

# The North Carolina Furniture Cluster



The Microeconomics of Competitiveness

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## 1. Executive Summary

The general decline of manufacturing in the United States has had a major impact on North Carolina and its furniture cluster, which employed 90,000 people in the 1980s but today employs only 47,000. Since 2001, more than 200 furniture companies in North Carolina have closed. Presently, unemployment rates in the counties where the cluster is centered range from 13-15%.

We conducted over twenty interviews with North Carolina industry participants and policy-makers, few of whom sounded optimistic about the current trajectory of the cluster. Our research revealed that firms are focusing on short-term profits instead of building long-run sustainable competitive advantage through investments in automation, productivity, design and innovation.

However, the cluster has many of the essential ingredients for success: highly trained workers, proximity to high quality timber, access to major ports, a location central to 60% of the US market, a strong network of specialized industries (e.g. logistics, warehousing, software, factoring) that support the cluster, and the High Point Market, which connects over 85,000 professional buyers and sellers.

Reinvigorating the cluster will require action from firms, government, and Institutions for Collaboration to improve competitiveness. We present policy recommendations to address the broad issues we have identified as impacting the United States, North Carolina, and the cluster.

### Summary Cluster Recommendations

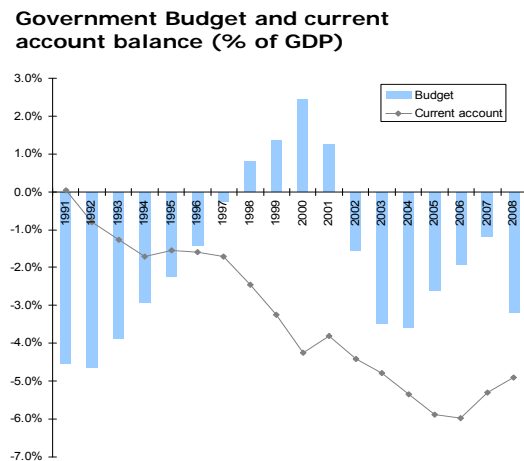
<i>For firms</i>	<ul style="list-style-type: none"><li>• Shift from cost and price-based competition to strategies focused on increasing willingness to pay through customization, faster delivery, higher quality, customer service.</li><li>• Consider one of our suggested four business models to leverage strengths of cluster</li><li>• Invest in capital equipment and processes to automate furniture production.</li><li>• Seek to compete globally by identifying international markets for expansion.</li></ul>
<i>For government</i>	<ul style="list-style-type: none"><li>• Encourage stronger collaboration and communication in the furniture cluster and build bi-partisan consensus around supporting it at the highest levels of government.</li><li>• Use policy to stimulate product and process innovation in the cluster. For example, offer tax credits for plant capital expenditures or grants for research.</li></ul>
<i>For Institutions for Collaboration</i>	<ul style="list-style-type: none"><li>• Develop a holistic cluster strategy, rather than business plans for individual industries.</li><li>• Partner with local colleges and institutions to create programs that teach furniture expertise, particularly in higher value parts of the value chain such as design.</li></ul>

## 2. The United States and its competitive position

The United States of America, with a \$13 trillion GDP representing over 26% of world production, is the most prosperous large economy in the world (EIU, 2008). A relatively mature economy, its real GDP growth averaged approximately 2.5% between 1998 and 2008. Though the economy has contracted in the last year, the US has generally been a hallmark of stability. Structurally, the US economy has low levels of investments: at 15% of GDP, it underinvests relative to its peer group. However, the US has benefited from long-term increases in total factor productivity of about 1% per year.

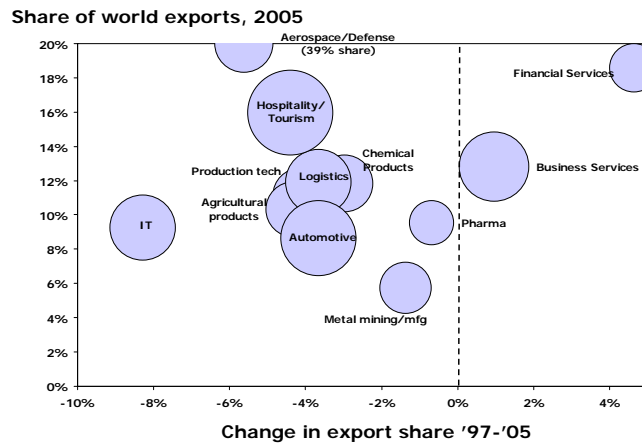
Twin budget and current account balance deficits have increased over time, and at around 65% of national investment, US savings is significantly below that of its peers (EIU, 2008).

Figure 1: US Macroeconomic Statistics



Source: Economist Intelligence Unit

Figure 2: US Exports



Source: Cluster Mapping Project

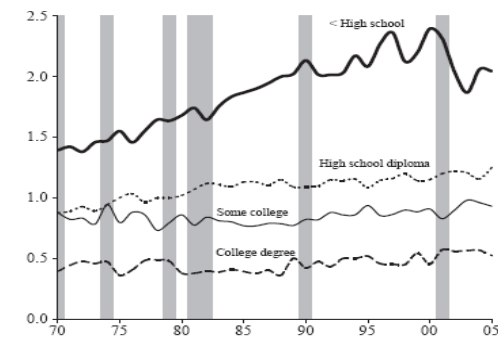
The US has a leading share in a number of clusters. Figure 2 above shows strong export share in clusters ranging from aerospace and chemical products to hospitality. Equally notable is that the US has been losing its dominance in several clusters, particularly IT. The only two clusters gaining share were in services. This provides evidence of a broader trend (ISC, 2006).

