and research and development among companies? As already suggested, several organizations exist almost exclusively for product promotion and marketing activities: The AHMI, the HMA, the SLEA, the Hardwood Council, and the AHEC (refer again to Figures 8 and 9). Other associations, representing wood product manufacturers, financially support these industry-wide marketing councils.

The marketing councils engage in activities such as developing the Southern Pine Council promotional material on the benefits and uses of wood (presented online, as association publications, and as press releases). They also offer a variety of educational programs and construction manuals for end-users groups (architecture and engineering firms, builders, lumber retailers, and building code departments). Topics include engineered wood systems or marine construction, publishing on-line or hard copy product guides and members directories for use by wood-users, statistically tracking industry shipments and market trends, participating in the trade shows of user groups (e.g. The National Association of Home Builders), and conducting overseas trade

missions. AHEC, representing “the committed exporters among U.S. hardwood companies and all the major U.S. hardwood product trade associations” goes so far as to maintain association offices in Tokyo, Osaka, London, Hong Kong, Mexico City, and Seoul to service the global community of potential wood user groups and consumers.⁵⁹

These marketing and promotional activities are often relatively passive in the sense that they promote wood products and wood species (e.g., southern pine) generically and do not help individual plants with their marketing efforts nor actively help them coordinate output markets and production capacity. This compares with the High Point Furniture Market where individual companies exhibit their products and learn about market trends from each other. However, some of these associations are aggressive in locating new export markets overseas—something that many associations rarely do. And, since these promotion and marketing associations arose out of collaboration among these other woods products manufacturing associations, they foster increased collaboration among all sectors of the industry similar to the way that the High Point marketing association does.

A more proactive marketing approach is that offered by Kentucky’s KWPC. It is assisting a network of 16 firms to cooperatively market their products and increase government contracting among network members. Other association activities that strengthen traditional transaction cost efficiencies include, of course, lobbying at federal and state levels and protecting private property use from excessive government regulation (especially relevant to the timber stand owners). Almost all associations contacted do some lobbying.

Moving into the realm of adaptive cost efficiencies, however, we see a division of the industry into top-down (and nationally centered) and bottom-up (regionally and locally focused) efforts. Three such efforts are profiled here. One top-down, national effort is the Sustainable Forestry Initiative promoted by the AF&PA. The goal of this initiative is to promote forest harvesting practices that are environmentally sensitive (including reforestation, the protection of wildlife habitats, the limitation of water pollution, restrictions on clear cutting, and the promotion of diversity in forest environments), while also protecting the private property rights of timber stand owners. This initiative combines research into new production methods, such as forest harvesting, training in such methods for loggers, and an enforcement mechanism for firm compliance. Since 1996, the AF&PA has denied continued membership in the association for all firms that have not complied with its implementation guidelines, and it promotes the development of state-level standards (to reflect different forest conditions) and reporting of compliance. The AF&PA also compiles an annual report on membership compliance that is monitored by an independent body of experts, and it convenes a national forum of loggers, landowners, and senior industry representatives to monitor progress semi-annually.

To the extent that these policies result in new forest-harvesting practices, greater productivity, lower waste, more intensive resource use, and enhanced production by

loggers, they promote adaptive cost savings among a segment of the wood products industries. Furthermore, the AF&PA is stimulating the adoption of these new practices by working with existing state groups—or organizing such groups where they do not exist—to promote upgrading the skills and training of loggers, landowners, contractors, suppliers, and wood resources. Hence, this national association is involved in increasing the capacity of collective problem solving and training among firms at the state level through its centralized policies. In this way, the national association is becoming an “institutional entrepreneur” or organizer of institutional capacity at the local level.

Another effort at collective problem solving has been initiated at the regional level by the SLMA among its constituency of small, family-owned sawmill operators. In contrast to other organizations that primarily aim to expand demand for member products or protect member interests, this organization’s mission is to “aid and assist its membership in running a more profitable business.”⁶⁰ Hence, while some of its activities are fairly standard (e.g. lobbying at the federal level for estate tax appeal or utility deregulation), others are not in that they promote lower collective costs and improved performance among member firms.

The SLMA, for instance, offers a host of resource pooling schemes for its membership of small business owners (e.g. estate planning services, a brokering service to allow members to buy and sell equipment, health insurance). It has recently begun organizing problem-solving groups and to conduct strategic planning for the industry to enhance member competitiveness. The problem solving groups—“managers’ roundtables”—consist of about a dozen manufacturers each. They meet regularly to talk about ways to upgrade their businesses collectively and solve common concerns. The first group has just started; staff intentionally chose to mix manufacturers from different states to enhance collaboration and soften competitive divisions among these manufacturers. These roundtables emerged out of another association activity; the SLMA initiated a “competitive assessment survey” developed by an outside consultant to grade each member firm according to “best practices” for the industry on a range of factors. In addition, a recent initiative that emerged from strategic planning efforts was to develop an on-line suppliers directory of its members’ products for use by potential customers.

At the local or statewide level, Kentucky’s KWPC also has established resource pooling schemes for insurance and a smaller network of firms to set up joint contracting initiatives. It organized the Kentucky Wood Manufacturers Network of wood products craft-shops to cooperatively own and operate a shared manufacturing facility and to emulate a joint manufacturing process. KWPC also conducts strategic planning for the industry as a whole in conjunction with the State’s Cabinet on Economic Development.

(4) Institutional Gaps. The institutional strengths noted in this industry case include a host of nationally and regionally oriented business associations; a rich array of product marketing and promotion organizations and activities at the national and regional levels; and the beginning of some initiatives in collective research and technology

dissemination. However, compared to the other industries profiled, associations in the lumber and wood products industry seem the least involved in collective research efforts, training and new technology. In regard to research and technology dissemination, three efforts were highlighted: the top-down, nationally oriented Sustainable Forestry Policy of the AF&PA; the regionally-focused collective small-business problem-solving groups of the SLMA; and the bottom-up and statewide focused wood products networks created by the KWPC in Kentucky. These are relatively independent efforts. In addition, the SFPA convenes the biannual Forest Products Machinery and Equipment Exposition—the largest such show in North America—much as other associations host machinery and suppliers expositions servicing their industries. This may be less glamorous than hosting new technology projects, but machinery and equipment vendors may be the best way to link firms with the latest technology.⁶¹

Like in the furniture industry, no linkage or collaborative efforts with union or production labor were mentioned. Issues related to production labor in sawmills or wood component manufacturers have largely been ignored because of the low skill content, according to one interviewee. One training program to improve the activities of loggers, some of the most skilled personnel in the complex, is being promoted and run by the AF&PA in conjunction with state logging and forestry groups. Another is being implemented by the KWPC for wood products manufacturers in Kentucky. Patterned after Oregon's Secondary Wood Products Training System, Kentucky's Wood Manufacturing Technology curriculum is offered through community colleges and the statewide Area Technology Centers, and is supported by a new scholarship program for trainees.

In summary, institutional gaps experienced by this sector include the lack of many local or state-level associations to influence and/or work with state industrial extension services, except in Kentucky and North Carolina; a relatively low level of collective research and new technology initiatives; and few industry workforce training programs, except in Kentucky.

Textiles

Whereas efforts at promoting adaptive cost savings among manufacturers in the lumber/wood products industry are coming from both regional small-firm and national corporate actors, in textiles many of the efforts at stimulating research and development and improved production methods have come from the top-down and center. These efforts in the textile industry are substantial, compared to the other industries profiled, and represent a major corporatist effort not likely to be replicated given federal fiscal restraints today. At the same time, the textile industry is richly served at the local level by several state textile associations. However, on the whole these associations engage in traditional association lobbying activities that promote transaction cost savings at best. In contrast, one local set of business associations serving the carpet industry in northwest Georgia has taken a more proactive role to deal with competitiveness issues that is having an impact on regional development.

(1) Textile Production in the Appalachian Region. The textile industry is centered in the U.S. South. North Carolina alone provides almost a third of all textile jobs in the country and 75 percent of the industry's total business volume.⁶² Adding Georgia, South Carolina, Alabama, and Virginia—in order by size of employment concentration—brings the employment total nearly 70 percent.

	<u>Percent of U.S. SIC 24 Jobs</u>	<u>State Location Quotient</u>
North Carolina	29.7 percent	9.9
Georgia	15.8 percent	5.3
South Carolina	12.6 percent	9.0
Alabama	6.4 percent	4.2
Virginia	4.8 percent	1.9
Pennsylvania	3.6 percent	0.8

Much of these jobs are concentrated in the Appalachian portion of these states, as can be seen by looking at the location quotients for the ARC counties (Figure 10). For instance, textile employment posts location quotients of 15.2 for Georgia, 13.4 for North Carolina and 12.2 for South Carolina. Textile employment in all counties comprising the ARC region equal one-third of all such jobs in the U.S. The textile industry consists of larger firms than average for all manufacturing nationally. For instance, 11 percent of textile establishments in the U.S. employ 250 workers or more (and only 51 percent employ fewer than 20); this compares with 3.6 percent and 67 percent, respectively, for all American manufacturers.

(2) Scope and Functions of Local/Regional Institutions. Mill owners in each of the key textile producing states joined together in cooperative associations in the first decade of this century. These state textile associations exist today in North Carolina, South Carolina, Georgia, and Alabama, and provide a variety of services to textile and related firms. (Refer to Figures 11 and 12 for the remainder of this section.) In the main, these organizations lobby their respective state legislatures and agencies, acting as the state NAM (National Association of Manufacturers) affiliates but only for firms that are in the textile and related industries. One state association, the South Carolina Textile Manufacturers Association, has recently changed its name to the South Carolina Manufacturers Alliance; it opened its membership to all manufacturers in the state last year and now is a state NAM affiliate. It felt that the same issues it lobbied for previously were important to all manufacturers in the state and, that as an expanded organization, it would be a stronger voice for these issues. This organization had never been involved

**Figure 10 - Appalachian States Ranked According to Employment
in Textiles and Related Products (SIC 22)**

INDUSTRY IN THE STATE				INDUSTRY IN APPALACHIA ONLY			
		As % of U.S. Empt.	LQ*			As % of U.S. Empt.	LQ*
	Empt.			Empt.			
United States	582,188			United States	200,117		
North Carolina	172,933	29.7%	9.9	Georgia	57,744	9.9%	15.2
Georgia	92,251	15.8%	5.3	North Carolina	42,665	7.3%	13.4
South Carolina	73,459	12.6%	9.0	South Carolina	32,104	5.5%	12.2
Alabama	37,271	6.4%	4.2	Alabama	30,704	5.3%	5.2
Virginia	27,814	4.8%	1.9	Tennessee	13,275	2.3%	2.7
Pennsylvania	20,868	3.6%	0.8	Pennsylvania	10,092	1.7%	0.9
Tennessee	18,689	3.2%	1.5	Virginia	6,267	1.1%	5.9
New York	17,076	2.9%	0.4	Kentucky	2,341	0.4%	1.7
Kentucky	8,711	1.5%	1.1	Mississippi	1,537	0.3%	1.4
Mississippi	4,369	0.8%	0.9	West Virginia	1,257	0.2%	0.4
Ohio	3,727	0.6%	0.1	Maryland	890	0.2%	1.9
Maryland	1,458	0.3%	0.1	New York	757	0.1%	0.4
West Virginia	1,141	0.2%	0.4	Ohio	484	0.1%	0.2

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

with the individual processes of its members; hence, its activities may have created transaction cost savings for firms but never assisted in the area of upgrading the processes, products, or skills of the firms. The other state textile associations partner with the state NAM-affiliates and other lobbying organizations (e.g., state chambers of commerce, trial lawyers associations, trucking associations) on state issues related to taxes, environmental regulations, hazardous waste, safety and human resources, unemployment insurance and workers compensation, health care, and so forth. These associations also encourage informal networking among their member firms and offer educational forums on topics of general business interest.

Some issues facing the industry in the beginning of this century were and still are dealt with collectively by some of these state associations. Other issues have now been taken over by large, corporate mills or smaller mills individually and/or have been transferred to the national association, the American Textile Manufacturers Institute (ATMI). For instance, Georgia mill owners were concerned with unfavorable freight rates for the southern manufacturers. They formed what is now known as the Georgia Textile Manufacturers Association (GTMA) and employed a traffic expert to look after their interests. In the 1960s, this association ran a collective traffic service for the mills (through the Georgia-Alabama Textile Traffic Association).⁶³ This traffic association disbanded in the 1980s. Today, most mills offer Just-in-Time delivery to their customers but plan the logistics function on their own.

Each state textile association also organized and operated an annual Fiber Buyers meeting for cotton growers and other fiber producers to meet in a collective and planned fashion and transact business with the textile mill users. The state associations got together eight years ago to hold this meeting jointly; recently, the state associations turned this event over to the national textile association (the ATMI) for a variety of reasons. One state association representative said that since textiles was a national industry, “the event ought to have a ‘signature’ to it.” The representative added that the ATMI brought stature to this event as well as a broader range of national and international contacts (for instance, the National Cotton Council started to collaborate in the event). Having the national association absorb the event was also thought to be more cost effective. This implies that regionally based business associations may not have the finances or political clout to carry out major programs for an industry that increasingly is characterized by consolidated mills and corporations. This begs the question of what activities are most appropriate for local or regionally based business associations versus those that are large and serve a national constituency that includes major corporations. This issue is addressed in the conclusion.

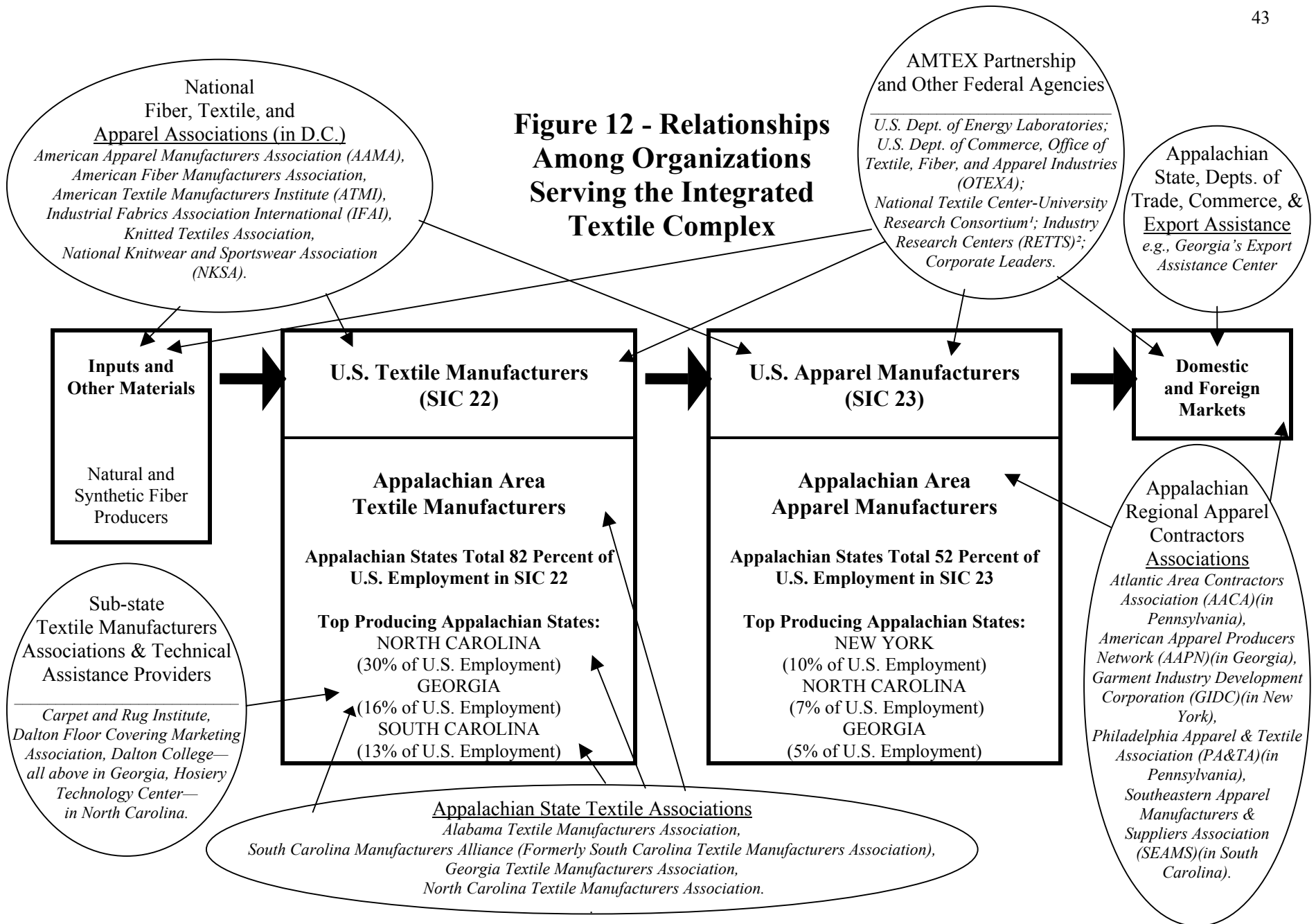
Issues that have been retained by some of the state textile associations, in addition to lobbying, include offering financial support and collaborating with state technical schools for worker training. For instance, the Georgia Textile Manufacturers Association started the Textile Education Foundation in 1943 to “promote educational and career

**Figure 11 -
Institutional Framework for Select Inter-firm Partnerships
in the Appalachian Textile Industry**

ORGANIZATIONAL SCOPE	1. Size of member firms		2. Industries of member firms		3. Location of member firms	
ORGANIZATIONAL FUNCTION	<i>Smaller</i>	<i>vs. Larger (or All Firms)</i>	<i>Peers</i>	<i>vs. Supply Chains</i>	<i>Local/regional Cluster</i>	<i>vs. Dispersed</i>
1. Clarifying public and private sector roles. Increasing private property rights, improving government performance and infrastructure, lobbying.	DFCMA	ATMI ATMA GTMA NCTMA SCMA	ATMA GTMA NCTMA DFCMA	ATMI SCMA	ATMA GTMA NCTMA SCMA DFCMA	ATMI
2. Coordinating markets. Increasing control over input and output markets (including resource pooling schemes), increasing member information about markets, limiting or redirecting productive capacity collectively (also including searching for new, export markets).	DFCMA	ATMI	DFCMA	ATMI	DFCMA	ATMI
3. Upgrading skills and productive capacity/technology. Developing management and workers skills, diffusing new technologies, improving product/production process quality (e.g., by enacting higher standards).		AMTEX ATMI GTMA/TEF NCTMA/ Belmont College Dalton College	GTMA/TEF NCTMA/ Belmont College Dalton College	AMTEX ATMI	GTMA/TEF NCTMA/ Belmont College Dalton College AMTEX Research Univs.	AMTEX ATMI

ORGANIZATIONAL SCOPE	1. Size of member firms		2. Industries of member firms		3. Location of member firms	
ORGANIZATIONAL FUNCTION	<i>Smaller</i>	<i>vs. Larger (or All Firms)</i>	<i>Peers</i>	<i>vs. Supply Chains</i>	<i>Local/regional Cluster</i>	<i>vs. Dispersed</i>
4. Promote R&D and new product development. Promoting research and development, new product development, and basic research.	AMTEX		AMTEX		AMTEX Research Univs.	AMTEX
5. Coordinating inter-firm relationships. Increasing efficiency in supply chains, coordinating peer firms relationships, acting as lead organizer for group (e.g., by setting up inter-firm relationships or moderating conflicts among firms).	DFCMA	AMTEX ATMI	DFCMA	AMTEX ATMI	DFCMA	AMTEX ATMI
6. Conducting strategic planning for relevant industry(s). Planning for future changes in markets, technologies, labor and training needs, and product trends.	OTEXA AMTEX		OTEXA AMTEX		OTEXA AMTEX	
7. Upholding labor standards and social benefits. Setting wage or benefit standards and/or providing other social supports for workers.						