Over the last 60 years, the US has been in the midst of a transformation from a goods producing to a service providing economy. In 1943, greater than half of the American workforce not working on a farm was producing goods. Today that figure is less than 19% (BLS, 2007). The service sector has

grown to account for 80% of US GDP (EIU, 2008). North Carolina furniture has been impacted by the same forces driving this trend towards services.

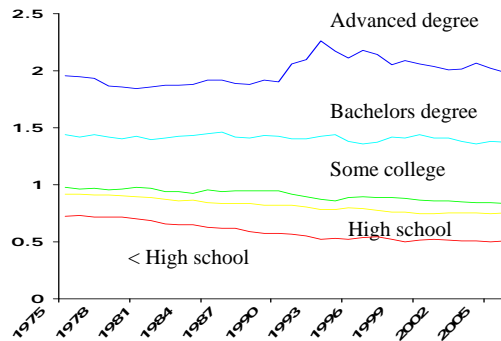
The result of this transformation has been that returns to education have increased over time. An American without a high school diploma was two times more likely to be unemployed than the average American in 2005. This figure has increased from 1.5 in 1970 (FRBSF, 2007). Employment and wages for those not receiving a college degree have gone down relative to average over a similar stretch of time (see **Figure 3** and **Figure 4**).

*Figure 3: Indexed unemployment rates by education level, 1970-2005*



Source: Federal Reserve Bank of San Francisco

*Figure 4: Indexed wages by education level, 1975-2006*



Source: Bureau of Labor Statistics

The result is that inequality, as measured by the Gini coefficient, has risen from an all-time low of 38.6 to an all-time high of 47 in 2006 (Census Bureau, 2007). This compares to about 30 in Western Europe (Alesina et al., 2005). Higher inequality makes structural adjustment a more difficult process.

The US is one of the most competitive countries in the world to do business. It has excellent conditions for innovation, with plentiful venture capital, a flexible labor force, high quality scientific and management institutions, and relative ease to start a new business (GCR, 2008). The US is outstanding at commercializing technology and has the highest share of patents in the world (USPTO). The World Bank ranks the United States third in the world, behind only Singapore and New Zealand, in the Ease of Doing Business Indicator (World Bank, 2008).

There are several factors that erode US competitiveness. According the UN Development Index, the United States is only 20th worldwide in education attainment (UN Development Program, 2007-2008), while the Global Competitiveness Report places US math and science education 38th in the world in quality (GCR, 2008). According to the GCR, the US also suffers from a burdensome regulatory environment (44th), with distortive taxes and subsidies (35th), and too much protectionism concerning free trade (32nd) (GCR, 2008). Finally, the US is investing less in R&D than it used to, eroding its dominance in the field (Porter, 2008).

Figure 5: US Diamond Analysis

	Strengths (Rank)	Weaknesses (Rank)
Demand conditions	<ul style="list-style-type: none"> <li>Strong buyer sophistication (4)</li> <li>Government plays a role in purchasing advance technology products (3)</li> </ul>	<ul style="list-style-type: none"> <li>Lacking demanding regulatory standards (11)</li> <li>Insufficient stringency in environmental standards (15)</li> </ul>
Factor/Input conditions	<ul style="list-style-type: none"> <li>Easy to start a business (2)</li> <li>Available venture capital (1)</li> <li>High quality university, scientific, and management institutions (1)</li> </ul>	<ul style="list-style-type: none"> <li>Quality of math &amp; science education (38)</li> <li>Increasingly unsound banks (39)</li> <li>Burdensome government regulation (44)</li> </ul>
Supporting and related industries	<ul style="list-style-type: none"> <li>State of cluster development and collaboration (1)</li> <li>Availability of latest tech and process machinery (3)</li> </ul>	<ul style="list-style-type: none"> <li>Extent of cluster policy (10)</li> </ul>
Context for firm strategy and rivalry	<ul style="list-style-type: none"> <li>Flexible labor law (1)</li> <li>Intense competition (1)</li> <li>Strong auditing/reporting standards (2)</li> </ul>	<ul style="list-style-type: none"> <li>Distortive tax/subsidies (35)</li> <li>Increasing protectionism—high tariff rate (32)</li> </ul>

US policy has not, thus far, coherently addressed its competitiveness. Industries receive inconsistent levels of regulation, with measures like Sarbanes Oxley over-regulating public companies, but little to no regulation for some financial markets which may have caused the recent economic crisis. The US has historically enforced competition through strong anti-trust standards, but has begun to relax this in recent years (Porter, 2008). The current administration is making efforts to improve factor conditions through investments in education, the capital markets, and infrastructure. But the government’s increasing intervention in the markets is dampening the context for rivalry in the country.

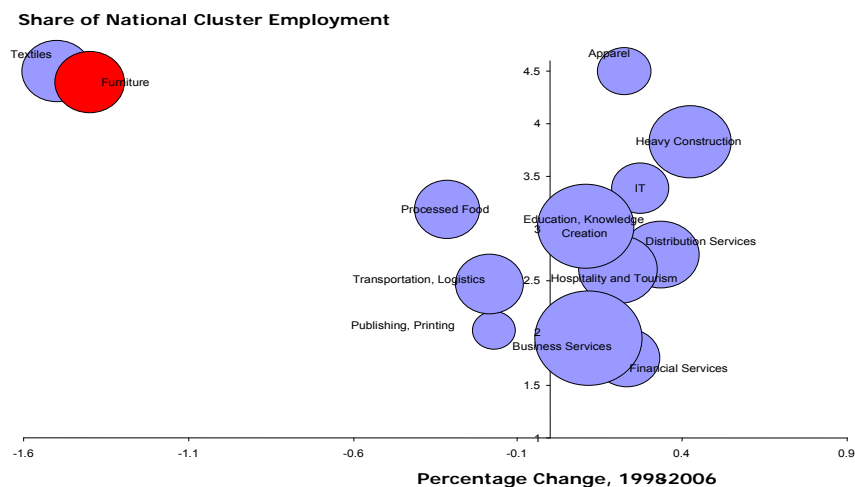
### 3. The North Carolina business environment

North Carolina, called a “valley of humility between two mountains of conceit” during its early years, was initially less cosmopolitan than Virginia and South Carolina, its wealthier, well-endowed neighbors (Martin, 2005). While Charleston, Williamsburg and Richmond dominated the antebellum south, North Carolina emerged as an powerful economic force in the twentieth century. The migration of northern manufacturing jobs into the state, propelled by cheap land, cheap labor, and the absence of

unions transformed the state’s economy from agrarian to industrial.

Over the last 30 years, another economic transformation has taken place. Manufacturing is losing ground to services. In 1977, three industries—tobacco, textiles, and furniture—dominated the state economy. Together, they produced 64% of manufacturing value and 22% of state GDP. In 2005, these industries’ combined share of state GDP had declined to 7%. While productivity increased (e.g. lumber produced approximately 2x the volume of product with less than 50% of the labor), these manufacturing job losses have prompted soul searching from policy-makers. The “Big Three” has been replaced by a “Big Five”—chemical products, food processing, technology, banking, and auto parts—that feature higher value-added activities. Furthermore, new clusters have emerged, such as a pharmaceutical cluster in Research Triangle Park and a financial services cluster in Charlotte. Policy-makers are faced with the decision on whether to stimulate these growing new clusters or preserve declining ones.

*Figure 6: North Carolina share of national employment trends*



Source: Cluster Mapping Project, ISC

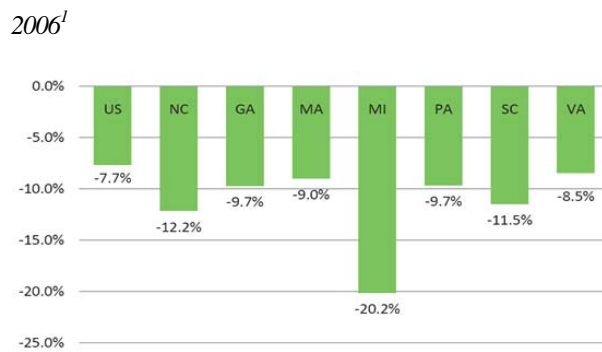
The state’s urban centers (such as Research Triangle Park, which houses large IBM and GlaxoSmithKline research facilities, and Charlotte, home of Bank of America and Wachovia) have seen tremendous economic and population growth, while rural manufacturing-based areas have seen decline. The textile, furniture, and processed food clusters have experienced significant job losses. These clusters

have lost share against other states' clusters since they are less competitive nationally.

Mix changes in composition (manufacturing to services; rural to urban) have substantially reshaped the economy, increasing the volatility of economic growth. Other than Michigan, North Carolina has suffered the largest manufacturing job losses of its peers (see **Figure 7** and **Figure 8**).

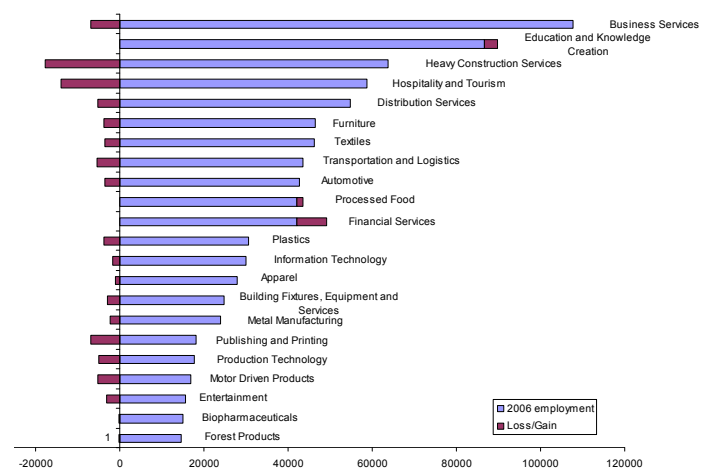
Nevertheless, North Carolina's economy is large and growing. In 2007, on standalone basis, North Carolina's GDP would have made it the 20th largest economy in the world (North Carolina Department of Commerce, 2009). Overall economic performance is in line with regional peers in the Southeast and the US as a whole (see **Figure 9**).