Figure 12 - Relationships Among Organizations Serving the Integrated Textile Complex



¹ Universities affiliated with the National Textile Center include: Auburn University (in Alabama), Clemson University (in South Carolina), Georgia Institute of Technology (in Georgia), North Carolina State University (in North Carolina), Philadelphia College of Textiles & Science (in Pennsylvania), University of Massachusetts-Dartmouth (in Massachusetts).
² AMTEX Industry Research Centers include: Clemson Apparel Research (CAR) (in South Carolina), Cotton Inc.(in North Carolina and New York), Textile/Clothing Technology Corp. (TC³)(in North Carolina), Institute of Textile Technology (IIT)(in Virginia), Textile Research Institute (TRI)/Princeton (in New Jersey).

opportunities to prospective textile students”.⁶⁴ This foundation has spent several million dollars on this project in its lifetime—it currently budgets about one-quarter of a million dollars each year—for scholarships, capital improvements, faculty support, machinery and equipment at Georgia Tech and Southern Tech. The North Carolina Textile Manufacturers Association (NCTMA) has had a similar relationship with the community college system in its state. In 1949, the state and NCTMA co-funded Belmont College to provide training for skilled workers in the textile plants near one of the largest industrial concentrations in the state. A decade ago, the state community college system absorbed the Belmont facility; now faculty from Belmont can offer textile related training to workers and firms throughout the state at one of the 59 other community college sites as well. This funding support from the state-level textile associations is a drop in the bucket compared to textile funding from the national government (described below). However, it may be that the business-community college link is most appropriately carried on at the regional or local level—much like the furniture association’s support for state college efforts in technical assistance in North Carolina.

It is important to highlight a highly local actor, the Dalton Floor Covering Marketing Association, that has taken a more proactive role than other local associations in helping its 175 member firms solve their problems collectively. Of the institutions profiled in this section, this is by far the most locally embedded association—it operates at the sub-state level in Dalton—the center of the U.S. carpet industry. The association was formed in 1979 to promote smaller companies in the industry (the Carpet and Rug Institute, also in Dalton, works with larger companies). For instance, many smaller mill owners—i.e., those employing fewer than 30 workers—cannot afford the time or expense to travel to the Greenville, South Carolina, textile equipment and suppliers show. The association decided to bring such suppliers to them by hosting its own suppliers and equipment show in Dalton every other year. This show attracted 3,000 attendees and 1,000 exhibitors last year. The association also lobbied state and county officials to construct a trade center facility for these shows.

In smaller firms, the owner often carries out all management functions—he or she does not have an exporting department or sales representative. Therefore, the association also acts as sales representative for these companies at international/national trade shows where floor coverings are marketed. The association sent a representative to the world’s largest carpet show in Germany recently, accompanying staff from the State of Georgia’s Export Assistance Center. The state is currently developing a prototype “global” video-conferencing system—with U.S. Department of Commerce and ARC funding—to enhance the ability of smaller manufacturers to “talk” and negotiate via technological hook-up with potential customers at these overseas trade shows. Representatives from the association and the state are on hand with carpet samples from these companies to help forge this linkage. They also provide other assistance to smaller companies, helping them wade through the regulations, paperwork, and other requirements of exporting such as establishing local lines of credit.

Thus, the Dalton Floor Covering Marketing Association primarily helps its membership survive as smaller firms in an increasingly global marketplace with much larger firms that are concentrating their ownership. For instance, larger carpet mills have increasingly bought up the yarn mills for their own internal purposes. The loss of independent yarn companies can create supply difficulties for smaller carpet manufacturers without the activities of the association, which now help them to locate these supplies over greater distances. This association brings a regional and SME focus to its activities; however, certain pressures have caused it to expand beyond this membership base. Last year, for instance, the association broadened its sectoral membership base because it was not growing and felt it needed to continue providing cost effective pooled services (e.g., health and workers compensation insurance). It also does not maintain size restrictions on member firms, and a few of the largest corporations are also members (e.g., Shaw and Queen).

Another business association in Dalton, the Carpet and Rug Institute, services the same industry as DFCMA but targets all firms, large and small, in its efforts. It has been able to provide a network of firms that can jointly engage the state's MEP agency, Georgia Tech's Economic Development Institute, or EDI, in sector-wide projects. The EDI has not focused its work along sector-specific expertise, although the State of Georgia has in other of its programming. However, with an active sector-specific network in place—like the CRI—EDI's Dalton office can help the association move along some of its projects.

For instance, the two organizations have put together projects to collectively research and implement automated creeling technology, the use of textile waste as fill in roadbed construction, and wastewater treatment solutions for carpet plants. The EDI also wrote a Title V major source air permit for a model carpet mill for the CRI that other carpet plants could utilize to guide their own permit applications. The EDI receives funding from the State's Consortium for the Competitiveness in the Apparel, Carpet, and Textile Industries (CCAATI) to provide essential environmental research, extension, and support services to the Dalton-area carpet industry.

North Carolina's clustered hosiery industry also benefits from a highly organized and proactive business association—the Carolina Hosiery Association (CHA, formerly the Catawba Valley Hosiery Association). In past years, the CHA worked with the Catawba Valley Community College to create the Hosiery Technology Center (HTC) (described in greater detail below). Working in conjunction with the National Association of Hosiery Manufacturers (NAHM) and funded by the North Carolina state government's Alliance for Competitive Technologies (NC ACT), CHA produced a strategic plan for the hosiery industry in 1994.

(3) Scope and Functions of National Level Institutions. In contrast to these state and local textile associations is the American Textile Manufacturers Institute, or ATMI (refer again to Figures 11 and 12). This organization represents approximately 130 member firms that process about 80 percent of all textiles made in U.S. plants. The organization grew during the post-World War II period through a series of mergers. In 1949 there was a merger between the American Cotton Manufacturers (representing plants in the South) and the Cotton Textile Institute (with northern companies). Next, the organization merged with the

National Federation of Textiles (in 1958), the Association of Finishers of Textile Fabrics (in 1965), the National Association of Wool Manufacturers (in 1971), and the Thread Institute (in 1989).

ATMI considers itself “a coordinating force behind efforts of related trade associations and other organizations to obtain orderly international trade in textiles.”⁶⁵ Its objective is to allow its member firms to solve problems collectively at a national level and to act as the industry’s representative to federal agencies, Congress, and the news media. More recently, it has become involved in issues of competitiveness and foreign market access. It is also heavily involved in setting industry-wide standards and individual firm certification for environmental efforts by textile firms in their production processes.

Although much of the activity for stimulating textile firms to acquire new technologies and skills comes from the national level, a few exceptions exist. For instance, recently some state government technology programs have been implemented, namely North Carolina’s Alliance for Competitive Technology and Georgia’s Consortium on Competitiveness for the Apparel, Carpet, and Textile Industries (CCACTI). Dalton College also serves the carpet industry locally with technical assistance and research-support activities.

At the national level, several universities, national organizations (e.g., the ATMI, the American Apparel Manufacturers Association, and the Union of Needle Trades, Industrial, and Textile Employees),⁶⁶ the federal government (the Departments of Commerce, Energy, and Labor), and several key manufacturing companies started a host of new institutions. The purpose of these institutions is to promote basic research and technology diffusion in the integrated textile complex in order to enhance the competitiveness of a set of inter-linked industries. This complex involves the industries of fiber production, textile and apparel manufacturing, and soft goods distribution/retail, thereby serving more than one sector.

The first national-level institution for the integrated textile complex was the Textile/Apparel Clothing Corporation (TC²). TC² was started in 1979 after a conference was convened at the Harvard Business School to look at trade adjustment and competitiveness issues in the textile and apparel industries. Key academics (e.g., Professors John Dunlop and Frederick Abernathy), industry leaders (including Hart, Schaffner, & Marx; Burlington Industries; Milliken; Vanity Fair; and DuPont), union representatives (e.g., the Amalgamated Clothing and Textile Workers), and business associations (the AAMA and the ATMI) came together to form TC². The U.S. Departments of Commerce and Labor provided initial start-up support. TC², located in Cary, North Carolina, is an independent non-profit entity that focuses on research and development for automating the apparel industry. It operates a state-of-the-art training and manufacturing facility—the National Apparel Technology Center (NATC)—that demonstrates the use of the latest equipment and software for the apparel and soft goods industry. For instance, staff work on manufacturing projects using “agile” manufacturing technology, ergonomics, and computer simulation to show how to design, die, cut, and sew customized garments to industry representatives.

One such project—DAMA, or the Demand Activated Manufacturing Architecture Project—focuses on creating a set of technologies to promote “mass customization” in the apparel manufacturing process. The goal here is to cut manufacturing time in the apparel and soft goods supply chain in half. DAMA staff has mapped supply chains for several key products and is applying such technologies as computerized body scanning, digital cloth printing, and team-based modular manufacturing to produce “tailored clothing at ‘off-the-rack’ prices”.⁶⁷ DAMA and NATC staff teaches manufacturers about these new technologies and processes at their demonstration factory site, which utilizes equipment donated by industry leaders. They also offer formalized workshops and training programs—both for production workers and plant supervisors/management personnel. TC² currently obtains over \$3 million annually from the U.S. Department of Commerce and also raises support from fees for service.

Since TC², several other institutions serving the integrated textile complex were funded and/or started with federal subsidy. In the early 1990s, the American Textile Partnership was formed (AMTEX) to strengthen the competitiveness of firms in this complex through basic research. AMTEX is a collaborative research program involving industry representatives, the U.S. Department of Energy (DOE) and DOE laboratories, other federal agencies, and a consortium of universities. AMTEX aims to link the national scientific and engineering capacity to these interrelated industries by funding academic research through six “research education and technology transfer entities” (RETTs). These entities include Clemson Apparel Research (CAR), Cotton Incorporated (which focuses on natural fibers), Textile Research Institute (TRI, which focuses on manmade fibers), the Institute of Textile Technology (ITT, which works on textile manufacturing technologies), TC² (which works on apparel technologies), and the National Textile Center (NTC).

The NTC is a consortium of universities that carries out funded research for the fiber, textile, and apparel industries. This consortium includes Auburn University in Alabama, Clemson University in South Carolina, Georgia Institute of Technology, North Carolina State University, the Philadelphia College of Textiles and Science, and the University of Massachusetts at Dartmouth. A committee of industry leaders (e.g., from DuPont, Walmart, and J.C. Penney) and faculty jointly select project proposals to fund and oversee the implementation process. One such project at Georgia Tech, for example, involved altering the textile dyeing and bleaching process to eliminate pollutants; the results of this technological research project helped a specific company in North Carolina to remain in business by solving its environmental waste problems. This whole complex of institutions is coordinated, in part, by interlocking memberships on their respective Boards of Directors and is funded by the national government at a level of \$9 million this year. This concerted, national-level and institutionally rich effort bears close resemblance to Japanese technology policy and the overlap of industry leaders, business association representatives, and national agency heads on policy boards. As such, this institutional complex may not necessarily promote regional, state-level, or more localized industrial development. Its services are available to large corporations—as well as smaller producers—that may exhibit weaker ties to specific textile clusters within the Appalachian states.

(4) Institutional Gaps. The textile industry that is centered in several Appalachian states benefits from many institutional strengths. These strengths include an extensive set of state-level textile associations, and a multitude of national business associations that have stimulated the creation of several unique, federally supported research, technology, and educational institutions. Additionally, there are several highly proactive localized business associations that serve key niche areas, such as carpet production in Georgia and hosiery production in North Carolina. This industry exhibits a highly developed and federated structure of collective inter-firm organizations and other intermediaries. Nevertheless, there are several gaps in this institutional system.

First of all, the specialized federal-level efforts provided through the Department of Commerce may not always be coordinated with state or sub-state efforts. National business associations do not organize local level chapters. Therefore, national level assistance to the textile and related industries may not necessarily result in the development of certain under-developed regions and smaller firms. Impact on localized clusters of firms depends on the existence and foresight of lower level intermediary organizations. These vary greatly across the Appalachian region.

For instance, some state MEP and/or economic development agencies have targeted textiles for strategic planning and other specialized programming (e.g., North Carolina, Georgia) whereas other states have not (e.g., Alabama and Virginia). Statewide textile manufacturers associations serve four states (North Carolina, Georgia, South Carolina, and Alabama). However, many of these do not provide sufficient assistance to firms trying to increase their competitiveness. Hence, smaller textile firms that are often underrepresented in national, corporatist, and diversified business associations may receive less support from this set of institutions. One such organization in South Carolina has moved away from a sector focus. Its efforts take a more generalized approach to manufacturing issues that do not allow it to deal with the textile industry's specific competitiveness issues. All four state textile associations have also shed their marketing function to the national association (the ATMI) to gain greater national prestige for it. However, this weakens the development of state or sub-state textile clusters and collective inter-firm problem-solving capacity.

Some state or sub-state textile clusters have enhanced their competitiveness, spawning more localized economic development. These clusters are served by strong, proactive business associations that can lobby for state-provided and/or offer their own collective services. More localized clusters without such associations, however, are relatively under-served—much as furniture producers in Mississippi, for instance, or wood products producers outside of Kentucky.

Apparel

From the of the textile industry, we see that the apparel industry in the Appalachian region is well-served by a host of innovative, basic-research and training organizations that were initially organized and funded at the national level through AMTEX. This nationally organized consortium of research and development centers is predominantly sited within the

thirteen-state Appalachian region and includes such regional universities as Clemson, Auburn, Georgia Tech, and North Carolina State. DAMA, TC², and its demonstration factory are also located near apparel firms in North Carolina and much of the Southeast. Therefore, although the AMTEX institutions are “national” institutions—in terms of funding and the businesses associations associated with them—they provide a regional presence. It is unclear, however, the extent to which small apparel firms in the region use these state-of-the-art technology services.

Apparel firms in Appalachian states are also served by a set of large, nationally focused trade associations—the ATMI and AAMA. It is against this context of nationally focused institutions that one can compare the set of local or regionally focused apparel associations that would more likely involve the industry’s smaller firms. This comparison shows that the institutional structure serving apparel at this lower level is relatively weak—if almost non-existent—especially compared to the number of state and sub-state business associations in textiles. The weakness of apparel-related institutions at the local/regional level in much of Appalachia also contrasts with the institutions serving other apparel agglomerations in the U.S. In particular, the New York City region has an institutional agglomeration of business associations for the apparel industry much like North Carolina’s agglomeration in the furniture industry. Before profiling these local or regionally focused apparel institutions, the apparel industry in the Appalachian region is briefly described.

(1) Apparel Manufacturing in the Appalachian Region. Fifty-one percent of all jobs in the U.S. apparel industry in 1996 were located in thirteen states comprising the Appalachian region. This proportion is somewhat misleading since almost ten percent of all American apparel employment is lodged in the New York state—most outside the Appalachian counties and in the New York City metropolitan region. Segregating out the ARC-designated counties, about 16 percent of all apparel jobs originate in the true Appalachian region. The Appalachian states with the largest number of apparel jobs include:

	<u>Percent of U.S. SIC 23 Jobs</u>	<u>State Location Quotient</u>
New York	9.8 percent	1.5
North Carolina	6.8 percent	2.3
Georgia	5.4 percent	1.8
Tennessee	5.1 percent	2.4
Pennsylvania	5.2 percent	1.1
Alabama	4.5 percent	3.0

Of these states, however, Mississippi shows the highest apparel location quotient at 3.3 (Figure 13). Looking at the Appalachian counties within those states, we see that the Appalachian portions of Tennessee, Alabama, and Pennsylvania provide the largest number of jobs (at two to three percent of all U.S. apparel jobs each). Mississippi’s Appalachian

**Figure 13 - Appalachian States Ranked According to Employment
in Apparel and Related Products (SIC 23)**

INDUSTRY IN THE STATE				INDUSTRY IN APPALACHIA ONLY			
		As % of U.S. Empt.	LQ*			As % of U.S. Empt.	LQ*
	Empt.			Empt.			
United States	843,140			United States	136,127		
New York	82,774	9.8%	1.5	Tennessee	27,023	3.2%	3.7
North Carolina	56,979	6.8%	2.3	Alabama	19,626	2.3%	2.3
Georgia	45,662	5.4%	1.8	Pennsylvania	17,233	2.0%	1.0
Pennsylvania	43,673	5.2%	1.1	North Carolina	14,624	1.7%	3.2
Tennessee	43,006	5.1%	2.4	Georgia	12,936	1.5%	2.4
Alabama	38,279	4.5%	3.0	Mississippi	10,703	1.3%	6.9
South Carolina	28,333	3.4%	2.4	Kentucky	9,690	1.1%	4.8
Virginia	24,763	2.9%	1.2	South Carolina	8,446	1.0%	2.2
Kentucky	23,976	2.8%	2.1	Virginia	8,192	1.0%	5.3
Mississippi	23,907	2.8%	3.3	Ohio	3,254	0.4%	1.1
Ohio	13,817	1.6%	0.4	West Virginia	1,846	0.2%	0.4
Maryland	5,599	0.7%	0.4	New York	1,721	0.2%	0.6
West Virginia	2,109	0.3%	0.5	Maryland	833	0.1%	1.2

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.). SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

counties again show the highest concentration (a location quotient of 6.9), followed by Virginia (5.3), and Kentucky (4.8).⁶⁸

This means that for some Appalachian counties, apparel constitutes the most sizable manufacturing opportunity locally even though it represents a very small proportion of all U.S. apparel jobs. Kentucky is good example. The apparel sector there constitutes 18 percent of all manufacturing jobs in that state's Appalachian region, yet apparel firms there provide only 1.1 percent of all U.S. apparel jobs. Apparel firms—as part of the integrated textile complex that is highly concentrated in the states comprising the Appalachian region—are much smaller and more numerous than firms comprising the fiber and textile industries to which they are linked. For instance, two-thirds of all U.S. apparel establishments employ fewer than 20 workers, in contrast to half of all textile plants. There were 24,278 establishments in apparel in total in the United States in 1996, compared with about 6,400 establishments in textiles.

(2) Scope and Functions of National Level Institutions. As mentioned previously, the AAMA represents firms in the apparel industry nationally. ATMI also includes apparel firms in its ranks—primarily firms that are diversified textile and apparel manufacturers. (Refer to Figures 12 and 14 for the remainder of this section.) AAMA offices are in the Washington area, allowing it to carry out significant federal level lobbying activities. The approximately 300 member firms produce a range of apparel products—from tailored men's suits to hats and coats (but excluding footwear). These member companies represent more than 80 percent of all wholesale clothing produced in this country. These firms range from \$3 million in annual sales to over \$1 billion and employ around 600,000 workers in total. Although the AAMA represents the entire apparel industry, it does not include small contractors in its membership (e.g., firms employing fewer than 50 workers). Hence, certain regions of the country—like Los Angeles where a significant portion of custom-oriented apparel produced by craft firms originates—are not involved in this organization. A considerable number of apparel firms in the Appalachian states are also not served by the AAMA.