Figure 7: Losses in manufacturing employment, 2002-2007



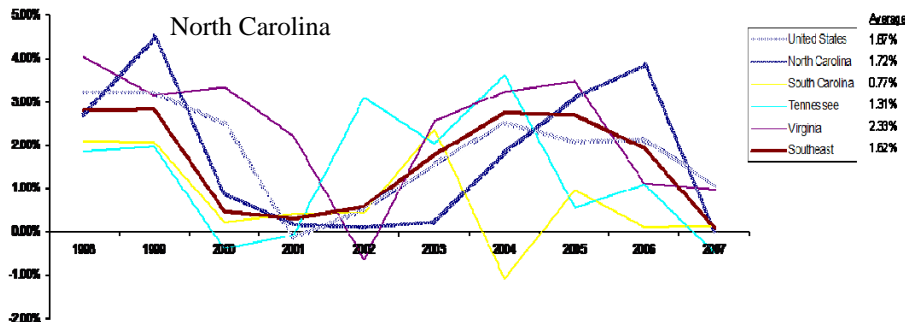
Source: U.S. Department of Commerce

Figure 8: Employment in most NC traded clusters declines, 1998-



Source: Cluster Mapping Project, ISC

Figure 9: Change in GDP per capita



Note: Southeast peer group includes AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV  
Source: Bureau of Economic Analysis

<sup>1</sup> Difference in industry/cluster definitions likely understates magnitude of furniture cluster job losses

An examination of the North Carolina diamond (see **Figure 10**) offers a framework for exploring the evolution of the state’s economy and its position today.

*Figure 10: North Carolina diamond analysis*

	Strengths	Weaknesses	
Demand conditions	<ul style="list-style-type: none"> <li>NC information highway initiative encourages demand for IT</li> <li>Large military presence and substantial purchasing footprint (NC Military Business Center)</li> </ul>	<ul style="list-style-type: none"> <li>Lack of large corporate HQs in the state</li> <li>Infrequent customer feedback</li> </ul>	<p><b>Factor conditions.</b> Low cost labor, cheap electricity relative to the Northern states (powered by coal plants), skilled craftsmen, and cheap land initially made small North Carolina towns an ideal</p>
Factor/Input conditions	<ul style="list-style-type: none"> <li>High quality universities</li> <li>Strong network of community colleges</li> <li>High quality of life</li> <li>Central location to US</li> <li>Skilled workforce, lower than US average wages</li> <li>Low unionization rate</li> </ul>	<ul style="list-style-type: none"> <li>Underperforming K-12 educational system</li> <li>Congested infrastructure</li> <li>High state income tax burden relative to southeast competitors</li> <li>High energy costs relative to southeast competitors</li> <li>Low availability of risk capital</li> </ul>	
Supporting and related industries	<ul style="list-style-type: none"> <li>Wide range of IT, biotech, business &amp; financial services, chemicals/rubbers/plastics, military, furniture</li> <li>Strong anchors (IBM, GSK, BAC, WB)</li> </ul>	<ul style="list-style-type: none"> <li>Lack of cluster-focused recruiting activity</li> <li>NC industrial policy offers incentives to large facilities without appropriate cluster development</li> </ul>	
Context for firm strategy and rivalry	<ul style="list-style-type: none"> <li>Duke, UNC, NCSU, and Research Triangle Park drive innovation through the production of specialized research</li> </ul>	<ul style="list-style-type: none"> <li>Weak collaboration among communities</li> <li>Regionalism</li> <li>Weak collaboration within clusters</li> <li>Insufficient state R&amp;D tax incentives</li> <li>Incentives-based strategy</li> </ul>	

Source: Team analysis

location for textile, furniture, or tobacco factories, creating the manufacturing base in North Carolina.

While North Carolina average wages are still lower than the US, the quality of the education system and infrastructure have become assets today. The state has three “Top 30” U.S. higher education institutions (Duke, University of North Carolina at Chapel Hill, and Wake Forest), nine research universities, and a strong network of 58 community colleges that enrolls 9% of the state population in some form of training. The state’s weak K-12 educational system, congested infrastructure (real highway spending per vehicle is lower in 2004 than 1972) and high income tax burden detract from its competitiveness.

**Demand conditions.** North Carolina lacks large corporate headquarters. For example, the capital city of Raleigh has only one Fortune 500 company, Progress Energy. While IBM and GlaxoSmithKline research centers are located in the Research Triangle Park, their corporate seats are outside the state. This leads to infrequent customer feedback (Porter, 2001). However, a state information highway initiative has stimulated demand for IT. Furthermore, a large military presence and substantial purchasing footprint, centered at the North Carolina Military Business Center, have helped attract federal procurement dollars.

**Supporting and related industries.** Strong anchors in a wide range of IT, biotech, business and



financial services, pharmaceutical, chemicals/rubbers/plastics, military, and furniture companies have driven the development of clusters. However, the lack of cluster-focused recruiting activity has impaired their development. The state Department of Commerce is highly focused on the use of incentives to attract companies. In 2007, this “elephant hunting” mentality led to a \$100 million incentive package for Google to locate a data center that would create a maximum of 210 jobs (Google Picks NC, 2008).