The AAMA carries out traditional trade association activities, such as advocacy on federal legislation, regulations, and foreign trade policy. It also conducts other activities that influence adaptation of its member firms to new markets and products. For instance, its Committee on Apparel Quality helps set standards for quality control and helps its members to meet these standards. The association also holds educational seminars for its membership (e.g., on changes in market trends, the impact of the recent Southeast Asian crisis on the industry). It holds an annual business outlook conference in New York City and co-sponsors an annual technology conference in Atlanta. The association also maintains involvement in apparel training through its Education Committee that focuses on college curricula related to apparel management and technology and includes members of the NTC as well as other universities. Outside of its significant involvement with AMTEX and related Appalachian area institutions, the AAMA is not involved with business associations for the apparel industry that operate at

**Figure 14 -
Institutional Framework for Select Inter-firm Partnerships
in the Appalachian Apparel Industry**

ORGANIZATIONAL SCOPE	1. Size of member firms		2. Industries of member firms		3. Location of member firms	
ORGANIZATIONAL FUNCTION	<i>Smaller</i>	<i>vs. Larger (or All Firms)</i>	<i>Peers</i>	<i>vs. Supply Chains</i>	<i>Local/regional Cluster</i>	<i>vs. Dispersed</i>
1. Clarifying public and private sector roles. Increasing private property rights, improving government performance and infrastructure, lobbying.		AAMA	AAMA			AAMA
2. Coordinating markets. Increasing control over input and output markets (including resource pooling schemes), increasing member information about markets, limiting or redirecting productive capacity collectively (also including searching for new, export markets).	AAPN SEAMS		AAPN SEAMS		AAPN SEAMS	
3. Upgrading skills and productive capacity/technology. Developing management and workers skills, diffusing new technologies, improving product/production process quality (e.g., by enacting higher standards).	AAPN SEAMS	AMTEX OTEXA AAMA	AAMA AAPN SEAMS	AMTEX OTEXA	AMTEX Research Univs. AAPN SEAMS	AMTEX OTEXA AAMA

ORGANIZATIONAL SCOPE ORGANIZATIONAL FUNCTION	1. Size of member firms <i>Smaller vs. Larger (or All Firms)</i>	2. Industries of member firms <i>Peers vs. Supply Chains</i>	3. Location of member firms <i>Local/regional Cluster vs. Dispersed</i>
4. Promote R&D and new product development. Promoting research and development, new product development, and basic research.	AMTEX OTEXA	AMTEX OTEXA	AMTEX Research Univs. AMTEX OTEXA
5. Coordinating inter-firm relationships. Increasing efficiency in supply chains, coordinating peer firms relationships, acting as lead organizer for group (e.g., by setting up inter-firm relationships or moderating conflicts among firms).	AAPN	AAPN	AAPN
6. Conducting strategic planning for relevant industry(s). Planning for future changes in markets, technologies, labor and training needs, and product trends.	AMTEX OTEXA	AMTEX OTEXA	AMTEX OTEXA
7. Upholding labor standards and social benefits. Setting wage or benefit standards and/or providing other social supports for workers.			

a sub-national level, nor does it host local chapters of the AAMA. Hence, its activities do not necessarily stimulate regional development of apparel clusters.

(3) Scope and Functions of Local/Regional Institutions. Some regional institutions round out the picture of this industry. Two of these—the American Apparel Producers Network (AAPN) and the Southeastern Apparel Manufacturers and Suppliers Association (SEAMS)—offer contrasting images of the potential for regional trade associations in this industry. The American Apparel Producers Network (the AAPN) is located in Atlanta, Georgia. This organization offers its approximately 300 member firms with two services—cooperative marketing and cooperative workers’ compensation insurance. The organization changed its name recently (it was called the American Apparel Contractors Association) to signal the fact that it does not consider itself a regular trade association. It is not political and it does not lobby in Washington; instead it primarily organizes the highly fragmented apparel industry into supply chains and cooperative networks.

How does the organization specifically carry out this goal? It hosts problem-solving groups of member firms patterned after town meetings and organizes its membership on-line as a sourcing database (the “Apparel Exchange”). AAPN also encourages apparel firms to co-design and co-arrange the production of garments on-line at confidential password-protected websites—a much cheaper alternative for small firms than dedicated lines between companies. The AAPN’s member companies have been reachable on-line since 1993—the association is one of the earliest of such organizations to do this. AAPN’s marketing effort takes place in a context in which, according to the organization’s director, many of the “long-run” apparel contracts have moved offshore to places with lower labor costs. “Short run,” specialty contracts remain, however, for firms that can offer flexible, quality, and quick service to their customers. The on-line sourcing directory helps member firms to locate these specialty contracts. Therefore, AAPN’s supply chain efforts allow its member firms to link up to achieve these goals; they also allow them to meet the challenges of consolidation and computerization within the apparel and textile industries.⁶⁹ AAPN tries to “be a big place for small businesses” bringing the smaller companies up to speed in terms of performance and technology issues.⁷⁰

Although the AAPN’s membership is distributed throughout 41 states, the bulk of its network exists in the southeastern states. In that sense, the organization operates like a regional association. Similar sourcing networks of apparel manufacturers exist in other regions: the Atlantic Apparel Contractors Association in Allentown, Pennsylvania, the Pennsylvania Apparel and Textile Association, the Garment Contractors Association in San Francisco, the Northwest Apparel Manufacturers Association in the Pacific Northwest, and the Garment Industry Development Corporation (GIDC) of New York. These regional associations play a critical role in the integrated textile and apparel complex. As DAMA’s project director stated, DAMA staff teach classes to manufacturers about “quick response” (and other subjects), but organizations like GIDC organize sourcing chains to achieve it.⁷¹

Another regional apparel sourcing association serving the Southeast is SEAMS—the Southeastern Apparel Manufacturers and Suppliers Association. This organization was started in 1969 by a group of manufacturers clustered near Columbia, South Carolina, to collectively solve industry problems. This association is about the same size as AAPN in membership—but its firms are centered mostly in the Carolinas. SEAMS until recently had linked apparel contractors in a more traditional manner—hosting a biannual trade show. However, due to the increasing cost of such shows and competition—more associations are hosting bigger and better trade shows—the organization decided to eliminate this event in the last few years. It now participates in the show held by the National Association of Hosiery Manufacturers, and holds its own biannual technology-related educational conference for its members.

The organization currently has found its membership declining as more and more work is contracted offshore to the Caribbean Basin and South America, yet it does not assist its membership with marketing activities in any formal way. SEAMS responds to requests for contractor services by consulting its in-house membership database and offering a FAX broadcast service to members to spread the word about contracting opportunities. Its director is currently semi-retired.

Thus, whereas SEAMS aims to assist its members with acquiring information about markets and technology, it carries this mission out in a much less proactive and more traditional way than does AAPN. The structure and goals of these organizations are similar; yet, their performance seems to diverge sharply. Organizations that serve or organize state-level or sub-state clusters of apparel firms were not encountered. State governmental competitiveness efforts, on the whole, did not target the apparel industry for specialized services (except North Carolina's manufacturing extension services). Hence, the bulk of small apparel firms in much of the Appalachian area remains unserved by targeted and sector-specific association, government extension, and/or community college services.

(4) Institutional Gaps. From this profile of select business associations serving the apparel industry, several strengths and weaknesses become apparent. First, the national associations (ATMI and AAMA) were instrumental in early efforts within the Department of Commerce to support basic research and technology adoption in the apparel and textile industries. AMTEX, the result of this business association, offers a set of regionally sited and nationally coordinated institutions for moving the apparel industry into computerized and automation technologies. However, from these brief interviews, it is unclear the extent to which these efforts have been linked with smaller apparel firms in the industry. Several regional associations indicate a closer presence to SME manufacturers.

Secondly, regional subcontractors' associations by themselves differ immensely in terms of association efforts. The more traditional associations could benefit from more collaboration or networking opportunities with other leading regionally based groups. This same divergence in performance of regionally based textiles associations was also noted in the previous section. Some consolidation within the institutional structure is

also occurring (e.g., SEAMS' ending its trade show arena). This consolidation is similar to ATMI's takeover of this function from its regional association entities. Finally, none of the associations interviewed for this section mentioned collective efforts at worker training, such as GIDC provides its members' workers in New York. It may be that educational institutions are picking up this effort, but the apparel firms and their workers seem relatively unconnected to any worker training effort.

IV. FINDINGS AND POLICY OPTIONS

This section summarizes the main insights that emerge from the foregoing case studies. It also includes policy options for how public sector agencies, such as the Appalachian Regional Commission, can build on the region's institutional strengths or overcome institutional weaknesses through partnerships with business associations and other intermediary organizations.

Findings

- **The associations researched show a great range of institutional functions, from lobbying to assisting firms develop new products, processes, skills, or technology.**

Large business associations with headquarters in Washington often list lobbying on legislative and regulatory matters as their primary function (e.g., the American Apparel Manufacturers Association, American Textiles Manufacturers Institute, and the American Forest & Paper Association). Other business associations eschew lobbying activities altogether and focus on helping their members adapt to new conditions and reach new markets. These associations include the industry-sponsored Furniture Foundation, the Upholstered Furniture Action Council standard-setting activities, and the Southeastern Lumber Manufacturers Association's "competitive assessment" activities to benchmark members' performance and the formation of "managers' roundtables" to engage firms in collective problem-solving. The American Apparel Producers Network's promotion of supply networks through the internet, the Kentucky Wood Products Competitiveness Corporation and the Kentucky Wood Manufacturers Association's activities in Kentucky's wood products industry, as well as the technology and basic research activities of the American Textile Partnership are progressive activities by several associations.

- **Few business associations identified in these case studies actively engage in activities to recruit, train, and/or structure career paths for production workers in their member firms.**

Specialized, industry-specific worker training programs in community colleges and other institutions are common throughout the U.S., including the Appalachian states.⁷² However, business associations interviewed for this project rarely take a direct role in supporting these worker-training activities.

Two exceptions are state textile associations involved with community college training programs and the apprenticeship training program established by two state chapters of the National Tooling and Manufacturing Association, the North Carolina A&T University, and the Piedmont Triad Advanced Center for Manufacturing project. However, other regional associations in the Appalachian states—for instance, the Southeastern Lumber Manufacturers Association, the Southern Forest Products Association, the Southeastern Apparel Manufacturers & Suppliers Association, the American Apparel Producers Network, and even the American Furniture Manufacturers Association⁷³—do not take an active interest or involvement in worker training. State Manufacturing Extension Partnership programs and other state agencies may fill this gap in organizing working training efforts (e.g., the Kentucky Wood Products Competitiveness Corporation).

Furthermore, other programs to promote worker-management collaboration are a missing ingredient from the institutions surveyed. With the exception of the union-business partnership within the American Textile Partnership, few business associations interviewed carried on collaborative efforts with organized labor or other workers as part of their activities.

- **National business associations represent all four profiled industries in the Appalachian region but many local clusters of firms are under-served by local business associations.**

Several forces are pushing business associations to “go national” while local or statewide associations have decreased in significance. Such forces include the need to achieve organizational scale and the desire of associations to increase their ability to lobby the federal government. Many business associations today do not maintain a federated structure with local or state chapters once they have expanded, due to a seeming lack of interest in specific local firm affairs and an overemphasis on the importance of national policymakers. Some exceptions include the National Tooling and Manufacturing Association and the National Association of Manufacturers that have maintained local chapters all along.⁷⁴ Because of these trends, the four industries examined in this study are under-served by trade associations or institutions that could stimulate collective problem solving and manufacturing competitiveness along with regional development.

National furniture associations are concentrated in North Carolina and produce local developmental benefits for firms there, but furniture clusters in Mississippi and Tennessee remain relatively unorganized and do not experience such benefits. The wood products and apparel industries host several regional associations but it is unclear how well they represent local clusters with state and local level policymakers. Textile firms are represented at the state and national levels; however, the state associations have increasingly narrowed their activities over time and are minimally involved in manufacturing competitiveness and state economic development issues.

- **Large firms are well served by business associations in all four profiled industries but smaller firms lack separate representation for their specific issues.**

Of the twenty business associations interviewed for this project, only one, the Southeastern Lumber Manufacturers Association, had a specific firm-size criterion for association membership. The American Apparel Producers Network and the Dalton Floor Covering Marketing Association indicated that they tended to serve smaller firms in their industries because there was an institutional gap in this area and smaller firms wanted their own association. The remaining associations served large corporate and smaller firms together with the same set of services. Therefore, the small and medium-sized enterprises (SME) may be overlooked.

Targeting the services of business associations to smaller firms is important for promoting entrepreneurship, and is often pursued as an economic development strategy for rural and high unemployment areas such as parts of Appalachia. Analysts have found that SMEs and large firms may also require different technical assistance, technologies, and other services.⁷⁵ Many state Manufacturing Extension Partnership programs mostly provide assistance to individual client firms rather than organize collective groups of firms. One extension agent said, “the big success stories of individual companies provide more help to our funding side” in terms of maintaining legislative appropriations.

- **Business associations in the sectors surveyed foster peer groups of firms within an industry more than supply chain relationships.**

Most business associations in the U.S. are organized around a specific industry (e.g. wood flooring manufacturers, carpet manufacturers, lumber producers, textile mills, silk fiber manufacturers, and so forth), and almost all allow their various input suppliers (of machinery, materials, and professional services) to join as associate members. However, beyond these actions business associations do not frequently carry out the promotion of supply chain collaboration between inter-linked industries. It may be that such relationships are merely coordinated and, therefore, controlled by large corporations within these chains, as many analysts point out.⁷⁶ However, this means that industries heavily comprised of SMEs (e.g., wood products) do not coordinate supply chain relationships well and/or, their collective needs may be under-served if they are linked to and coordinated by firms in an oligopolistic industry.

Exceptions to this finding include the Dalton Floor Covering Marketing Association’s trade shows, which are held to make the expertise of key suppliers accessible to their smaller and more rural constituency. The Kentucky Cabinet on Economic Development’s networking programs is another example of efforts by localized or statewide agencies to support supply chain networks of linked contractors.

- **Local business associations, state economic development manufacturing extension agencies, and other state or local actors together have constructed innovative, sector-specific, and targeted support systems to local or regional clusters of firms.**

These success cases of local institutional concentration often show that when firms have already been organized into sector-specific and local business associations or interest groups, such groups are able to urge other local and state agencies to channel resources to their constituencies. In this way, the Dalton Floor Covering Marketing Association persuaded state and county officials to fund an exhibition hall. Additionally, the Carpet and Rug Institute has prompted Georgia's extension office to provide it with collective services, and other actors (e.g., Dalton Community College, the State's economic development and export assistance offices) have been influenced to create carpet-specific programming for this sub-state cluster.

Other cases show a similar confluence around sector-specific and localized interests. The Carolina Hosiery Association influenced the formation of a statewide strategic plan for the industry in conjunction with the State economic development agency and the National Association of Hosiery Manufacturers. Early efforts of the American Furniture Manufacturers Association and other related groups to organize firms in North Carolina fostered the establishment of the Furniture Technology Center at Catawba Valley Community College, and the Furniture Manufacturing and Management Center at North Carolina State.

Policy Options

The following policy options would address the institutional gaps and help replicate the successes noted above in relation to the functions and scope of business associations and other intermediary organizations. These options are targeted to public sector and/or non-profit organizations focusing on local, sub-state, or regional development. These organizations could act in partnership with the Appalachian Regional Commission to increase the capacity of business associations and industries serving the region.

- **Stimulate the organization of local or regional groups of firms (by sector or related-sectors) and make certain that the needs of small and medium-sized firms are met.**

These local associations should include formal organizations and small contractual networks to ensure they provide a range of collective goods to their respective industries. They could be organized by state or other public-sector staff (e.g., as Kentucky Wood Products Competitiveness Corporation did with the Kentucky Wood Manufacturers Association) or by community development organizations with economic development interests (e.g., the Community Development Foundation in Mississippi, and the Appalachian Center for Economic Networks in Ohio). Also, existing national level associations interested in organizing local chapters could do so with the assistance of local economic development organizations.

Public agencies can assist local business associations of small and medium-sized firms by providing market facilities to help them bring in suppliers or market their own

products, and by providing support with computer communications technologies to assist them in reaching additional markets.

- **Facilitate vertical supply chain cooperation by hosting trade shows, task forces, conventions, strategic planning or other mechanisms to bring inter-linked sectors together at a national or sub-national level.**

Public sector agencies can target local supply chain clusters and create a mechanism for them to link to more dispersed networks. For example, Kentucky has organized local auto supply firms and connected this network to auto companies and other original equipment manufacturers in the Midwest that purchase such products. Such government action often assists SMEs and rural firms. Additionally, it promotes efficiencies among entire sectors and inter-linked sectors (through the diffusion of new technology or dissemination of best practices) that can produce social benefits such as job retention and economic development in non-metropolitan areas.

- **Encourage closer links between business associations and training institutions to develop specialized training curricula for workers, and research collective labor-management efforts and independent worker associations in the areas of training, innovation, and manufacturing competitiveness.**

Workers in many of these industries migrate between jobs in different firms, and firms are consequently reluctant to invest in worker training. Therefore, training is a perfect activity to provide collectively, which would increase the returns for all firms. Increasing workers' skills may be critical to increase innovation in small firms. Given that many Appalachian states have community college systems, these findings suggest that linkages between such systems and existing business associations should be strengthened. Public agencies and business associations also could explore the value of joint labor-management programs or independent worker associations to provide these benefits collectively in industries with high job mobility, training requirements, and/or insecurity. Independent worker associations may provide training, connections to the industry and community, and other support services for workers during their employment and if they are between jobs.

V. CONCLUSION

This study has analyzed the capacity of business associations and other inter-firm organizations serving the Appalachian region. Based on national and international research, the first part of the report examined the critical functions such as market coordination and pooled research and development of inter-firm organizations to achieve transaction and adaptive cost savings for member firms. Transaction costs refer to typical expenses in producing and selling a product that a firm has developed. Adaptive costs include expenses incurred in developing a new product or process as a response to changes in long-term demand. Additionally, the report identified the different levels or

scope of such organizations. For example, business associations can represent small and/or large firms, one or many sectors of the industry, and local and/or national areas.

This framework of the functions and scope of business associations and other inter-firm organizations was used to analyze these organizations in the furniture, lumber and wood products, textiles, and apparel industries in the Appalachian region. The institutional strengths and gaps of the business associations serving each industry were highlighted. The findings and policy options summarize the results of the analysis and suggest actions that could strengthen the capacity of business associations and the industries in the region. Policymakers interested in local or regional industrial development can use these specific findings to strengthen the Appalachian industries examined in this report, or apply the framework to inter-firm organizations in other industries and identify actions to strengthen those industries.