*Context for firm strategy and rivalry.* Our interview program revealed a high degree of regionalism and a lack of collaboration among communities and across clusters. Of the little collaboration there is, most is stimulated by private or academic institutions. Duke, UNC, NCSU, and Research Triangle Park drive innovation through the production of specialized research. Private initiatives include: the UNC Center for Competitive Economies, which coordinates economic development activities, provides information and services; the Emerging Issues Forum, which convenes policy-makers and business leaders to address competitiveness; and the NC Chamber, a statewide IFC. While the General Assembly recently passed the “Quality Jobs and Business Expansion Act” to provide tax credits for qualified employment, investment in machinery and equipment, central administrative offices, R&D, and worker training, many experts we interviewed view the tax incentives as insufficient.<sup>2</sup>

Three broad issues predominate in North Carolina: the labor force transition, the competitiveness policy, and the lack of innovation and commercialization. The labor force has begun transitioning from rural to urban areas as jobs are shifting from manufacturing and agriculture to service and knowledge intensive jobs. Manufacturing is under pressure largely due to global labor factor cost issues, and as a result labor-intensive industries such as textiles, apparel, and furniture have seen job loss. The Tobacco Master Settlement Agreement (MSA) provides buyouts for many agriculture participants, but similar policy action is not expected for manufacturers. This results in rising inequality between rural and urban

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<sup>2</sup> Interview with Richard Stevens, State Senator and Chair of Higher Education Committee and Higher Education Appropriations Committee.

areas as talent flees to urban locations where education and affluence are concentrated. There is little coordination in policy regarding competitiveness. For example, the failure of Global Transpark (an empty, large industrial park located in Eastern North Carolina) highlights a tendency for industrial planning. Incentive programs, such as the Lee Act (which has over \$1 billion in liabilities), JDIG and the One NC Fund have been criticized for their ineffectiveness. Additionally, the high tax structure compared to Southeastern competitors is a disadvantage. North Carolina has the 12th highest personal income tax in the United States and the marginal corporate tax rate of 6.9% is one of highest in the Southeast. Finally, despite high investment, the state has relatively low levels of innovation and commercialization of innovating technologies. North Carolina ranked 14th among peers nationwide in attracting FDI (\$26.1 billion in 2006), experienced relatively high patent growth relative to other US states (13th nationwide), and had the 5th highest net firm creation in the US. Yet still, the state ranks below average for R&D spending rate and educational attainment.

#### **4. Recommendations for US and North Carolina policy-makers**

The US plan for economic growth should be based around its core strength in innovation. Within a skill-based economy, the US must ensure its citizens receive sufficient education to compete in the global economy. The school system must be improved through a consistent, high national standard for education and lower tolerance for failure from its schools. Through tax credits, a simplified accreditation process, or technology, the students' cost for tertiary education must be lowered. Finally, municipal and state governments must invest in work-force retraining aligned around local clusters to help re-deploy citizens who are losing their jobs in manufacturing.

The US must specifically seek to promote innovation-driven industries. One way is to ensure our high intellectual property standards are adopted elsewhere, so local industries have global export markets. The US should also provide greater R&D tax incentives and make it easier for small businesses to form.

The US should employ a more consistent approach to regulation, particularly in the finance industry, where several regulatory agencies might better be replaced by a single, powerful agency. America should reduce tariff barriers and increase its integration with the Latin American neighbors who are its natural allies. A simplified tax code and re-examination of subsidies, particularly to agribusiness, might reduce the distortive impact on markets that these have provided (Porter, 2008).

Finally, the US must increase both its public and private savings rates in order to remain stable over the longer term. Earmarks and wasteful spending should be reduced in order to help balance the federal budget. The government could consider several initiatives to increase private savings, from sharper regulation of consumer credit to pushing back the age for receiving social security benefits.

Addressing North Carolina's issues—the labor force transition, the competitiveness policy, and the lack of innovation—requires more specific action at the state level. The labor force transition requires improved skills development. We recommend North Carolina better leverage its extensive community college network to offer worker retraining to displaced manufacturing employees. North Carolina should also improve K-12 education. A substantial reduction in dropout rates (50% of all African Americans fail to graduate; 1/3 of all students do not complete high school) would translate to improved economic outcomes. Accomplishing these tasks and others will require the state to support rural communities, which suffer from a lack of resources. To address its competitiveness policy, North Carolina should end its incentive-based economic development strategy. The 2005 \$282 million incentive for a Dell manufacturing facility epitomizes selection of industrial policy versus cluster-based economic development strategy. The state should adopt a cluster-based approach for coordinating a state-wide economic strategy within the Department of Commerce, pulling in the currently uncoordinated eight regional economic development entities. Finally, North Carolina can better capitalize on knowledge development occurring in its research institutions to drive private sector growth. Commercialization of

research and partnerships between academic institutions and the private sector (such as the FREEDM center at North Carolina State University's Centennial Campus) will also stimulate innovation.

## 5. The global and US home furnishing industries

Global furniture trends are impacting the US home furnishings industry. Figure 11 presents the main players in the industry, their products, and their basis of competitive advantages.