Figure 15 - Ideal Types of Collective Inter-firm Organizations

	ATTITUDE TOWARD NEW MARKET OPPORTUNITIES		
	<i>Fragmented</i>	<i>Traditional</i>	<i>Proactive</i>
<i>Localized</i>	<p>UNORGANIZED CLUSTER</p> <ul style="list-style-type: none"> • No current collective inter-firm relationships exist. • Local or regional cluster of firms in an industry or related industries. • Individual firms exclusively make decisions regarding transaction and adaptive cost efficiencies. 	<p>STATIC CLUSTER ORGANIZATION</p> <ul style="list-style-type: none"> • Collective inter-firm relationships exist and are organized into either an informal or formal organization. • The inter-firm organization focuses on strengthening a local or regional cluster of firms in an industry or related industries (over a larger grouping). • The inter-firm organization addresses transaction cost efficiencies in its activities. 	<p>ACTIVIST CLUSTER ORGANIZATION</p> <ul style="list-style-type: none"> • Collective inter-firm relationships exist and are organized into either an informal or formal organization. • The inter-firm organization focuses on strengthening a local or regional cluster of firms in an industry or related industries (over a larger grouping). • The inter-firm organization addresses transaction and adaptive cost efficiencies in its activities.
ATTITUDE TOWARD THE GEOGRAPHY OF INDUSTRIAL DEVELOPMENT	<p>UNORGANIZED NATIONAL INDUSTRY</p> <ul style="list-style-type: none"> • No current collective inter-firm relationships exist. • Widely (e.g., nationally) dispersed grouping of firms in an industry or related industries. • Individual firms exclusively make decisions regarding transaction and adaptive cost efficiencies. 	<p>RENT-SEEKING CORPORATIST ORGANIZATION</p> <ul style="list-style-type: none"> • Collective inter-firm relationships exist and are organized into either an informal or formal organization. • The inter-firm organization focuses on strengthening a widely (e.g., nationally) dispersed grouping of firms in an industry or related industries (over a localized cluster). • The inter-firm organization addresses transaction cost efficiencies in its activities. 	<p>INNOVATIVE CORPORATIST ORGANIZATION</p> <ul style="list-style-type: none"> • Collective inter-firm relationships exist and are organized into either an informal or formal organization. • The inter-firm organization focuses on strengthening a widely (e.g., nationally) dispersed grouping of firms in an industry or related industries (over a localized cluster). • The inter-firm organization addresses transaction and adaptive cost efficiencies in its activities.
<i>Dispersed</i>			

VI. ENDNOTES

¹ Many researchers assume the existing interfirm institutional capacity in the United States is weak, non-existent or focused primarily on lobbying activities, or that such institutions as business associations exist primarily to thwart organized labor (e.g., see Piore and Sabel, *The Second Industrial Divide*; Harris, “Getting It Together”). However, little systematic research on such institutions in this country has been conducted. Exceptions are Bradley, *The Role of Trade Associations*; Lynn and McKeown, *Organizing Business*.

² For example, see Nadvi and Schmitz, “Industrial Clusters;” Doner and Schneider, “Business Associations.”

³ Saxenian, *Regional Advantage*.

⁴ Rosenfeld, “Does Cooperation Enhance.”

⁵ McCormick, “A Life Cycle Model.”

⁶ Glasmeier et al., “How Firms Acquire Strategic Information.”

⁷ The Appalachian Regional Commission covers 399 counties distributed across portions of the following states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia.

⁸ Best, *The New Competition*; Dertouzos et al., *Made in America*; Piore and Sabel, *The Second Industrial Divide*.

⁹ Summarized from various sources, including: Capecchi, “Case 4: Emilia-Romagna;” Herrigel, “Industrial Order;” Locke, *Remaking the Italian Economy*; Pyke, *Small Firms*; Schmitz and Musyck, “Industrial Districts in Europe;” Semlinger, “Economic Development in Baden-Wuerttemberg.”

¹⁰ Hubert Schmitz—in his research of flexible production districts in Europe and developing countries—calls this combination of planned and unplanned group benefits, “collective efficiency.” Hence, groups of firms achieve collective efficiency through intended joint action and incidental clustering. Schmitz, “Collective Efficiency.” See also Saxenian, *Regional Advantage*.

¹¹ Hage and Alter focus on the type of business costs that traditional versus flexible producers emphasize and seek to diminish in their business planning efforts. They call these, respectively, *transaction* versus *adaptive* costs, terminology this report uses. Doner and Schneider focus on how business associations assist firms to reduce these two types of costs; they call the resultant cost savings *static* and *dynamic efficiencies*, respectively. Hage and Alter, “A Typology;” Doner and Schneider, “Business Associations.”

¹² Here Doner and Schneider’s analytical framework is revised to combine activities and add others suggested by other researchers. Doner and Schneider, “Business Associations.”

¹³ McCormick, “A Life Cycle Model.”

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- ¹⁴ McCormick, “A Life Cycle Model;” Herman, Personal Interview; Cleckley, Personal Interview.
- ¹⁵ McCormick, “A Life Cycle Model,” Kelley and Arora, “The Role of Institution-Building.”
- ¹⁶ Storper, “Regional Technology Coalitions.”
- ¹⁷ Kelley and Arora, “The Role of Institution-Building;” Rosenfeld, “Does Cooperation Enhance.”
- ¹⁸ Skocpol et al. call leaders who organize collective civic organizations, “institutional entrepreneurs.” Skocpol et al., “Casting Wide Nets.”
- ¹⁹ Pyke, *Small Firms*; Rosenfeld, *Industrial-Strength Strategies*.
- ²⁰ McCormick, “A Life Cycle Model.”
- ²¹ Capecchi, “Case 4: Emilia-Romagna.”
- ²² Herman, *Corporate Control*.
- ²³ McCormick, “A Life Cycle Model.”
- ²⁴ Piore and Sabel, *The Second Industrial Divide*.
- ²⁵ Appelbaum, and Batt, *The New American Workplace*.
- ²⁶ Doner and Schneider, “Business Associations;” McCormick, “A Life Cycle Model.”
- ²⁷ Spath, “Small Firms in Latin America;” Pyke, *Small Firms*.
- ²⁸ Pyke, *Small Firms*, 1. Others, however, question the potential of small firms for achieving these goals, arguing that many small enterprises are stagnant, inefficient, and/or often controlled and exploited as subcontractors for much larger firms that shed risk and other costs to these small enterprises. This debate remains unresolved. Harrison, *Lean and Mean*; Spath, “Small Firms in Latin America.”
- ²⁹ NIST, “Solutions for Manufacturers;” Website, “Georgia Manufacturing Extension Alliance and EDI Homepage,” <http://www.edi.gatech.edu>; Website, “Alabama Technology Network Homepage,” <http://www.atn.org>.
- ³⁰ For example, Markusen’s research of dynamic industrial networks in United States regions suggests that business associations support SMEs and other firms in “Italianate Marshallian Industrial Districts,” but other industrial configurations like those in Seattle and North Carolina show little evidence of business associations, consortia, or other intermediary organizations. Markusen, “Sticky Places.”
- ³¹ Glasmeier and Sugiura, “Japan’s Manufacturing System;” Lynn and McKeown, *Organizing Business*; Smith et al., “There are Two Sides.”
- ³² Storper, “Regional Technology Coalitions.”

³³ Both the German and Japanese industrial models display a mix of SME-oriented versus large-firm-oriented interfirm institutions—in marked contrast to the Italian industrial districts. Pyke, *Small Firms*; Semlinger, “Economic Development in Baden-Wuerttemberg.” When mixing both large and small firms in the same institutions, some researchers find that large firms dominate associations and consortia. For instance, Semlinger argues that, in regard to Germany, large firms are more likely than SMEs to engage in cooperative behavior, to make use of externally provided and often government-subsidized services (e.g., for research and development, training), and to disproportionately influence the agendas of collective associations with smaller-firm members due to their relatively larger resource bases and contributions to dues. His argument points to a public policy that fosters collective institution-building for SMEs only or, at least, separately from large firms. Semlinger, “Economic Development in Baden-Wuerttemberg.”

³⁴ Astley and Fombrun classify firms as belonging to either commensalist communities, where individual firms make similar demands on an environment (in terms of resources utilized) or symbiotic communities, made up of mutually interdependent firms such as those connected in a supply chain. These are each subdivided into collectivities of a few versus a large number of members. Schmitz offers a similar typology, distinguishing between *horizontal/vertical* and *bilateral/multilateral* cooperation between firms. Polenske also distinguishes between transactional relations between firms that are required to co-design or co-produce a product or service (she calls this form of vertical interaction, “*collaboration*”) and ties which do not require this close of a relationship (which she calls “*cooperation*,” like the horizontal ties described by Schmitz). This report uses the terminology of “peer” communities to represent horizontal relationships among firms and “supply-chain” communities to represent vertical interfirm connections. Astley and Fombrun, “Collective Strategy;” Schmitz, “Collective Efficiency;” Polenske, “Competition, Collaboration, and Cooperation.”

³⁵ Nadvi and Schmitz, “Industrial Clusters;” Pyke, *Small Firms*; Schmitz, “Small Shoemakers;” Schmitz, “Collective Efficiency;” Semlinger, “Economic Development in Baden-Wuerttemberg.”

³⁶ Astley and Fombrun, “Collective Strategy.”

³⁷ Semlinger, “Economic Development in Baden-Wuerttemberg.”

³⁸ Polenske, 1998; Williamson, *The Economic Institutions of Capitalism*. Williamson’s transaction cost model originally posited only two outcomes of exchange situations: competitive, non-cooperative relations among firms (i.e., the “market”) or vertical integration (“hierarchy”) and the absorption of one firm by another to avoid “opportunism” by an untrustworthy supplier or by disloyal customers who leave suppliers that have made specific investments to serve them.

³⁹ Grandori, and Soda, “Inter-firm Networks;” Kelley and Arora, “The Role of Institution-Building.”

⁴⁰ McCormick, “A Life Cycle Model.”

⁴¹ Following national governmental devolution and the creation of regional governments in the 1970s, leaders in the Emilia-Romagna region in the “Third Italy” constructed a novel set of progressive industrial development policies on their own—such as technical assistance service centers for firms in different sectors, the organization of business associations, and the provision of subsidized incubator or manufacturing space in small business areas. Putnam, *Making Democracy Work*; Capecchi, “Case 4: Emilia-Romagna.”

⁴² Most national industry policy efforts have been described as benefiting the Tokyo metropolitan area almost exclusively (e.g., see Glasmeier and Sugiura, “Japan’s Manufacturing System;” Markusen, “The Interaction Between Regional and Industrial Policies”).

⁴³ For instance, the regional government of Baden-Wuerttemberg has stimulated a novel set of industrial development institutions over many decades—such as agencies to assist firms in adopting advanced foreign technology, in acquiring business training and technical assistance, in organizing trade fairs for local products, and in utilizing a comprehensive and coordinated system of vocational training and education. Industrial support programs are also promoted at the national level for firms in all regions. Business associations can also shape or create industrial policies at the regional, state, or national levels. For example, German Employers Associations and Trade and Industry Associations have chapters at the local and regional levels which aggregate upward into the Federal Employers’ Association (BDA) or Federal Association of German Industry, respectively. Schmitz and Musyck, “Industrial Districts in Europe;” Semlinger, “Economic Development in Baden-Wuerttemberg.”

⁴⁴ Another example includes the Tri-State Manufacturers Association in western Minnesota which proactively serves the metals industry there and has led to growth among participating firms and the region. Also, the Tooling and Manufacturing Association has offered training, technological seminars, pooled resources, and lobbying to its 1500 member firms in the greater Chicago region for more than half a century in spite of several failed attempts in the distant past to “go national” to expand its influence. Saxenian, *Regional Advantage*; Rosenfeld, “Does Cooperation Enhance;” McCormick, “A Life Cycle Model.”

⁴⁵ Skocpol et al., “Casting Wide Nets.”

⁴⁶ Others have studied the role of community colleges and community development organizations in detail; see Rosenfeld, *New Technologies and New Skills*; Rosenfeld and Kingslow, *Advancing Opportunity in Advanced Manufacturing*; Fitzgerald, “Is Networking Always the Answer;” Harrison and Weiss, *Workforce Development Networks*; National Congress for Community Economic Development, “Tying It All Together.”

⁴⁷ Gale Press, *Encyclopedia of Associations*.

⁴⁸ U.S. Department of Commerce, *County Business Patterns*.

⁴⁹ In calculating aggregate employment for various industrial sectors in each state’s Appalachian region, these statistics are summed for each ARC-designated county in that state. County level statistics, however, are often stated in ranges to protect the identify of certain firms. Hence, the mid-point of such ranges was used in these aggregates. (For example, apparel employment in a county may have been listed as between 100 and 249 workers; this averages to 175.) These statistics may also be inaccurate because they may suppress reporting when few establishments comprise the sector in that county and they may miss many smaller firms. However, they are one of the best sources of data at a disaggregated geographic level. These estimates were produced by ARC staff based on the Clean County Business Patterns Program using 1996 data.

⁵⁰ Rosenfeld, “Industrial-Strength Strategies.”

⁵¹ Data from the U.S. Department of Commerce, *1996 County Business Patterns*, utilized for all statistics in this section.

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- ⁵² Austin and Betten, "Rural Organizing."
- ⁵³ Mississippi maintains specialist extension agents for the polymer, paint, and plastics industries which are concentrated in the south, in conjunction with the University of Southern Mississippi's Polymer Institute. All other manufacturing extension agents offer generalist assistance to any manufacturer (e.g., help with technologies or plant layout) in all other sectors and communities.
- ⁵⁴ Rosenfeld, *New Technologies and New Skills*; Willis, Personal Interview, NCMEP.
- ⁵⁵ Data from the U.S. Department of Commerce's *1996 County Business Patterns* utilized for all statistics.
- ⁵⁶ Gale, *Encyclopedia of Associations*.
- ⁵⁷ Glasmeier et al., "How Firms Acquire Strategic Information."
- ⁵⁸ The Hardwood Council is comprised of the following business associations: American Walnut Manufacturers Association, Appalachian Hardwood Manufacturers, Inc., Canadian Lumbermen's Association, Hardwood Distributors Association, Hardwood Manufacturers Association, National Hardwood Lumber Association, National Oak Flooring Manufacturers Association, National Wood Flooring Association, Northeastern Loggers' Association, Southeastern Lumber Manufacturers Association, Wood Component Manufacturers Association.
- ⁵⁹ Website, "AHEC Homepage," <http://www.ahec.org>, January, 1998.
- ⁶⁰ Website, "SLMA Homepage," <http://www.slma.org>, January, 1998. By contrast, the SFPA's mission, for example, is to "develop, maintain, and expand demand for Southern Pine Lumber products, and to engage in such activities and programs that the members deem useful to advance and protect their interests" (Website, "SFPA Homepage," <http://www.sfpa.org>, January, 1998).
- ⁶¹ Glasmeier et al., "How Firms Acquire Strategic Information."
- ⁶² Data from the U.S. Department of Commerce, *1996 County Business Patterns*, utilized for all statistics in this section except industry business volume (from Julian, Personal Interview).
- ⁶³ James Young, *Textile Leaders of the South*.
- ⁶⁴ GTMA (Georgia Textile Manufacturers Association), "Textiles: Georgia's Biggest and Best," brochure, 1994.
- ⁶⁵ Website, "ATMI Homepage," <http://www.apparelexchange.com/atmi>, January 1998.
- ⁶⁶ UNITE is a merger of the former International Ladies Garment Workers Union and the Amalgamated Clothing and Textile Workers of America.
- ⁶⁷ DAMA Industry Project, Organizational brochures, 1997.
- ⁶⁸ Data from the U.S. Department of Commerce, *1996 County Business Patterns*, utilized for all statistics in this section.

⁶⁹ Mike Todaro, at the American Apparel Producers Network, stated that there was much consolidation occurring in textile, apparel, and related retail operations as well as a blurring of lines between industries. For example, textile companies now cut piece goods and manufacturers are expanding into retail outlets and catalogues to deal with globalization of markets (Todaro, Personal Interview).

⁷⁰ Todaro, Personal Interview.

⁷¹ GIDC also carries out extensive marketing activities for its membership, including significant export promotion activities (Cleckley, Personal Interview).

⁷² Fitzgerald, "Is Networking Always the Answer?"; Harrison and Weiss, *Workforce Development Networks*; Rosenfeld, *Industrial-Strength Strategies*; Rosenfeld, *New Technologies and New Skills*; Rosenfeld and Kingslow, *Advancing Opportunity in Advanced Manufacturing*.

⁷³ The AFMA is heavily involved in supporting the FMMC at North Carolina State University that provides management training and technical assistance to firm owners and management personnel.

⁷⁴ Local chapters of the NTMA are currently representing groups of metalworking firms in Appalachian states. Local NAM organizations exist at the state level but most do not work with manufacturers along sectoral lines, and usually only do lobbying. Some are beginning to help promote vocational training to increase the competitiveness of state manufacturers (e.g., the Associated Industries of Kentucky—a NAM affiliate).

⁷⁵ Semlinger, "Economic Development in Baden-Wuerttemberg;" Villaran, "Small-scale Industry."

⁷⁶ Gereffi, "The Organization of Buyer-Driven Global Commodity Chains;" Harrison, *Lean and Mean*; Storper and Harrison, "Flexibility, Hierarchy and Regional Development."

**An Analysis of the Economic Development Role
of Business Associations
and Other Intermediary Organizations
Serving Appalachian Industries**

VOLUME II: APPENDIX

Submitted to
the Appalachian Regional Commission

Second Edition
April 2000

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Manufacturing Employment in Appalachian States

The following tables list employment for two-digit manufacturing industries for the Appalachian region as a whole and each of the states comprising the region. Employment for the Appalachian portion of each state is also broken out. West Virginia, as a whole, is included in Appalachia, so only statewide statistics are listed for that state.

Figure 1: Manufacturing Employment in Appalachia

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	7,608,685	34,590,815	102,198,864	7.4%	33.8%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	1,925,215	6,869,883	18,558,100	10.4%	37.0%	1.4	1.1	MANUFACTURING
20 Food Products	132,386	503,686	1,541,700	8.6%	32.7%	1.2	1.0	20 Food Products
21 Tobacco Products	4,391	28,859	31,115	14.1%	92.7%	1.9	2.7	21 Tobacco Products
22 Textile Mill Products	200,117	479,767	582,188	34.4%	82.4%	4.6	2.4	22 Textile Mill Products
23 Apparel	136,127	432,877	843,140	16.1%	51.3%	2.2	1.5	23 Apparel
24 Lumber/Wood Products	107,954	293,702	732,400	14.7%	40.1%	2.0	1.2	24 Lumber/Wood Products
25 Furniture/Related Products	102,645	235,795	498,464	20.6%	47.3%	2.8	1.4	25 Furniture/Related Products
26 Paper Products	58,795	247,296	625,764	9.4%	39.5%	1.3	1.2	26 Paper Products
27 Printing/Publishing	89,667	512,527	1,490,400	6.0%	34.4%	0.8	1.0	27 Printing/Publishing
28 Chemical Products	90,092	333,516	833,230	10.8%	40.0%	1.5	1.2	28 Chemical Products
29 Petroleum Products	6,797	25,281	108,378	6.3%	23.3%	0.8	0.7	29 Petroleum Products
30 Rubber/Plastics Products	103,968	385,614	997,421	10.4%	38.7%	1.4	1.1	30 Rubber/Plastics Products
31 Leather/Related Products	9,840	24,866	86,480	11.4%	28.8%	1.5	0.8	31 Leather/Related Products
32 Stone/Clay/Glass Products	71,156	205,164	495,480	14.4%	41.4%	1.9	1.2	32 Stone/Clay/Glass Products
33 Primary Metals	118,633	298,287	683,433	17.4%	43.6%	2.3	1.3	33 Primary Metals
34 Fabricated Metals	130,101	482,492	1,462,001	8.9%	33.0%	1.2	1.0	34 Fabricated Metals
35 Industrial Machinery	174,541	643,346	1,920,533	9.1%	33.5%	1.2	1.0	35 Industrial Machinery
36 Electronic Equipment	136,518	490,112	1,545,179	8.8%	31.7%	1.2	0.9	36 Electronic Equipment
37 Transportation Equipment	90,876	448,231	1,521,541	6.0%	29.5%	0.8	0.9	37 Transportation Equipment
38 Instruments	50,774	218,983	813,682	6.2%	26.9%	0.8	0.8	38 Instruments
39 Miscellaneous Products	28,258	127,146	391,657	7.2%	32.5%	1.0	1.0	39 Miscellaneous Products
399 Administrative	81,579	452,336	1,353,914	6.0%	33.4%	0.8	1.0	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).

SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 2: Manufacturing Employment in Alabama

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	1,033,634	1,568,825	102,198,864	1.0%	1.5%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	267,927	387,622	18,558,100	1.4%	2.1%	1.4	1.4	MANUFACTURING
20 Food Products	27,315	37,323	1,541,700	1.8%	2.4%	1.8	1.6	20 Food Products
21 Tobacco Products	0	707	31,115	0.0%	2.3%	0.0	1.5	21 Tobacco Products
22 Textile Mill Products	30,704	37,271	582,188	5.3%	6.4%	5.2	4.2	22 Textile Mill Products
23 Apparel	19,626	38,279	843,140	2.3%	4.5%	2.3	3.0	23 Apparel
24 Lumber/Wood Products	21,705	35,425	732,400	3.0%	4.8%	2.9	3.2	24 Lumber/Wood Products
25 Furniture/Related Products	10,629	12,890	498,464	2.1%	2.6%	2.1	1.7	25 Furniture/Related Products
26 Paper Products	6,130	19,157	625,764	1.0%	3.1%	1.0	2.0	26 Paper Products
27 Printing/Publishing	9,992	13,894	1,490,400	0.7%	0.9%	0.7	0.6	27 Printing/Publishing
28 Chemical Products	6,478	14,383	833,230	0.8%	1.7%	0.8	1.1	28 Chemical Products
29 Petroleum Products	1,094	1,491	108,378	1.0%	1.4%	1.0	0.9	29 Petroleum Products
30 Rubber/Plastics Products	14,214	19,694	997,421	1.4%	2.0%	1.4	1.3	30 Rubber/Plastics Products
31 Leather/Related Products	412	459	86,480	0.5%	0.5%	0.5	0.3	31 Leather/Related Products
32 Stone/Clay/Glass Products	6,724	8,943	495,480	1.4%	1.8%	1.3	1.2	32 Stone/Clay/Glass Products
33 Primary Metals	22,615	25,613	683,433	3.3%	3.7%	3.3	2.4	33 Primary Metals
34 Fabricated Metals	18,250	24,908	1,462,001	1.2%	1.7%	1.2	1.1	34 Fabricated Metals
35 Industrial Machinery	23,170	29,099	1,920,533	1.2%	1.5%	1.2	1.0	35 Industrial Machinery
36 Electronic Equipment	17,921	23,205	1,545,179	1.2%	1.5%	1.1	1.0	36 Electronic Equipment
37 Transportation Equipment	12,405	19,680	1,521,541	0.8%	1.3%	0.8	0.8	37 Transportation Equipment
38 Instruments	3,411	4,360	813,682	0.4%	0.5%	0.4	0.3	38 Instruments
39 Miscellaneous Products	2,940	5,837	391,657	0.8%	1.5%	0.7	1.0	39 Miscellaneous Products
399 Administrative	12,192	15,004	1,353,914	0.9%	1.1%	0.9	0.7	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 3: Manufacturing Employment in Georgia

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	666,533	3,037,062	102,198,864	0.7%	3.0%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	197,069	597,199	18,558,100	1.1%	3.2%	1.6	1.1	MANUFACTURING
20 Food Products	21,802	64,411	1,541,700	1.4%	4.2%	2.2	1.4	20 Food Products
21 Tobacco Products	0	2,700	31,115	0.0%	8.7%	0.0	2.9	21 Tobacco Products
22 Textile Mill Products	57,744	92,251	582,188	9.9%	15.8%	15.2	5.3	22 Textile Mill Products
23 Apparel	12,936	45,662	843,140	1.5%	5.4%	2.4	1.8	23 Apparel
24 Lumber/Wood Products	5,088	34,963	732,400	0.7%	4.8%	1.1	1.6	24 Lumber/Wood Products
25 Furniture/Related Products	3,520	11,754	498,464	0.7%	2.4%	1.1	0.8	25 Furniture/Related Products
26 Paper Products	4,265	30,860	625,764	0.7%	4.9%	1.0	1.7	26 Paper Products
27 Printing/Publishing	9,869	38,758	1,490,400	0.7%	2.6%	1.0	0.9	27 Printing/Publishing
28 Chemical Products	5,349	21,076	833,230	0.6%	2.5%	1.0	0.9	28 Chemical Products
29 Petroleum Products	117	986	108,378	0.1%	0.9%	0.2	0.3	29 Petroleum Products
30 Rubber/Plastics Products	7,699	24,553	997,421	0.8%	2.5%	1.2	0.8	30 Rubber/Plastics Products
31 Leather/Related Products	654	1,160	86,480	0.8%	1.3%	1.2	0.5	31 Leather/Related Products
32 Stone/Clay/Glass Products	5,016	17,734	495,480	1.0%	3.6%	1.6	1.2	32 Stone/Clay/Glass Products
33 Primary Metals	6,098	11,336	683,433	0.9%	1.7%	1.4	0.6	33 Primary Metals
34 Fabricated Metals	8,062	25,303	1,462,001	0.6%	1.7%	0.8	0.6	34 Fabricated Metals
35 Industrial Machinery	12,582	37,667	1,920,533	0.7%	2.0%	1.0	0.7	35 Industrial Machinery
36 Electronic Equipment	11,832	30,699	1,545,179	0.8%	2.0%	1.2	0.7	36 Electronic Equipment
37 Transportation Equipment	6,775	40,421	1,521,541	0.4%	2.7%	0.7	0.9	37 Transportation Equipment
38 Instruments	6,624	12,684	813,682	0.8%	1.6%	1.2	0.5	38 Instruments
39 Miscellaneous Products	1,939	7,305	391,657	0.5%	1.9%	0.8	0.6	39 Miscellaneous Products
399 Administrative	9,098	44,916	1,353,914	0.7%	3.3%	1.0	1.1	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).

SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 4: Manufacturing Employment in Kentucky

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	247,248	1,370,658	102,198,864	0.2%	1.3%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	53,233	304,305	18,558,100	0.3%	1.6%	1.2	1.2	MANUFACTURING
20 Food Products	3,285	22,250	1,541,700	0.2%	1.4%	0.9	1.1	20 Food Products
21 Tobacco Products	0	3,020	31,115	0.0%	9.7%	0.0	7.2	21 Tobacco Products
22 Textile Mill Products	2,341	8,711	582,188	0.4%	1.5%	1.7	1.1	22 Textile Mill Products
23 Apparel	9,690	23,976	843,140	1.1%	2.8%	4.8	2.1	23 Apparel
24 Lumber/Wood Products	5,623	12,624	732,400	0.8%	1.7%	3.2	1.3	24 Lumber/Wood Products
25 Furniture/Related Products	826	4,759	498,464	0.2%	1.0%	0.7	0.7	25 Furniture/Related Products
26 Paper Products	144	9,542	625,764	0.0%	1.5%	0.1	1.1	26 Paper Products
27 Printing/Publishing	2,955	24,002	1,490,400	0.2%	1.6%	0.8	1.2	27 Printing/Publishing
28 Chemical Products	884	13,698	833,230	0.1%	1.6%	0.4	1.2	28 Chemical Products
29 Petroleum Products	1,632	1,888	108,378	1.5%	1.7%	6.2	1.3	29 Petroleum Products
30 Rubber/Plastics Products	2,197	19,101	997,421	0.2%	1.9%	0.9	1.4	30 Rubber/Plastics Products
31 Leather/Related Products	1,381	1,493	86,480	1.6%	1.7%	6.6	1.3	31 Leather/Related Products
32 Stone/Clay/Glass Products	2,643	10,712	495,480	0.5%	2.2%	2.2	1.6	32 Stone/Clay/Glass Products
33 Primary Metals	3,585	16,768	683,433	0.5%	2.5%	2.2	1.8	33 Primary Metals
34 Fabricated Metals	2,668	22,502	1,462,001	0.2%	1.5%	0.8	1.1	34 Fabricated Metals
35 Industrial Machinery	5,850	35,696	1,920,533	0.3%	1.9%	1.3	1.4	35 Industrial Machinery
36 Electronic Equipment	2,545	22,994	1,545,179	0.2%	1.5%	0.7	1.1	36 Electronic Equipment
37 Transportation Equipment	2,428	31,112	1,521,541	0.2%	2.0%	0.7	1.5	37 Transportation Equipment
38 Instruments	777	2,741	813,682	0.1%	0.3%	0.4	0.3	38 Instruments
39 Miscellaneous Products	356	4,677	391,657	0.1%	1.2%	0.4	0.9	39 Miscellaneous Products
399 Administrative	1,423	12,039	1,353,914	0.1%	0.9%	0.4	0.7	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 5: Manufacturing Employment in Maryland

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	81,039	1,831,503	102,198,864	0.1%	1.8%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	15,520	187,538	18,558,100	0.1%	1.0%	1.1	0.6	MANUFACTURING
20 Food Products	1,069	17,810	1,541,700	0.1%	1.2%	0.9	0.6	20 Food Products
21 Tobacco Products	0	0	31,115	0.0%	0.0%	0.0	0.0	21 Tobacco Products
22 Textile Mill Products	890	1,458	582,188	0.2%	0.3%	1.9	0.1	22 Textile Mill Products
23 Apparel	833	5,599	843,140	0.1%	0.7%	1.2	0.4	23 Apparel
24 Lumber/Wood Products	680	4,386	732,400	0.1%	0.6%	1.2	0.3	24 Lumber/Wood Products
25 Furniture/Related Products	666	3,222	498,464	0.1%	0.6%	1.7	0.4	25 Furniture/Related Products
26 Paper Products	1,889	7,116	625,764	0.3%	1.1%	3.8	0.6	26 Paper Products
27 Printing/Publishing	1,546	28,893	1,490,400	0.1%	1.9%	1.3	1.1	27 Printing/Publishing
28 Chemical Products	210	13,103	833,230	0.0%	1.6%	0.3	0.9	28 Chemical Products
29 Petroleum Products	92	1,224	108,378	0.1%	1.1%	1.1	0.6	29 Petroleum Products
30 Rubber/Plastics Products	976	9,122	997,421	0.1%	0.9%	1.2	0.5	30 Rubber/Plastics Products
31 Leather/Related Products	575	815	86,480	0.7%	0.9%	8.4	0.5	31 Leather/Related Products
32 Stone/Clay/Glass Products	498	5,178	495,480	0.1%	1.0%	1.3	0.6	32 Stone/Clay/Glass Products
33 Primary Metals	18	7,642	683,433	0.0%	1.1%	0.0	0.6	33 Primary Metals
34 Fabricated Metals	603	9,129	1,462,001	0.0%	0.6%	0.5	0.3	34 Fabricated Metals
35 Industrial Machinery	2,024	14,692	1,920,533	0.1%	0.8%	1.3	0.4	35 Industrial Machinery
36 Electronic Equipment	202	11,437	1,545,179	0.0%	0.7%	0.2	0.4	36 Electronic Equipment
37 Transportation Equipment	1,744	9,228	1,521,541	0.1%	0.6%	1.4	0.3	37 Transportation Equipment
38 Instruments	719	14,917	813,682	0.1%	1.8%	1.1	1.0	38 Instruments
39 Miscellaneous Products	123	2,757	391,657	0.0%	0.7%	0.4	0.4	39 Miscellaneous Products
399 Administrative	163	19,810	1,353,914	0.0%	1.5%	0.2	0.8	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 6: Manufacturing Employment in Mississippi

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	187,021	883,297	102,198,864	0.2%	0.9%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	81,908	238,527	18,558,100	0.4%	1.3%	2.4	1.5	MANUFACTURING
20 Food Products	3,574	27,968	1,541,700	0.2%	1.8%	1.3	2.1	20 Food Products
21 Tobacco Products	0	2	31,115	0.0%	0.0%	0.0	0.0	21 Tobacco Products
22 Textile Mill Products	1,537	4,369	582,188	0.3%	0.8%	1.4	0.9	22 Textile Mill Products
23 Apparel	10,703	23,907	843,140	1.3%	2.8%	6.9	3.3	23 Apparel
24 Lumber/Wood Products	8,123	26,060	732,400	1.1%	3.6%	6.1	4.1	24 Lumber/Wood Products
25 Furniture/Related Products	22,433	27,393	498,464	4.5%	5.5%	24.6	6.4	25 Furniture/Related Products
26 Paper Products	2,209	9,522	625,764	0.4%	1.5%	1.9	1.8	26 Paper Products
27 Printing/Publishing	1,779	7,147	1,490,400	0.1%	0.5%	0.7	0.6	27 Printing/Publishing
28 Chemical Products	1,130	6,772	833,230	0.1%	0.8%	0.7	0.9	28 Chemical Products
29 Petroleum Products	17	1,999	108,378	0.0%	1.8%	0.1	2.1	29 Petroleum Products
30 Rubber/Plastics Products	5,635	12,262	997,421	0.6%	1.2%	3.1	1.4	30 Rubber/Plastics Products
31 Leather/Related Products	554	705	86,480	0.6%	0.8%	3.5	0.9	31 Leather/Related Products
32 Stone/Clay/Glass Products	1,592	5,196	495,480	0.3%	1.0%	1.8	1.2	32 Stone/Clay/Glass Products
33 Primary Metals	1,710	5,117	683,433	0.3%	0.7%	1.4	0.9	33 Primary Metals
34 Fabricated Metals	4,868	12,548	1,462,001	0.3%	0.9%	1.8	1.0	34 Fabricated Metals
35 Industrial Machinery	6,671	18,001	1,920,533	0.3%	0.9%	1.9	1.1	35 Industrial Machinery
36 Electronic Equipment	3,597	19,915	1,545,179	0.2%	1.3%	1.3	1.5	36 Electronic Equipment
37 Transportation Equipment	2,634	20,860	1,521,541	0.2%	1.4%	0.9	1.6	37 Transportation Equipment
38 Instruments	1,127	1,949	813,682	0.1%	0.2%	0.8	0.3	38 Instruments
39 Miscellaneous Products	1,232	3,377	391,657	0.3%	0.9%	1.7	1.0	39 Miscellaneous Products
399 Administrative	783	3,458	1,353,914	0.1%	0.3%	0.3	0.3	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 7: Manufacturing Employment in New York

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	348,524	6,791,036	102,198,864	0.3%	6.6%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	89,957	920,521	18,558,100	0.5%	5.0%	1.4	0.7	MANUFACTURING
20 Food Products	5,773	51,455	1,541,700	0.4%	3.3%	1.1	0.5	20 Food Products
21 Tobacco Products	0	343	31,115	0.0%	1.1%	0.0	0.2	21 Tobacco Products
22 Textile Mill Products	757	17,076	582,188	0.1%	2.9%	0.4	0.4	22 Textile Mill Products
23 Apparel	1,721	82,774	843,140	0.2%	9.8%	0.6	1.5	23 Apparel
24 Lumber/Wood Products	3,101	13,507	732,400	0.4%	1.8%	1.2	0.3	24 Lumber/Wood Products
25 Furniture/Related Products	4,002	17,450	498,464	0.8%	3.5%	2.4	0.5	25 Furniture/Related Products
26 Paper Products	1,053	31,656	625,764	0.2%	5.1%	0.5	0.8	26 Paper Products
27 Printing/Publishing	6,773	128,551	1,490,400	0.5%	8.6%	1.3	1.3	27 Printing/Publishing
28 Chemical Products	2,292	43,347	833,230	0.3%	5.2%	0.8	0.8	28 Chemical Products
29 Petroleum Products	216	1,467	108,378	0.2%	1.4%	0.6	0.2	29 Petroleum Products
30 Rubber/Plastics Products	2,826	34,342	997,421	0.3%	3.4%	0.8	0.5	30 Rubber/Plastics Products
31 Leather/Related Products	189	5,789	86,480	0.2%	6.7%	0.6	1.0	31 Leather/Related Products
32 Stone/Clay/Glass Products	4,277	19,255	495,480	0.9%	3.9%	2.5	0.6	32 Stone/Clay/Glass Products
33 Primary Metals	1,349	20,417	683,433	0.2%	3.0%	0.6	0.4	33 Primary Metals
34 Fabricated Metals	6,429	55,678	1,462,001	0.4%	3.8%	1.3	0.6	34 Fabricated Metals
35 Industrial Machinery	15,368	79,999	1,920,533	0.8%	4.2%	2.3	0.6	35 Industrial Machinery
36 Electronic Equipment	20,606	83,900	1,545,179	1.3%	5.4%	3.9	0.8	36 Electronic Equipment
37 Transportation Equipment	2,775	31,128	1,521,541	0.2%	2.0%	0.5	0.3	37 Transportation Equipment
38 Instruments	6,611	78,499	813,682	0.8%	9.6%	2.4	1.5	38 Instruments
39 Miscellaneous Products	675	36,470	391,657	0.2%	9.3%	0.5	1.4	39 Miscellaneous Products
399 Administrative	3,164	87,418	1,353,914	0.2%	6.5%	0.7	1.0	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 8: Manufacturing Employment in North Carolina

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	558,915	3,059,041	102,198,864	0.5%	3.0%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	187,111	861,525	18,558,100	1.0%	4.6%	1.8	1.6	MANUFACTURING
20 Food Products	8,486	56,430	1,541,700	0.6%	3.7%	1.0	1.2	20 Food Products
21 Tobacco Products	3,941	11,444	31,115	12.7%	36.8%	23.2	12.3	21 Tobacco Products
22 Textile Mill Products	42,665	172,933	582,188	7.3%	29.7%	13.4	9.9	22 Textile Mill Products
23 Apparel	14,624	56,979	843,140	1.7%	6.8%	3.2	2.3	23 Apparel
24 Lumber/Wood Products	8,570	43,771	732,400	1.2%	6.0%	2.1	2.0	24 Lumber/Wood Products
25 Furniture/Related Products	27,360	75,586	498,464	5.5%	15.2%	10.0	5.1	25 Furniture/Related Products
26 Paper Products	6,152	22,520	625,764	1.0%	3.6%	1.8	1.2	26 Paper Products
27 Printing/Publishing	4,389	31,334	1,490,400	0.3%	2.1%	0.5	0.7	27 Printing/Publishing
28 Chemical Products	4,879	38,919	833,230	0.6%	4.7%	1.1	1.6	28 Chemical Products
29 Petroleum Products	16	739	108,378	0.0%	0.7%	0.0	0.2	29 Petroleum Products
30 Rubber/Plastics Products	8,058	44,172	997,421	0.8%	4.4%	1.5	1.5	30 Rubber/Plastics Products
31 Leather/Related Products	1,303	2,376	86,480	1.5%	2.7%	2.8	0.9	31 Leather/Related Products
32 Stone/Clay/Glass Products	3,246	22,697	495,480	0.7%	4.6%	1.2	1.5	32 Stone/Clay/Glass Products
33 Primary Metals	2,373	13,671	683,433	0.3%	2.0%	0.6	0.7	33 Primary Metals
34 Fabricated Metals	6,260	34,852	1,462,001	0.4%	2.4%	0.8	0.8	34 Fabricated Metals
35 Industrial Machinery	9,431	69,893	1,920,533	0.5%	3.6%	0.9	1.2	35 Industrial Machinery
36 Electronic Equipment	12,805	65,200	1,545,179	0.8%	4.2%	1.5	1.4	36 Electronic Equipment
37 Transportation Equipment	4,377	28,807	1,521,541	0.3%	1.9%	0.5	0.6	37 Transportation Equipment
38 Instruments	3,404	13,741	813,682	0.4%	1.7%	0.8	0.6	38 Instruments
39 Miscellaneous Products	1,586	9,147	391,657	0.4%	2.3%	0.7	0.8	39 Miscellaneous Products
399 Administrative	13,186	46,314	1,353,914	1.0%	3.4%	1.8	1.1	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).

SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 9: Manufacturing Employment in Ohio

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	374,690	4,640,371	102,198,864	0.4%	4.5%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	96,741	1,083,429	18,558,100	0.5%	5.8%	1.4	1.3	MANUFACTURING
20 Food Products	5,468	53,210	1,541,700	0.4%	3.5%	1.0	0.8	20 Food Products
21 Tobacco Products	0	0	31,115	0.0%	0.0%	0.0	0.0	21 Tobacco Products
22 Textile Mill Products	484	3,727	582,188	0.1%	0.6%	0.2	0.1	22 Textile Mill Products
23 Apparel	3,254	13,817	843,140	0.4%	1.6%	1.1	0.4	23 Apparel
24 Lumber/Wood Products	10,485	23,856	732,400	1.4%	3.3%	3.9	0.7	24 Lumber/Wood Products
25 Furniture/Related Products	1,166	14,970	498,464	0.2%	3.0%	0.6	0.7	25 Furniture/Related Products
26 Paper Products	5,282	32,248	625,764	0.8%	5.2%	2.3	1.1	26 Paper Products
27 Printing/Publishing	4,829	68,542	1,490,400	0.3%	4.6%	0.9	1.0	27 Printing/Publishing
28 Chemical Products	5,863	41,633	833,230	0.7%	5.0%	1.9	1.1	28 Chemical Products
29 Petroleum Products	216	5,290	108,378	0.2%	4.9%	0.5	1.1	29 Petroleum Products
30 Rubber/Plastics Products	8,296	93,510	997,421	0.8%	9.4%	2.3	2.1	30 Rubber/Plastics Products
31 Leather/Related Products	579	1,896	86,480	0.7%	2.2%	1.8	0.5	31 Leather/Related Products
32 Stone/Clay/Glass Products	6,574	39,196	495,480	1.3%	7.9%	3.6	1.7	32 Stone/Clay/Glass Products
33 Primary Metals	11,764	80,851	683,433	1.7%	11.8%	4.7	2.6	33 Primary Metals
34 Fabricated Metals	8,791	135,140	1,462,001	0.6%	9.2%	1.6	2.0	34 Fabricated Metals
35 Industrial Machinery	8,439	151,537	1,920,533	0.4%	7.9%	1.2	1.7	35 Industrial Machinery
36 Electronic Equipment	3,373	72,116	1,545,179	0.2%	4.7%	0.6	1.0	36 Electronic Equipment
37 Transportation Equipment	5,429	120,288	1,521,541	0.4%	7.9%	1.0	1.7	37 Transportation Equipment
38 Instruments	2,637	27,510	813,682	0.3%	3.4%	0.9	0.7	38 Instruments
39 Miscellaneous Products	2,382	17,685	391,657	0.6%	4.5%	1.7	1.0	39 Miscellaneous Products
399 Administrative	1,430	86,407	1,353,914	0.1%	6.4%	0.3	1.4	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 10: Manufacturing Employment in Pennsylvania

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	2,059,921	4,729,704	102,198,864	2.0%	4.6%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	416,403	925,852	18,558,100	2.2%	5.0%	1.1	1.1	MANUFACTURING
20 Food Products	25,256	78,390	1,541,700	1.6%	5.1%	0.8	1.1	20 Food Products
21 Tobacco Products	287	683	31,115	0.9%	2.2%	0.5	0.5	21 Tobacco Products
22 Textile Mill Products	10,092	20,868	582,188	1.7%	3.6%	0.9	0.8	22 Textile Mill Products
23 Apparel	17,233	43,673	843,140	2.0%	5.2%	1.0	1.1	23 Apparel
24 Lumber/Wood Products	20,448	30,068	732,400	2.8%	4.1%	1.4	0.9	24 Lumber/Wood Products
25 Furniture/Related Products	7,435	16,183	498,464	1.5%	3.2%	0.7	0.7	25 Furniture/Related Products
26 Paper Products	15,733	33,756	625,764	2.5%	5.4%	1.2	1.2	26 Paper Products
27 Printing/Publishing	26,504	83,862	1,490,400	1.8%	5.6%	0.9	1.2	27 Printing/Publishing
28 Chemical Products	11,293	31,468	833,230	1.4%	3.8%	0.7	0.8	28 Chemical Products
29 Petroleum Products	2,685	7,742	108,378	2.5%	7.1%	1.2	1.5	29 Petroleum Products
30 Rubber/Plastics Products	24,849	46,197	997,421	2.5%	4.6%	1.2	1.0	30 Rubber/Plastics Products
31 Leather/Related Products	2,371	4,641	86,480	2.7%	5.4%	1.4	1.2	31 Leather/Related Products
32 Stone/Clay/Glass Products	21,862	34,028	495,480	4.4%	6.9%	2.2	1.5	32 Stone/Clay/Glass Products
33 Primary Metals	43,035	70,463	683,433	6.3%	10.3%	3.1	2.2	33 Primary Metals
34 Fabricated Metals	44,654	81,027	1,462,001	3.1%	5.5%	1.5	1.2	34 Fabricated Metals
35 Industrial Machinery	45,159	91,763	1,920,533	2.4%	4.8%	1.2	1.0	35 Industrial Machinery
36 Electronic Equipment	28,810	67,742	1,545,179	1.9%	4.4%	0.9	0.9	36 Electronic Equipment
37 Transportation Equipment	18,915	43,940	1,521,541	1.2%	2.9%	0.6	0.6	37 Transportation Equipment
38 Instruments	15,705	33,577	813,682	1.9%	4.1%	1.0	0.9	38 Instruments
39 Miscellaneous Products	8,604	19,475	391,657	2.2%	5.0%	1.1	1.1	39 Miscellaneous Products
399 Administrative	25,473	86,306	1,353,914	1.9%	6.4%	0.9	1.4	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 11: Manufacturing Employment in South Carolina

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	461,577	1,433,051	102,198,864	0.5%	1.4%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	136,462	367,565	18,558,100	0.7%	2.0%	1.6	1.4	MANUFACTURING
20 Food Products	3,705	15,844	1,541,700	0.2%	1.0%	0.5	0.7	20 Food Products
21 Tobacco Products	0	0	31,115	0.0%	0.0%	0.0	0.0	21 Tobacco Products
22 Textile Mill Products	32,104	73,459	582,188	5.5%	12.6%	12.2	9.0	22 Textile Mill Products
23 Apparel	8,446	28,333	843,140	1.0%	3.4%	2.2	2.4	23 Apparel
24 Lumber/Wood Products	1,880	14,878	732,400	0.3%	2.0%	0.6	1.4	24 Lumber/Wood Products
25 Furniture/Related Products	884	4,655	498,464	0.2%	0.9%	0.4	0.7	25 Furniture/Related Products
26 Paper Products	3,317	14,266	625,764	0.5%	2.3%	1.2	1.6	26 Paper Products
27 Printing/Publishing	4,042	11,073	1,490,400	0.3%	0.7%	0.6	0.5	27 Printing/Publishing
28 Chemical Products	9,898	40,592	833,230	1.2%	4.9%	2.6	3.5	28 Chemical Products
29 Petroleum Products	9	315	108,378	0.0%	0.3%	0.0	0.2	29 Petroleum Products
30 Rubber/Plastics Products	10,612	22,600	997,421	1.1%	2.3%	2.4	1.6	30 Rubber/Plastics Products
31 Leather/Related Products	9	23	86,480	0.0%	0.0%	0.0	0.0	31 Leather/Related Products
32 Stone/Clay/Glass Products	3,280	10,174	495,480	0.7%	2.1%	1.5	1.5	32 Stone/Clay/Glass Products
33 Primary Metals	2,459	8,501	683,433	0.4%	1.2%	0.8	0.9	33 Primary Metals
34 Fabricated Metals	5,564	19,434	1,462,001	0.4%	1.3%	0.8	0.9	34 Fabricated Metals
35 Industrial Machinery	17,504	34,834	1,920,533	0.9%	1.8%	2.0	1.3	35 Industrial Machinery
36 Electronic Equipment	13,071	29,470	1,545,179	0.8%	1.9%	1.9	1.4	36 Electronic Equipment
37 Transportation Equipment	8,073	17,213	1,521,541	0.5%	1.1%	1.2	0.8	37 Transportation Equipment
38 Instruments	1,771	4,911	813,682	0.2%	0.6%	0.5	0.4	38 Instruments
39 Miscellaneous Products	1,900	3,279	391,657	0.5%	0.8%	1.1	0.6	39 Miscellaneous Products
399 Administrative	7,934	13,711	1,353,914	0.6%	1.0%	1.3	0.7	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).

SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 12: Manufacturing Employment in Tennessee

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	873,912	2,193,276	102,198,864	0.9%	2.1%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	246,476	519,373	18,558,100	1.3%	2.8%	1.6	1.3	MANUFACTURING
20 Food Products	19,982	37,117	1,541,700	1.3%	2.4%	1.5	1.1	20 Food Products
21 Tobacco Products	0	871	31,115	0.0%	2.8%	0.0	1.3	21 Tobacco Products
22 Textile Mill Products	13,275	18,689	582,188	2.3%	3.2%	2.7	1.5	22 Textile Mill Products
23 Apparel	27,023	43,006	843,140	3.2%	5.1%	3.7	2.4	23 Apparel
24 Lumber/Wood Products	10,316	21,006	732,400	1.4%	2.9%	1.6	1.3	24 Lumber/Wood Products
25 Furniture/Related Products	18,372	26,203	498,464	3.7%	5.3%	4.3	2.4	25 Furniture/Related Products
26 Paper Products	9,611	19,458	625,764	1.5%	3.1%	1.8	1.4	26 Paper Products
27 Printing/Publishing	11,034	35,980	1,490,400	0.7%	2.4%	0.9	1.1	27 Printing/Publishing
28 Chemical Products	24,681	35,015	833,230	3.0%	4.2%	3.5	2.0	28 Chemical Products
29 Petroleum Products	247	1,092	108,378	0.2%	1.0%	0.3	0.5	29 Petroleum Products
30 Rubber/Plastics Products	12,084	36,056	997,421	1.2%	3.6%	1.4	1.7	30 Rubber/Plastics Products
31 Leather/Related Products	1,176	3,821	86,480	1.4%	4.4%	1.6	2.1	31 Leather/Related Products
32 Stone/Clay/Glass Products	7,492	14,516	495,480	1.5%	2.9%	1.8	1.4	32 Stone/Clay/Glass Products
33 Primary Metals	9,674	18,007	683,433	1.4%	2.6%	1.7	1.2	33 Primary Metals
34 Fabricated Metals	15,190	40,007	1,462,001	1.0%	2.7%	1.2	1.3	34 Fabricated Metals
35 Industrial Machinery	17,180	48,469	1,920,533	0.9%	2.5%	1.0	1.2	35 Industrial Machinery
36 Electronic Equipment	14,966	33,680	1,545,179	1.0%	2.2%	1.1	1.0	36 Electronic Equipment
37 Transportation Equipment	18,209	47,034	1,521,541	1.2%	3.1%	1.4	1.4	37 Transportation Equipment
38 Instruments	5,607	8,956	813,682	0.7%	1.1%	0.8	0.5	38 Instruments
39 Miscellaneous Products	5,030	11,822	391,657	1.3%	3.0%	1.5	1.4	39 Miscellaneous Products
399 Administrative	5,327	18,568	1,353,914	0.4%	1.4%	0.5	0.6	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 13: Manufacturing Employment in Virginia

	ARC Region Empt.	State Empt.	U.S. Empt.	ARC as % of U.S. Empt.	State as % of U.S. Empt.	ARC LQ*	State LQ*	
TOTAL ECONOMY	186,421	2,523,741	102,198,864	0.2%	2.5%	1.0	1.0	TOTAL ECONOMY
MANUFACTURING	58,816	398,835	18,558,100	0.3%	2.1%	1.7	0.9	MANUFACTURING
20 Food Products	1,595	36,496	1,541,700	0.1%	2.4%	0.6	1.0	20 Food Products
21 Tobacco Products	0	8,930	31,115	0.0%	28.7%	0.0	11.6	21 Tobacco Products
22 Textile Mill Products	6,267	27,814	582,188	1.1%	4.8%	5.9	1.9	22 Textile Mill Products
23 Apparel	8,192	24,763	843,140	1.0%	2.9%	5.3	1.2	23 Apparel
24 Lumber/Wood Products	3,535	24,692	732,400	0.5%	3.4%	2.6	1.4	24 Lumber/Wood Products
25 Furniture/Related Products	4,738	20,126	498,464	1.0%	4.0%	5.2	1.6	25 Furniture/Related Products
26 Paper Products	2,023	16,129	625,764	0.3%	2.6%	1.8	1.0	26 Paper Products
27 Printing/Publishing	1,079	35,624	1,490,400	0.1%	2.4%	0.4	1.0	27 Printing/Publishing
28 Chemical Products	3,987	20,317	833,230	0.5%	2.4%	2.6	1.0	28 Chemical Products
29 Petroleum Products	47	584	108,378	0.0%	0.5%	0.2	0.2	29 Petroleum Products
30 Rubber/Plastics Products	3,608	21,166	997,421	0.4%	2.1%	2.0	0.9	30 Rubber/Plastics Products
31 Leather/Related Products	0	981	86,480	0.0%	1.1%	0.0	0.5	31 Leather/Related Products
32 Stone/Clay/Glass Products	2,174	11,500	495,480	0.4%	2.3%	2.4	0.9	32 Stone/Clay/Glass Products
33 Primary Metals	1,366	7,692	683,433	0.2%	1.1%	1.1	0.5	33 Primary Metals
34 Fabricated Metals	2,691	15,915	1,462,001	0.2%	1.1%	1.0	0.4	34 Fabricated Metals
35 Industrial Machinery	6,433	26,914	1,920,533	0.3%	1.4%	1.8	0.6	35 Industrial Machinery
36 Electronic Equipment	4,251	27,297	1,545,179	0.3%	1.8%	1.5	0.7	36 Electronic Equipment
37 Transportation Equipment	4,784	36,154	1,521,541	0.3%	2.4%	1.7	1.0	37 Transportation Equipment
38 Instruments	1,061	13,928	813,682	0.1%	1.7%	0.7	0.7	38 Instruments
39 Miscellaneous Products	568	4,345	391,657	0.1%	1.1%	0.8	0.4	39 Miscellaneous Products
399 Administrative	417	17,468	1,353,914	0.0%	1.3%	0.2	0.5	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Figure 14: Manufacturing Employment in West Virginia

	State Empt.	U.S. Empt.	State as % of U.S. Empt.	State LQ*	
TOTAL ECONOMY	529,250	102,198,864	0.5%	1.0	TOTAL ECONOMY
MANUFACTURING	77,592	18,558,100	0.4%	0.8	MANUFACTURING
20 Food Products	4,982	1,541,700	0.3%	0.6	20 Food Products
21 Tobacco Products	159	31,115	0.5%	1.0	21 Tobacco Products
22 Textile Mill Products	1,141	582,188	0.2%	0.4	22 Textile Mill Products
23 Apparel	2,109	843,140	0.3%	0.5	23 Apparel
24 Lumber/Wood Products	8,466	732,400	1.2%	2.2	24 Lumber/Wood Products
25 Furniture/Related Products	604	498,464	0.1%	0.2	25 Furniture/Related Products
26 Paper Products	1,066	625,764	0.2%	0.3	26 Paper Products
27 Printing/Publishing	4,867	1,490,400	0.3%	0.6	27 Printing/Publishing
28 Chemical Products	13,193	833,230	1.6%	3.1	28 Chemical Products
29 Petroleum Products	464	108,378	0.4%	0.8	29 Petroleum Products
30 Rubber/Plastics Products	2,839	997,421	0.3%	0.5	30 Rubber/Plastics Products
31 Leather/Related Products	707	86,480	0.8%	1.6	31 Leather/Related Products
32 Stone/Clay/Glass Products	6,035	495,480	1.2%	2.4	32 Stone/Clay/Glass Products
33 Primary Metals	12,209	683,433	1.8%	3.4	33 Primary Metals
34 Fabricated Metals	6,049	1,462,001	0.4%	0.8	34 Fabricated Metals
35 Industrial Machinery	4,782	1,920,533	0.2%	0.5	35 Industrial Machinery
36 Electronic Equipment	2,457	1,545,179	0.2%	0.3	36 Electronic Equipment
37 Transportation Equipment	2,366	1,521,541	0.2%	0.3	37 Transportation Equipment
38 Instruments	1,210	813,682	0.1%	0.3	38 Instruments
39 Miscellaneous Products	970	391,657	0.2%	0.5	39 Miscellaneous Products
399 Administrative	917	1,353,914	0.1%	0.1	399 Administrative

* The Location Quotient (LQ) is calculated by dividing the local employment share for a sector (i.e., the proportion that a sector in the ARC region or State is of all jobs in the ARC region or State) by the national employment share for that sector (the proportion of that sector in the U.S. of all jobs in the U.S.).
SOURCE: County Business Patterns, U.S. Dept. of Commerce, 1996.

Community Development Organizations Serving the Appalachian Region

As part of this project, an attempt was made to locate a list of community development organizations that are active in economic development and interfirm networking activities in the Appalachian region. No comprehensive listing of community development organizations exists for the United States. A partial list of such organizations serving the Appalachian counties in different states was obtained from the national trade association of community development organizations—the National Congress of Community Economic Development (NCCED), Washington, DC. This list only represents organizations that are members of NCCED; hence, it is very incomplete in regard to the population of such organizations.

Community Service Program, 601 17th Street, Tuscaloosa, AL, 35401.

CAA of North Central Alabama, P.O. Box 1788, Decatur, AL, 35602.

Kentucky Highlands Investment Corp., P.O. Box 1738, London, KY, 40743.

Mountain Association for CED, 433 Chestnut Street, Berea, KY, 40403.

Brighton Center, Inc., P.O. Box 325, Newport, KY, 41072.

Kentucky Communities EOC, P.O. Box 490, Barbourville, KY, 40906.

Garrett County CAC, Inc., 104 East Center Street, Oakland, MD, 21550.

Rural Revitalization Corporation, 67 Main Street, Salamanca, NY, 14779.

Chautauqua Opportunities, Inc., 17 West Courtney Street, Dunkirk, NY, 14048.

Delaware Opportunities, Inc., 47 Main Street, Delhi, NY, 13753.

Western Door Development Corp., 25 Church Street, Salamanca, NY, 14779.

Wachovia CDC, 100 North Main Street, Winston-Salem, NC, 27150.

Appalachian Center for Economic Networks, 94 North Columbus Road, Athens, OH, 45701.

Enterprise Development Corporation, 9030 Hocking Hills Drive, The Plains, OH, 45780.

Pittsburgh Partnership, 130 7th Street, Suite 1200, Pittsburgh, PA, 15222.

Hill CDC, 2015-17 Centre Avenue, Pittsburgh, PA, 15219.

Fayette County CAA, Inc., 137 N. Beeson Ave., Uniontown, PA, 15401.

Greater Erie Community Action Commission, 18 W. 9th Street, Erie, PA, 16501.

Mercer County CAA, P.O. Box 667, Sharon, PA, 16146.

SHARE/Homeless Service Division, 1425 Augusta Street, Greenville, SC, 29605.

United Neighborhood EDC, P.O. Box 384, Greenville, SC, 29602.

Scott Morgan CDC, P.O. Box 270, Robbins, TN, 37852.

Hope for Chattanooga, 2412 E. 4th Street, Chattanooga, TN, 37409.

Westside CDC, 1200 Grove Street, #205, Chattanooga, TN, 37403.

CDC of 28th Legislative District, P.O. Box 4703, Chattanooga, TN, 37405.