*Figure 11: Global home furnishings industry, analysis of competitive locations*

<u>Location</u>	<u>Type of competitive advantage</u>	<u>Source of competitive advantage</u>	<u>Segmentation</u>	<u>Target buying demographic</u>	<u>Overall trend</u>	<u>Export value, 2005</u>
Scandinavia, Continental Europe*	Willingness to pay - High End	Legacy of high-end design; design innovation; brand value	High-end designer furniture	30+ year olds, high income	↔	\$26B
Sweden (IKEA)	Low cost - across all categories	Low cost manufacturing; low cost retailing; innovative business model	Everyday, "disposable" furniture	20-30 year olds, fashion conscious, low-medium income	↑	\$19B
China, Vietnam, Indonesia, Malaysia	Type of products - mass produced, easy to ship	Low cost manufacturing for mass products	Casual furniture, "one-size-fits-all"	Average US shopper at furniture stores	↑	\$11B
US - North Carolina	Type of products - bulky, highly customizable; wood	Customization, location, skilled craftsmen, availability of raw materials	Durable case goods, Upholstered	Average US shopper at furniture stores	↓	\$0.2B
US - Other	Type of products - bulky, highly customizable	Customization, location	Upholstery, Kitchen cabinets	Average US shopper at furniture stores	↓	\$1.6B

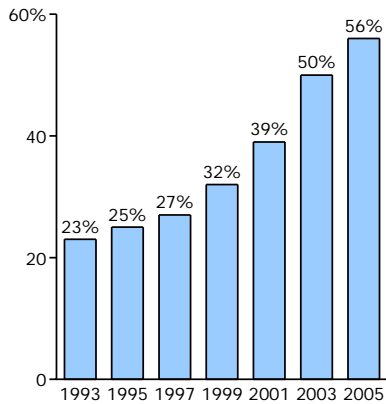
Source: International Cluster Competitiveness Project, 2008, North Carolina in the Global Economy, 2007

\* Includes all European countries named in competitiveness project report

In recent years, the US home furnishings industry has been undergoing significant transformation. The biggest trend has been increasing imports, particularly from Asia. Figure 12 below shows that 56% of US furniture consumption is of imported products. While Asian imports have made significant gains in certain segments of the market, most upholstered and some high-end wooden furniture is still manufactured in the US.

The impact has been felt in the United States, with manufacturers closing domestic plants and outsourcing to foreign countries. As an example, since 2005, Furniture Brands International, the largest

*Figure 12: Imports' share of US furniture consumption*



Source: Shuler, Lawser, Wood Digest

US manufacturer of furniture has closed eleven of its 27 US plants. Nine of the closed plants were located in North Carolina. Most of the closed plants manufactured “case goods,” a term for furniture that stores household goods, such as bookcases. Given a lower need for customization and easier shipping, case goods were easier to offshore (Furniture Brands International, 2008).

Ethan Allen, another large manufacturer, sources 60% of its product in the US, but has been shifting more sourcing abroad to remain competitive (Ethan Allen, 2008). Ethan Allen's global manufacturing strategy provides an insight into the corporate decision-making driving US and foreign plant locations. Ethan Allen plants that produce cabinet furniture, such as armoires or dressers, are on the East Coast due to proximity to wood raw material and skilled craftsmen. Plants that produce upholstered goods such as sleepers, recliners, or sofas, are “located across the country to reduce shipping costs and to be situated where skilled craftsmen are available” (Ethan Allen, 2008). US assembly plants are supported by Mexican factories, which handle the more labor-intensive tasks of cutting and sewing.

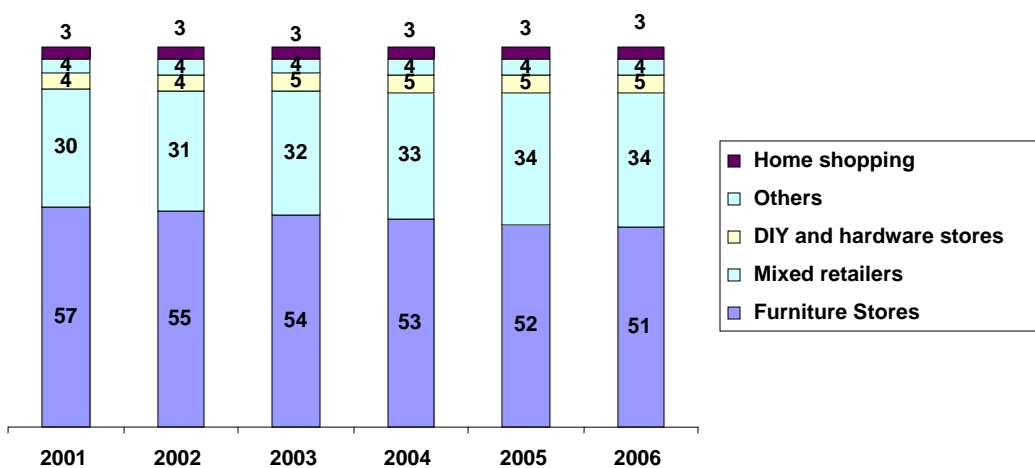
The second significant trend in the furniture industry is the vertical integration of manufacturers into retail. Many of the most successful furniture manufacturers in the US sell at least a portion of their merchandise through captive channels. With 25% of stores coming from their own retail outlets, Ethan Allen is an example of this. By bringing manufacturers closer to the ultimate consumer, vertical integration provides competitive advantage through a better understanding of consumer tastes and demands. Ethan Allen has used inputs from its stores to replace or update 63% of its SKUs in four years

(Ethan Allen, 2008). Given the need for differentiation versus Asian imports, “Many of the largest home furnishings manufacturers are focused on developing new retail outlets to sell their products to consumers” (Euromonitor, 2007).

The third trend is the shift in consumer perception from furniture as a lifetime purchase to furniture as a “disposable” fashion element. According to Mintel, casual items and storage furniture are the two fast growing segments in the furniture industry, for two main reasons (Mintel, 2008). First, with growing purchasing power earlier in their lives, younger individuals are becoming more important furniture consumers. Younger consumers are more image conscious generally, and they seek to reflect this in their furniture purchases. Second, US houses are getting larger: at over 2,000 square feet today, the average American house has more than doubled in size since the 1950s (Mintel, 2008). Of course, larger houses mean more space for furniture and more space to store goods in the household (Mintel, 2008).

Finally, the channel through which furniture is sold is shifting. Traditional furniture stores are slowly losing share while mass retailers such as Wal-Mart and Target are gaining share. Mass retailers are helping to drive importation, since they tend to sell mostly Chinese manufactured imports.

Figure 13: Sales of home furnishings by channel (%)



Source: Mintel 2008

Going forward, the US furniture industry will be challenged by Asian firms attempting to sell directly to consumers to capture the higher margins achievable in retail through their own branded stores, thereby bypassing American furniture companies entirely. Additionally, in recent years, capital expenditure as percentage of sales has decreased from 2.5% in 1998 to less than 1% in 2006 (Mintel, 2008). At the same time, Chinese plants have been investing heavily in innovation and automation of their plants, some of which boast higher productivity than those of US firms. Andy Counts, CEO of the American Home Furnishings Alliance, says, “While the Chinese originally competed on just lower wages, China sometimes has more high-tech plants with higher degrees of automation.”<sup>3</sup> Furniture processing equipment manufacturers have, as a result, shifted production to Asia, increasing the lead time to purchase new machines in the US to several months.

## **6. North Carolina furniture cluster: history and performance**

The North Carolina furniture cluster employed 47,000 people in 2006, more than any other US state. California and Mississippi employed 27,000 and 26,000, respectively. The core furniture cluster is the sixth largest traded cluster in North Carolina by jobs (ISC, 2006). Including furniture distribution and retail, the cluster employs 70,000, making it North Carolina’s third largest cluster.<sup>4</sup>

### 6.1 Cluster constituents

The core of the cluster is wooden upholstered and non-upholstered furniture manufacturing, design, and engineering. These core functions account for 50-55% of total cluster employment.<sup>5</sup> The 12 million square foot High Point Market is larger than all other furniture markets in the world combined and plays a critical role in marketing and selling the furniture produced in the cluster.

Other types of furniture, such as office, institutional furniture, and kitchen cabinetry, have historically played a minor role in the cluster. However, these segments are growing quickly, and could

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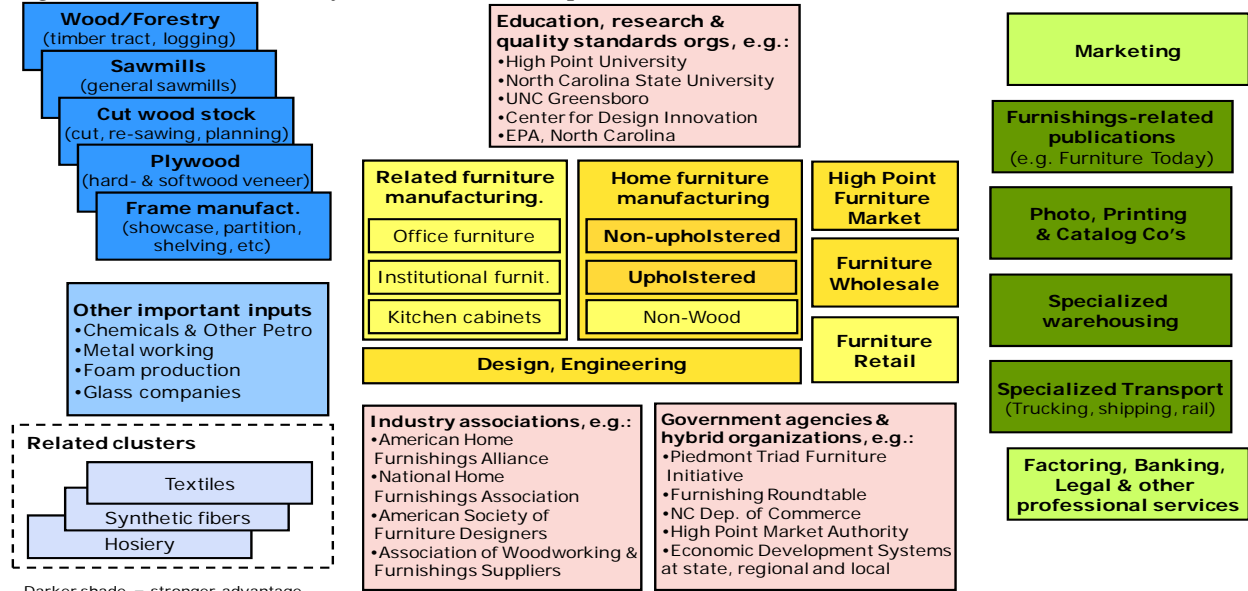
<sup>3</sup> Interview with Andy Counts, CEO of American Home Furnishing Alliance

<sup>4</sup> Calculations based on 2007 Duke report “North Carolina in the Global Economy” and Cluster Mapping Project.