Business Associations for Manufacturing Industries

The following listing of business associations was extracted from the *Encyclopedia of Associations*. The listing is incomplete in that it does not include strictly local associations; there are other gaps, as the fieldwork for this project uncovered (i.e., missed organizations). Nevertheless, it indicates to what extent an industrial sector is institutionally organized or not. Associations serving the manufacturers of transportation equipment (SIC 37) were not listed in this publication—although other auto-related associations (e.g., serving auto parts wholesalers). NA = Not Available.

Sector/Association Name	City	State	Member
<i>SIC 20-Food Processing and related</i>			
<i>D.C. Area Location:</i>			
Snack Food Assn. (SFA)	Alexandria	VA	900
American Frozen Food Institute (AFFI)	McLean	VA	550
Intl. Fresh-Cut Produce Assn. (IFPA)	Alexandria	VA	550
Natl. Food Processors Assn. (NFPA)	Washington	DC	500
Natl. Confectioners Assn. of the U.S. (NCA)	McLean	VA	310
American Sugar Alliance (ASA)	Washington	DC	300
Peanut and Tree Nut Processors Assn. (PTNPA)	Potomac	MD	160
Grocery Manufacturers of America (GMA)	Washington	DC	135
Flavor and Extract Manufacturers Assn. of the U.S. (FEMA)	Washington	DC	130
Natl. Pasta Assn. (NPA)	Arlington	VA	80
US Cane Sugar Refiners' Assn. (USCSRA)	Washington	DC	56
US Canola Assn. (USCA)	Washington	DC	50
Natl. Frozen Pizza Institute (NFPI)	McLean	VA	40
Council of Food Processors Assn. Executives (CFPAE)	Washington	DC	30
North American Natural Casing Assn. (NANCA)	Falls Church	VA	30
Intl. Food Information Council (IFIC)	Washington	DC	27
Natl. Seasoning Manufacturers Assn. (NSMA)	Potomac	MD	25
Sugar Assn. (SAI)	Washington	DC	23
Intl. Federation of Grocery Manufacturers Assns. (IAGMA)	Washington	DC	20
Sweetener Users Assn. (SUA)	Arlington	VA	15
Glutamate Assn. U.S. (TGA)	Washington	DC	12
Chocolate Manufacturers Assn. of the USA (CMA)	McLean	VA	11
Intl. Technical Caramel Assn. (ITCA)	Washington	DC	10
US Beet Sugar Assn. (USBSA)	Washington	DC	10
Corn Refiners Assn. (CRA)	Washington	DC	9

Frozen Potato Products Institute (FPPI)	McLean	VA	7
Soy Protein Council (SPC)	Washington	DC	3
American Wholesale Marketers Assn. (AWMA)	Washington	DC	NA
Food Processors Institute (FPI)	Washington	DC	NA
Animal Industry Foundation (AIF)	Arlington	VA	NA
Intl. Frozen Food Assn. (IFFA)	McLean	VA	NA

Appalachian State Location:

American Beekeeping Federation (ABF)	Jesup	GA	1800
Natl. Barbeque Assn. (NBBQA)	Charlotte	NC	900
Natl. Frozen Food Assn. (NFFA)	Harrisburg	PA	800
Guard Society (GS)	Worthington	OH	400
Pennsylvania Manufacturing Confectioners Assn. (PMCA)	Center Valley	PA	320
Assn. for Dressings and Sauces (ADS)	Atlanta	GA	250
Natl. Assn. of Food and Beverage Recruiters	Richmond	VA	250
Natl. Poultry and Food Distributors Assn. (NPFDA)	Gainesville	GA	250
Refrigerated Foods Assn. (RFA)	Atlanta	GA	200
Intl. Jelly and Preserve Assn. (IJPA)	Atlanta	GA	75
Calorie Control Council (CCC)	Atlanta	GA	60
Intl. Glutamate Technical Committee (IGTC)	Atlanta	GA	50
Vinegar Institute (VI)	Atlanta	GA	45
Chilled Foods Assn. (CFA)	Atlanta	GA	22
Northamerican Ingredient Marketing Specialists (NIMS)	Atlanta	GA	19
Northwest Cherry Briners (NCB)	Corvallis	OR	17
Intl. Food Additives Council (IFAC)	Atlanta	GA	9
Entreal Nutrition Council (ENC)	Atlanta	GA	4
Comsource Independent Foodservice Companies (CIFC)	Atlanta	GA	

Other:

Intl. Maple Syrup Institute (IMSI)	Hortonville	WI	15000
American Institute of Food Distribution	Fair Lawn	NJ	2400
Natl. Assn. for the Specialty Food Trade (NASFT)	New York	NY	1500
Les Amis D'Escoffier	Leicester	MA	1350
International Dairy-Deli-Bakery Assn. (IDDA)	Madison	WI	1100
Intl. Foodservice Manufacturers Assn. (IFMA)	Chicago	IL	630
Retail Confectioners Intl. (RCI)	Glenview	IL	600
Assn. of Food Industries (AFI)	Matawan	NJ	370
American Spice Trade Assn. (ASTA)	Englewood	NJ	340
Natl. Candy Brokers Assn. (NCBA)	Naperville	IL	300
Natl. Assn. of Flour Distributors (NAFD)	Montville	NJ	225

Natl. Prepared Frozen Food Assn. (NPFFA)	Oradell	NJ	200
Pickle Packers Intl. (PPI)	St. Charles	IL	188
Tortilla Industry Assn. (TIA)	Encino	CA	150
Natl. Assn. of Fruits, Flavors, and Syrups (NAFFS)	Matawan	NJ	139
Cocoa Merchants' Assn. of America (CMAA)	New York	NY	111
Fresh Produce Assn. of the Americas (FPAA)	Nogales	AZ	100
Natl. Sugar Brokers Assn. (NSBA)	New York	NY	100
Italian Wine and Food Institute (IWFI)	New York	NY	71
Natl. Honey Packers and Dealers Assn. (NHPDA)	Matawan	NJ	42
Popcorn Institute (PI)	Chicago	IL	41
Home Baking Assn. (HBA)	Englewood	CO	39
Food Service Marketing Institute (FSMI)	Lake Placide	NY	35
Vermont Maple Industry Council (VMIC)	Burlington	VT	33
Maraschino Cherry and Glace Fruit Processors (MCGFP)	Matawan	NJ	25
Natl. Assn. of Chewing Gum Manufacturers (NACGM)	Moorestown	NJ	25
Greek Food and Wine Institute	New York	NY	18
Intl. Wheat Gluten Assn. (IWGA)	Prairie Village	KS	18
North American Maple Syrup Council (NAMSC)	Hortonville	WI	16
Frozen Vegetable Council (FVC)	Burlingame	CA	9
California Olive Assn. (COA)	Sacramento	CA	7
Culinarians	Yorktown Hts.	NY	NA
Green Olive Trade Assn. (GOTA)	Carlstadt	NJ	NA

SIC 22-Textiles

D.C. Area Location:

US Industrial Fabrics Institute (USIFI)	Washington	DC	45
Am. Textile Manufacturers Institute (ATMI)	Washington	DC	40
Am. Fiber, Textile, Apparel Coalition (AFTAC)	Washington	DC	19
Institutional and Service Textile Distributors Assn. (ISTDA)	Washington	DC	18
Am. Fiber Manufacturers Assn. (AFMA)	Washington	DC	17

Appalachian State Location:

The National Needlework Assn. (TNNA)	Zanesville	OH	1200
Am. Home Sewing and Craft Assn. (AHSCA)	New York	NY	900
Crafted with Pride in USA Council (CPUSAC)	New York	NY	515
Fabric Salesmen's Assn. (FSA)	New York	NY	375
Textured Yarn Assn. of America (TYAA)	Gastonia	NC	350
Knitted Textile Assn. (KTA)	New York	NY	200
Textile Distributors Assn. (TDA)	New York	NY	200

US Assn. of Importers of Textiles and Apparel (USA-ITA)	New York	NY	200
INDA, Assn. of the Nonwoven Fabrics Industry	Cary	NC	170
Textile Fibers and Byproducts Assn. (TFBPA)	Atlanta	GA	166
Textile Quality Control Assn. (TQCA)	Kannapolis	NC	151
National Assn. of Decorative Fabric Distributors	Columbia	SC	130
Am. Yarn Spinners Assn. (AYSA)	Gastonia	NC	120
National Assn. of Textile Supervisors (NATS)	Roebuck	SC	120
Am. Printed Fabrics Council (APFC)	New York	NY	80
Textile Information Users Council (TIUC)	Philadelphia	PA	30
Intl. Silk Assn.-USA (ISA)	New York	NY	28
Acrylic Council	New York	NY	9
Burlap and Jute Assn. (BJA)	New York	NY	8
Durene Assn. of America (DAA)	Gastonia	NC	2
Southeastern Fabric Notions and Crafts Assn. (SEFA)	Duluth	GA	NA
Wool Bureau (WB)	New York	NY	NA

Other:

Embroidery Trade Assn. (ETA)	Gilbert	AZ	2500
Surface Design Assn. (SDA)	Oakland	CA	2200
Industrial Fabrics Assn. Intl. (IFAI)	St. Paul	MN	2000
National Machine Embellishment Instructors and Artists (NMEIA)	Benicia	CA	300
Northern Textile Assn. (NTA)	Boston	MA	300
Schiffli Lace and Embroidery Manufacturers Assn. (SLEMA)	North Bergen	NJ	220
Boston Wool Trade Assn. (BWTA)	Weymouth	MA	130
Embroidery Council of America (ECA)	North Bergen	NJ	100
Schiffli Embroidery Manufacturers Promotion Fund (SEMPB)	North Bergen	NJ	100
Am. Flock Assn. (AFA)	Boston	MA	60
Narrow Fabrics Institute (NFI)	St. Paul	MN	34
Elastic Fabric Manufacturers Council of the Northern Textile Assn. (EFMCNTA)	Boston	MA	32
Am. Reuseable Textile Assn. (ARTA)	Mulberry	FL	30
Wool Manufacturers Council (WMC)	Boston	MA	30
Cashmere and Camel Hair Manufacturers Institute (CCHMI)	Boston	MA	9
Felt Manufacturers Council (FMC)	Boston	MA	6
Am. Wool Council (AWC)	Englewood	CO	NA
TRI/Princeton (TRI)	Princeton	NJ	NA

SIC 23-Apparel*D.C. Area Location:*

American Apparel Manufacturers Assn. (AAMA)	Arlington	VA	670
Custom Tailors and Designers Assn. of America (CTDA)	Washington	DC	350
Knitwear Division-Am. Apparel Manufacturers Assn.	Arlington	VA	NA

Appalachian State Location:

Bureau of Wholesale Sales Representatives (BWSR)	Atlanta	GA	14000
Bureau of Salesmen's National Associations (BSNA)	Atlanta	GA	12000
National Assn. of Men's Sportswear Buyers (NAMSB)	New York	NY	1000
Professional Assn. of Custom Clothiers (PACC)	New York	NY	700
Young Menswear Assn. (YMA)	New York	NY	650
Greater Blouse, Skirt, and Undergarment Assn. (GBSUA)	New York	NY	500
Underfashion Club (UC)	New York	NY	500
National Assn. of Hosiery Manufacturers (NAHM)	Charlotte	NC	425
Fashion Assn. (TFA)	New York	NY	400
National Costumers Assn. (NCA)	Fremont	OH	375
American Apparel Contractors Assn. (AACA)	Atlanta	GA	345
Associated Fur Manufacturers (AFM)	New York	NY	300
Fur Information Council of America (FICA)	New York	NY	300
Intl. Assn. of Clothing Designers (IACD)	New York	NY	300
Apparel Manufacturers Assn. (AMA)	New York	NY	250
National Assn. of Fashion and Accessory Designers (NAFAD)	Cleveland	OH	240
Apparel Guild (AG)	East Meadow	NY	225
Clothing Manufacturers Assn. of the USA (CMA)	New York	NY	200
National Knitwear and Sportswear Assn. (NKSA)	New York	NY	200
United Better Dress Manufacturers Assn. (UBDMA)	New York	NY	200
Council of Fashion Designers of America (CFDA)	New York	NY	190
Affiliated Dress Manufacturers (ADM)	New York	NY	179
National Assn. of Blouse Manufacturers (NABM)	New York	NY	150
Metropolitan Area Apparel Assn. (MAAA)	Bronx	NY	122
American Fur Merchants' Assn. (AFMA)	New York	NY	100
Assn. of Rain Apparel Contractors (ARAC)	New York	NY	100
Ladies Apparel Contractors Assn. (LACA)	New York	NY	100
National Fashion Accessories Assn. (NFAA)	New York	NY	100
Neckwear Assn. of America (NAA)	New York	NY	100
Headwear Information Bureau (HIB)	New York	NY	80
Pleaters, Stitchers and Embroiders Assn. (PSEA)	New York	NY	75
National Assn. of Uniform Manufacturers and Distributors	New York	NY	72

(UME)

United Knitwear Manufacturers League (UKML)	New York	NY	57
Infants', Children's and Girls' Sportswear and Coat Assn. (ICGSCA)	New York	NY	50
United Infants' and Children's Wear Assn. (UICWA)	New York	NY	50
Industrial Association of Juvenile Apparel Manufactures (IAJAM)	New York	NY	45
Knitwear Employers Assn. (KEA)	Brooklyn	NY	40
New York Raincoat Manufacturers Assn. (NYRMA)	New York	NY	35
New York Skirt and Sportswear Assn. (NYSSA)	New York	NY	32
Professional Apparel Assn. (PAA)	Wayne	PA	29
Associated Corset and Brassiere Manufacturers (ACBM)	New York	NY	25
Infant and Juvenile Manufacturers Assn. (IJMA)	New York	NY	15
Intimate Apparel Manufacturers Assn. (IAMA)	New York	NY	15
Jeanswear Communication	New York	NY	13
Bow Tie Manufacturers Assn. (BTMA)	Brooklyn	NY	10
New York Clothing Manufacturers Assn. (NYCMA)	New York	NY	10
Chamber of Commerce of the Apparel Industry (CCAI)	New York	NY	NA
Educational Foundation for the Fashion Industries (EFFI)	New York	NY	NA
National Neckwear Assn. (NNA)	Brooklyn	NY	NA
Professional Knitwear Designers Guild (PKDG)	Wilmington	NC	NA

Other:

American Fashion Assn. (AFA)	Dallas	TX	350
Intl. Formal Wear Assn. (IFA)	Chicago	IL	350
Costume Designers Guild	Sherman Oaks	CA	310
Childrenswear Manufacturers Assn. (CMA)	Moorestown	NJ	160
Western and English Manufacturers Assn. (WAEMA)	Denver	CO	130
Sunglass Assn. of America (SAA)	Norwalk	CT	105
Expo West Trade Assn. (EWTA)	Arvada	CO	45
New England Knitwear and Sportswear Assn. (NEKASA)	Lowell	MA	20

SIC 24-Lumber and Wood ProductsD.C. Area Location:

Kitchen Cabinet Mfrs. Assn. (KCMA)	Reston	VA	350
Hardwood Plywood and Veneer Assn (HPVA)	Reston	VA	190
Am. Wood Preservers Institute (AWPI)	Fairfax	VA	150
Am. Lumber Standard Cmte (ALSC)	Germantown	MD	28
Natl. Lumber and Bldg. Material Dealers Assn. (NLBMDA)	Washington	DC	23
Composite Panel Assn.	Gaithersburg	MD	21

Appalachian State Location:

National Hardwood Lumber Assn. (NHLA)	Memphis	TN	1300
Appalachian Hardwood Mfrs Institute (AHMI)	High Pt.	NC	180
Hardwood Mfrs. Assn. (HMA)	Pittsburgh	PA	116
Wood Component Mfrs. Assn (WCMA)	Marietta	GA	115
Lignin Institute	Atlanta	GA	18
Cork Institute of Am.	Lancaster	PA	15

Other:

National Wood Flooring Assn. (NWFA)	Manchester	MO	1500
Am. Wood Preservers' Assn. (AWPA)	Granbury	TX	1400
Wood Products Mfrs. Assn. (WPMA)	Westminster	MA	647
Am. Institute of Timber Construction	Englewood	CO	400
Cedar Shake and Shingle Bureau (CSSB)	Bellevue	WA	250
NE Lumber Mfrs. Assn. (NELMA)	Cumberland Ctr.	ME	200
Engineered Wood Research Foundation (PRF)	Tacoma	WA	178
National Wood Window and Door Assn. (NWWDA)	Des Plaines	IL	140
APA: The Engineered Wood Assn.	Tacoma	WA	120
Wood Moulding and Millwork Producers Assn. (WMMPA)	Woodland	CA	120
Fine Hardwood Veneer Assn/Am. Walnut Mfrs. Assn. (FHVA/AWMA)	Zionsville	IN	40
CA Redwood Assn (CRA)	Novato	CA	6

SIC 25-FurnitureD.C. Area Location:

Office Furniture Dealer Alliance	Alexandria	VA	700
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Appalachian State Location:

Natl. Home Furnishings Assn. (NHRA)	High Pt.	NC	13500
Intl. Home Furnishings Representatives Assn. (IHFRA)	High Pt.	NC	3200
Am. Furniture Mfrs. Assn. (AFMA)	High Pt.	NC	336
Am. Society of Furniture Designers (ASFD)	High Pt.	NC	262
Intl. Wholesale Furniture Assn. (NWFA)	High Pt.	NC	127
Summer and Casual Furniture Mfrs. Assn. (SCFMA)	High Pt.	NC	93
Intl. Home Furnishings Marketing Assn. (IHFMA)	High Pt.	NC	56
Upholstered Furniture Action Council (UFAC)	High Pt.	NC	5

Other:

Home Furnishings Intl. Assn. (HFIA)	Dallas	TX	1600
Futon Assn. Intl. (FAI)	Chico	CA	450
Natl. Assn. of Casual Furniture Retailers (NACFR)	Chicago	IL	400
Specialty Sleep Assn.	Moorestown	NJ	334
Business and Institutional Furniture Mfrs. Assn. (BIFMA)	Grand Rapids	MI	240
Furniture Rental Assn. of Am. (FRAA)	Indianapolis	IN	60
Grand Rapids Area Furniture Mfrs. Assn. (GRAFMA)	Grand Rapids	MI	50
Natl. Rep/Wholesaler Assn. (NR/WA)	Richardson	TX	40

SIC 27-PrintingD.C. Area Location:

Printing Industries of America (PIA)	Alexandria	VA	13780
Master Printers of America (MPA)	Alexandria	VA	9500
Screenprinting and Graphic Imaging Assn. Intl. (SGIA)	Fairfax	VA	3300
Web Offset Assn. (WOA)	Alexandria	VA	1500
Digital Printing and Imaging Assn. (DPI)	Fairfax	VA	800
Non-Heatset Web Section (NWS)	Alexandria	VA	650
Graphic Communications Assn. (GCA)	Alexandria	VA	350
Assn. for Suppliers of Printing and Publishing Technologies (NPES)	Reston	VA	300
Graphic Arts Marketing Information Service (GAMIS)	Alexandria	VA	70
Magazine Printers Section (MPS)	Alexandria	VA	28
Screen Printing Technical Foundation (SPTF)	Fairfax	VA	

Appalachian State Location:

American Institute of Graphic Arts (AIGA)	New York	NY	6700
Graphic Arts Technical Foundation (GATF)	Pittsburgh	PA	5000
National Assn. of Litho Clubs (NALC)	Cincinnati	OH	4500
Flexographic Technical Assn. (FTA)	Ronkonkoma	NY	1700
Graphic Arts Sales Foundation (GASF)	West Chester	PA	1500
National Metal Decorators Assn. (NMDA)	Timonium	MD	800
Assn. of Graphic Communications (AGC)	New York	NY	525
Women in Production (WIP)	New York	NY	500
Direct Marketing Assn. Catalog Council (DMAACC)	New York	NY	378
Research and Engineering Council of the Graphic Arts Industry (RECGAI)	Chadds Ford	PA	325
Gravure Assn. of America (GAA)	Rochester	NY	250
Assn. of College and University Printers (ACUP)	University Pk.	PA	100
Graphic Arts Council of North America (GACNA)	Sewickley	PA	4
Assn. for Graphic Arts Training	Nashville	TN	NA

Graphic Artists Guild Foundation (GAGF)	New York	NY	NA
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Other:

Intl. Assn. of Printing House Craftsmen (IAPHC)	Minneapolis	MN	10000
National Assn. of Quick Printers (NAQP)	Chicago	IL	5000
National Assn. of Printers and Lithographers (NAPL)	Teaneck	NJ	3700
Xplor Intl. (XPLOR)	Torrance	CA	2300
Intl. Publishing Management Assn. (IPMA)	Liberty	MO	2200
Printing Brokerage/Buyers Assn. (PB/BA)	Palm Beach	FL	1100
Binding Industries of America (BIA)	Chicago	IL	325
California Society of Printmakers (CSP)	Berkeley	CA	300
National State Publishing Assn. (NSPA)	Liberty	MO	125
Library Binding Institute (LBI)	Edina	MN	92
Book Manufacturers Institute (BMI)	Wellesley	MA	90

SIC 28-ChemicalsD.C. Area Location:

Chemical Specialties Manufacturers Assn. (CSMA)	Washington	DC	425
Natl. Assn. of Chemical Distributors (NACD)	Arlington	VA	265
Alliance for Responsible Atmospheric Policy	Arlington	VA	250
Synthetic Organic Chemical Manufacturers Assn. (SOCMA)	Washington	DC	235
Chlorine Institute (CI)	Washington	DC	221
Halogenated Solvents Industry Alliance (HSIA)	Washington	DC	200
Chemical Manufacturers Assn. (CMA)	Arlington	VA	195
American Crop Protection Assn. (ADFA)	Washington	DC	87
Automotive Chemical Manufacturers Council (ACMC)	Washington	DC	45
Sulphur Institute (TSI)	Washington	DC	28
Natl. Lime Assn. (NLA)	Arlington	VA	28
Institute for Polyacrylate Absorbents (IPA)	Washington	DC	18
Methyl Tertiary Butyl Ether Task Force (MTBETF)	Washington	DC	11
The Acrylonitrile Group	Washington	DC	10
Silicones Environmental Health and Safety Council (SEHSC)	Reston	VA	10
Petrochemical Energy Group (PEG)	Washington	DC	9
Alkyl Amines Council (AAC)	Washington	DC	7
Styrene Butadiene Latex Manufacturers Council (SBLMC)	Washington	DC	7
Aniline Assn. (AA)	Washington	DC	5
Basic Acrylic Monomer Manufacturers Assn. (BAMM)	Washington	DC	5

Tributyl Phosphate Task Force (TPTF)	Washington	DC	4
Chlorinated Paraffins Industry Assn. (CPIA)	Washington	DC	3
Chlorobenzene Producers Assn. (CPA)	Washington	DC	3
Methyl Chloride Industry Association (MCIA)	Washington	DC	NA
Chemtrec Center Non-Emergency Services	Arlington	VA	NA
Council of Chemical Assn. Executives (CCAEC)	Arlington	VA	NA

Appalachian State Location:

Chemical Coaters Assn. Intl. (CCAI)	Cincinnati	OH	1000
Center for Chemical Process Safety (CCPS)	New York	NY	87
Natl. Aerosol Assn. (NAA)	Annapolis	MD	50
Pulp Chemicals Assn. (PCA)	Atlanta	GA	50
Fire Retardant Chemicals Assn. (FRCA)	Lancaster	PA	42
Oleochemicals Division of the Soap and Detergent Assn.	New York	NY	15
Synthetic Amorphous Silica and Silicates Industry Assn. (SASSI)	Pittsburgh	PA	9

Other:

Western Crop Protection Assn. (WCPA)	Sacramento	CA	170
Materials Technology Institute of the Chemical Process Industries (MTI)	St. Louis	MO	42
Embalming Chemical Manufacturers Assn. (ECMA)	Stratford	CT	5

SIC 30-Rubber/Plastics

D.C. Area Location:

Society of the Plastics Industry (SPI)	Washington	DC	2000
Rubber Manufacturers Assn. (RMA)	Washington	DC	97
American Society of Electroplated Plastics (ASEP)	Herndon	VA	56

Appalachian State Location:

Rubber Division, American Chemical Society	Akron	OH	4300
SPI Composites Institute	New York	NY	415
Plastic and Metal Products Manufacturers Assn. (PMPMA)	New York	NY	150
Polyurethane Division, Society of the Plastics Industry	New York	NY	45
Rubber Trade Assn. of North America (RTA)	Rockville Ctr.	NY	43
Chemical Fabrics and Film Assn. (CFFA)	Cleveland	OH	32

Other:

Latex Advisors Assn. (LAA)	Santa Ana	CA	1300
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Intl. Assn. of Plastics Distributors (IAPD)	Leawood	KS	450
Assn. of Rotational Molders (ARM)	Oak Brook	IL	430
Polyurethane Manufacturers Assn. (PMA)	Glen Ellyn	IL	120
Society for Women in Plastics (SWP)	Sterling Hts.	MI	102
Polyurethane Foam Assn. (PFA)	Wayne	NJ	71
Intl. Institute of Synthetic Rubber Producers (USRP)	Houston	TX	50
EPS Molders Assn. (EPSMA)	Glenview	IL	45

SIC 33-Metal/Steel

D.C. Area Location:

Independent Zinc Alloyers Assn. (IZAA)	Washington	DC	10
The Ferroalloys Assn. (TFA)	Washington	DC	11
American Zinc Assn. (AZA)	Washington	DC	18
Specialty Steel Industry of North America (SSINA)	Washington	DC	19
Cold Finished Steel Bar Institute (CFSBI)	Washington	DC	22
Silver Users Assn. (SUA)	Washington	DC	28
American Iron and Steel Institute (AISI)	Washington	DC	50
Silver Institute (SI)	Washington	DC	54
Intl. Cadmium Assn. (CCI)	Reston	VA	55
Steel Manufacturers Assn. (SMA)	Washington	DC	61
Aluminum Assn. (AAI)	Washington	DC	70
Gold Institute (GI)	Washington	DC	80
Intl. Magnesium Assn. (IMA)	McLean	VA	124
American Institute for Intl. Steel (AIIS)	Washington	DC	200
Non-Ferrous Metals Producers Committee (NFMPC)	Washington	DC	NA

Appalachian State Location:

American Iron Ore Assn. (AIOA)	Cleveland	OH	8
Cemented Carbide Producers Assn. (CCPA)	Cleveland	OH	23
Custom Roll Forming Institute (CRFI)	Richmond Hts.	OH	30
Lead Industries Assn. (LIA)	New York	NY	41
Copper and Brass Servicenter Assn. (CBSA)	King of Prussia	PA	86
National Assn. of Aluminum Distributors (NAAD)	Philadelphia	PA	102
American Copper Council (ACC)	New York	NY	175
Forging Industry Assn. (FIA)	Cleveland	OH	210
Steel Service Center Institute (SSCI)	Cleveland	OH	570

Other:

American Foundrymen's Society (AFS)	Des Plaines	IL	13500
Metal Treating Institute (MTI)	Jacksonville	FL	415

Intl. Titanium Assn.	Boulder	CO	400
Assn. of Steel Distributors (ASD)	Chicago	IL	180
Aluminum Extruders Council (AEC)	Wauconda	IL	169
National Institute of Steel Detailing (NISD)	Arlington	TX	141
American Tin Trade Assn. (ATTA)	Howell	NJ	60
Intl. Hard Anodizing Assn (IHAA)	Moorestown	NJ	30
Foundry Educational Foundation (FEF)	Des Plaines	IL	NA

SIC 34-Fabricated Metals

D.C. Area Location:

Copper and Brass Fabricators Council (CBFC)	Washington	DC	23
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Appalachian State Location:

Precision Metalforming Assn. (PMA)	Richmond Hts.	OH	1500
National Ornamental and Miscellaneous Metals Assn. (NOMMA)	Forest Park	GA	650
National Metal Spinners Assn. (NMSA)	Farmingdale	NY	17

Other:

Fabricators and Manufacturers Assn., Intl. (FMA)	Rockford	IL	2200
Institute of Metal Repair (IMR)	Escondido	CA	800
Foil Stamping and Embossing Assn. (FSEA)	Portland	OR	350
Metal Powder Industries Federation (MPIF)	Princeton	NJ	240
National Assn. of Architectural Metal Manufacturers (NAAMM)	Chicago	IL	118
National Assn. of Graphic and Product Identification Manufacturers (NAME)	Irvine	CA	105
Association of French Mechanical Industries (AFMI)	Chicago	IL	59
Industrial Perforators Assn. (IPA)	Milwaukee	WI	15

SIC 35-Machinery/Machining

D.C. Area Location:

National Tooling and Machining Assn. (NTMA)	Fort Washington	MD	2600
National Assn. of Hose and Accessories Distributors (NAHAD)	Annapolis	MD	540
Manufacturers Alliance for Productivity and Innovation (MAPI)	Arlington	VA	500
American Machine Tool Distributors Assn. (AMTDA)	Rockville	MD	475
Machinery Dealers National Assn. (MDNA)	Silver Spring	MD	470

American Gear Manufacturers Assn. (AGMA)	Alexandria	VA	375
Secondary Materials and Recycled Textiles (SMART)	Bethesda	MD	300
American Boiler Manufacturers Assn. (ABMA)	Arlington	VA	115
American Textile Machinery Assn. (ATMA)	Falls Church	VA	115
Council of Industrial Boiler Owners (CIBO)	Burke	VA	100
American Wire Producers Assn. (AWPA)	Alexandria	VA	98
Manufacturers Standardization Society of the Valve and Fittings Industry (MSS)	Vienna	VA	93
Conveyor Equipment Manufacturers Assn. (CEMA)	Manassas	VA	92
Water and Wastewater Equipment Manufacturers Assn. (WWEMA)	Washington	DC	70
Woodworking Machinery Importers Assn. of America (WMIA)	Baltimore	MD	70
Sewn Products Equipment Suppliers Assn. (SPESA)	Falls Church	VA	50
Process Equipment Manufacturers Assn. (PEMA)	Falls Church	VA	45
American Bearing Manufacturers Assn. (ABMA)	Washington	DC	35
American Paper Machinery Assn. (APMA)	Falls Church	VA	35
Portable Power Equipment Manufacturers Assn. (PPEMA)	Bethesda	MD	17
Mechanical Power Transmission Assn. (MPTA)	Manassas	VA	13
Remanufacturing Industries Council Intl. (RICI)	Fairfax	VA	12
American Chain Assn. (ACA)	Manassas	VA	6
Paper Machine Clothing Council	Washington	DC	NA

Appalachian State Location:

Industrial Distribution Assn. (IDA)	Atlanta	GA	2000
National Welding Supply Assn. (NWSA)	Philadelphia	PA	1200
American Supply and Machinery Manufacturers Assn. (ASMMA)	Cleveland	OH	600
Abrasive Engineering Society (AES)	Philadelphia	PA	400
Material Handling Industry (MHI)	Charlotte	NC	200
Uniform Boiler and Pressure Vessel Laws Society (UBPVLS)	Louisville	KY	200
Wood Machinery Manufacturers of America (WMMA)	Philadelphia	PA	170
Woodworking Machinery Distributors Assn. (WMDA)	King of Prussia	PA	105
US Cutting Tool Institute (USCTI)	Cleveland	OH	100
Fluid Sealing Assn. (FSA)	Wayne	PA	95
Gasket Fabricators Assn. (GFA)	Wayne	PA	92
Industrial Diamond Assn. (IDA)	Skyland	NC	86
National Industrial Glove Distributors Assn. (NIGDA)	Philadelphia	PA	84
National Assn. of Vertical Transportation Professionals	Brooklyn	NY	71

(NAVTP)

Resistance Welder Manufacturers' Assn. (RWMA)	Philadelphia	PA	50
Assn. of Ingersoll-Rand Distributors	Cleveland	OH	45
Compressed Air and Gas Institute (CAGI)	Cleveland	OH	37
Elevator Industries Assn. (EIA)	Southhampton	NY	26
Rack Manufacturers Institute (RMI)	Charlotte	NC	26
Crane Manufacturers Assn. of America (CMAA)	Charlotte	NC	23
Grinding Wheel Institute (GWI)	Cleveland	OH	23
North American Punch Manufacturers Assn. (NAPM)	Lockport	NY	23
American Wire Cloth Institute (AWCI)	Ossining	NY	20
Conveyor Section of the Material Handling Institute (CS)	Charlotte	NC	19
Hoist Manufacturing Institute (HMI)	Charlotte	NC	17
American Apparel Machinery Trade Assn. (AAMTA)	Long Island City	NY	14
Automatic Guided Vehicle Systems Section of the Material Handling Institute (AGVS)	Charlotte	NC	14
Lift Manufacturers Product Section-Material Handling Institute	Charlotte	NC	14
Iron Casting Research Institute (ICRI)	Columbus	OH	13
Shelving Manufacturers Assn. (SMA)	Charlotte	NC	13
Diamond Wheel Manufacturers Institute (DWMI)	Cleveland	OH	11
Machine Knife Assn. (MKA)	Cleveland	OH	11
Automated Storage/Retrieval Systems (AS/RS)	Charlotte	NC	10
Die Set Manufacturers Service Bureau (DSMSB)	Tarrytown	NY	10
Monorail Manufacturers Assn. (MMA)	Charlotte	NC	10
Overhead Components Manufacturers Product Section of the Material Handling Institute	Charlotte	NC	10
National Assn. of Chain Manufacturers (NACM)	York	PA	9
Loading Dock Equipment Manufacturers Assn. (LODEM)	Charlotte	NC	8
Abrasive Grain Assn. (AGA)	Cleveland	OH	7
Automated Electrified Monorail Product Section- Material Handling Institute	Charlotte	NC	7
Coated Abrasives Manufacturers Institute (CAMI)	Cleveland	OH	5

Other:

Surface Mount Technology Assn. (SMTA)	Edina	MN	3600
North American Die Casting Assn. (NADCA)	Rosemont	IL	3200
Specialty Tools and Fasteners Distributors Assn. (STAFDA)	Elk Grove	WI	2085
Associated Equipment Distributors (AED)	Oak Brook	IL	1250
Michigan Tooling Assn. (MTA)	Farmington Hills	MI	775
Material Handling Equipment Distributors Assn.	Vernon Hills	IL	600

(MHEDA)

Construction Industry Manufacturers Assn. (CIMA)	Milwaukee	WI	500
Intl. Assn. of Diecutting and Diemaking (IADD)	Crystal Lake	IL	500
Power Transmission Distributors Assn. (PTDA)	Rosemont	IL	500
Fluid Power Distributors Assn. (FPDA)	Cherry Hill	NJ	482
American Mold Builders Assn. (AMBA)	Roselle	IL	425
Power-Motion Technology Representatives Assn.	Shawnee	KS	350

(PTRA)

National Industrial Belting Assn. (NIBA)	Brookfield	WI	280
Investment Casting Institute	Dallas	TX	275
Non-Ferrous Founders Society (NFFS)	Des Plaines	IL	185
National Fluid Power Assn. (NFPA)	Milwaukee	WI	165
Diecasting Development Council (DDC)	La Grange	IL	130
Bearing Specialists Assn. (BSA)	Glen Ellyn	IL	78
Steel Founders' Society of America (SFSA)	Des Plaines	IL	77
Hydraulic Institute (HI)	Parsippany	NJ	70
Assn. of Vacuum Equipment Manufacturers (AVEM)	Albuquerque	NM	66
Cating Industry Suppliers Assn. (CISA)	Des Plaines	IL	66
Converting Equipment Manufacturers Assn. (CEMA)	Springfield	NJ	50
Web Sling and Tiedown Assn. (WSTDA)	Naperville	IL	50
National Elevator Industry (NEII)	Fort Lee	NJ	40
Pressure Vessel Manufacturers Assn. (PVMA)	Chicago	IL	26
Manufacturers of Aerial Devices and Digger-Derricks Council	Chicago	IL	21
Contractors Pump Bureau (CPB)	Milwaukee	WI	19
Manufacturers of Telescoping and Articulating Cranes Council	Chicago	IL	15
Hydraulic Tool Manufacturers Assn. (HTMA)	Racine	WI	12
National New England Lead Burning Assn.	Woburn	MA	10
Power Crane and Shovel Assn. (PCSA)	Milwaukee	WI	10
Powder Actuated Tool Manufacturers Institute (PATMI)	St. Charles	MO	7
Institute of Caster Manufacturers (ICM)	Chicago	IL	3

SIC 36-Electronics*D.C. Area Location:*

Electronic Industries Assn. (EIA)	Arlington	VA	1500
Joint Electron Device Engineering Council (JEDEC)	Arlington	VA	260
Closed Circuit Television Manufacturing Assn. (CCTMA)	Arlington	VA	50
Electromagnetic Energy Assn. (EEA)	Washington	DC	30
Industry Coalition for Technology Transfer (ICOTT)	Washington	DC	5

Appalachian State Location:

Assn. for High Tech Distribution (AHTD)	Philadelphia	PA	163
Technical Ceramics Manufacturers Assn. (TECMA)	Tarrytown	NY	11

Other:

American Electronics Assn. (AEA)	Santa Clara	CA	3000
Intl. Auto Sound Challenge Assn. (IASCA)	Phoenix	AZ	3000
North American Retail Dealers Assn. (NARDA)	Lombard	IL	2500
Institute for Interconnecting and Packaging Electronic Circuits (IPC)	Northbrook	IL	2200
Intl. Society of Certified Technicians (ISCET)	Fort Worth	TX	2000
Electronics Technicians Assn., Intl. (ETA-I)	Greencastle	IN	1750
Electronics Representatives Assn. (ERA)	Chicago	IL	1650
Semiconductor Equipment and Materials Intl. (SEMI)	Mountain View	CA	1400
National Electronics Service Dealers Assn. (NESDA)	Fort Worth	TX	1000
Asian American Manufacturers Assn. (AAMA)	Menlo Park	CA	650
National Electronic Distributors Assn. (NEDA)	Chicago	IL	400
American Loudspeaker Manufacturers Assn. (ALMA)	Arlington Hts.	IL	50
Surface Mount Equipment Manufacturers Assn. (SMEMA)	Highland Park	IL	50
Assn. of Electronic Distributors (AED)	Los Angeles	CA	35
Variable Resistive Components Institute (VRCI)	Vista	CA	30

SIC 38-Precision InstrumentsD.C. Area Location:

SAMA Group of Assns.	Alexandria	VA	200
Measurement, Control, and Automation Assn. (MCAA)	Vienna	VA	135
Medical Device Manufacturers Assn. (MDMA)	Washington	DC	130
Laboratory Products Assn. (LPA)	Alexandria	VA	125

Appalachian State Location:

American Precision Optics Manufacturers Assn. (APOMA)	Rochester	NY	122
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Other:

American Scientific Glassblowers Society (ASGS)	St. Paul	MN	950
National Assn. of Scientific Material Managers (NAOSMM)	New Orleans	LA	450
Ultrasonic Industry Assn. (UIA)	Cherry Hill	NJ	60