<sup>5</sup> Ibid.

provide opportunities for the future. Wholesalers play a significant role in connecting the cluster not only to its primary East Coast customers, but also to West Coast and international markets. Local furniture retail has among the highest location quotients in the US and contributes 11,000 jobs to the region, a remarkably large number relative to other clusters.<sup>6</sup>

Figure 14: North Carolina furniture cluster map



Source: Team Analysis, Team Interview Program and Survey, [www.soc.duke.edu/NC\\_GlobalEconomy/furniture/value](http://www.soc.duke.edu/NC_GlobalEconomy/furniture/value), The Economic Impact of the Home Furnishings Industry in the Triad Region of North Carolina, A Strategic Report on the Piedmont Triad Furnishing Cluster

North Carolina’s abundant endowment of forests provides access to timber and other raw materials that use timber such as plywood and frames. In addition, specialized suppliers have developed to produce other key inputs like foam, glass, metal working and furniture-making chemicals.

Other specialized firms have also emerged over time. Among the most important are the six companies that specialize in the delicate task of furniture transport and the many companies that offer dedicated furniture warehousing.<sup>7</sup> Specialized competencies in marketing, market research, banking, and factoring have also emerged.<sup>8</sup> Co-location with catalog companies and related companies in photography and printing have also been important cluster drivers.

<sup>6</sup> Interviews with Gerald Fox, Professor at High Point University and Andy Counts, CEO of American Home Furnishings Alliance; data from 2007 Duke report “North Carolina in the Global Economy”

<sup>7</sup> Interview with Andy Counts, CEO of American Home Furnishings Alliance.

<sup>8</sup> Interview with Reid Marsh, Chairman of Marsh Furniture Co.



While some linkages to related clusters (such as textiles, synthetic fibers, hosiery) exist, these linkages appear weaker than in other furniture clusters, like the Italian furniture cluster (CSIL, 2003).

## 6.2 Cluster History and Evolution

*Colonial era to civil war.* North Carolina's forests were rich with oak, poplar, and maple, furniture varieties that expert Moravian and Quaker craftsmen tapped (Luger, 2005). British trade created sophisticated demand conditions with respect to design and artisanship. In parallel, rural backwoods settlers originally made handmade chairs, tables, and beds for own use, which they then began selling. Other endowments were important such as streams and rivers that provided power for sawmills. The area became early adopters of steam equipment and woodworking machinery. North Carolina furniture began taking share from New York, Pennsylvania, and New England due to its lower manufacturing costs and knowledge of furniture (Powell et al., 2006).

*Industrial age.* Workers in the Piedmont furniture factories were paid less than in the North and were willing to work longer hours. Rail infrastructure gave producers access to ports and markets (Luger, 2005). The growth of the East Coast population in the late 19th and early 20th century, in combination with national mail-order companies, including Sears, Roebuck., marketing NC furniture nationwide through catalogs, raised demand for inexpensive furniture (Powell et al., 2006). All together, these trends enabled North Carolina to lead the US wood furniture by the late 1920s (Luger, 2005).

*Growth and maturity.* The increasing importance of marketing led to the June 1921 creation of the High Point Market. The 1980s were the "golden era" of North Carolina furniture with employment peaking at 90,000 and the addition of 200 new companies (Powell et al., 2006).

*Curse of the 1980s.* Companies became too comfortable and did not invest in automation or the upgrading that would be necessary to compete in the future. The EPA and other government agencies used this era of high industry profits to demand investments that focused on safety and environmental

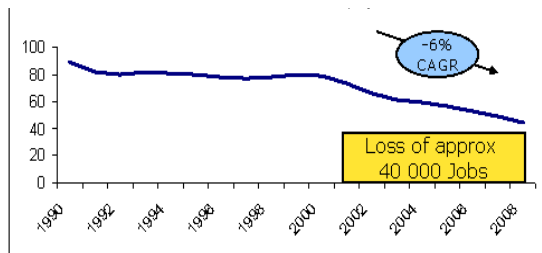
improvements. While their ambition may have been appropriate, the implementation of multiple waves of constantly changing rules led to huge inefficiencies and a waste of capital expenditures. More importantly, this regulatory capriciousness appears to have deterred companies from building new and more automated factories in the fear that they soon would need to be modified again.<sup>9</sup>

*Recent decline in the 1990s.* Globalization and free trade resulted in the migration of production to foreign furniture manufactures and the establishment of new factories abroad. This triggered a focus on cost-cutting, short-term competition, and outsourcing that further impeded investment in automation, productivity and innovation in North Carolina and a negative spiral began. During the 1990s there were 47 furniture company closings, a negative trend that still persists (Powell et al., 2006).

### 6.3 Current cluster performance in 2000 and beyond

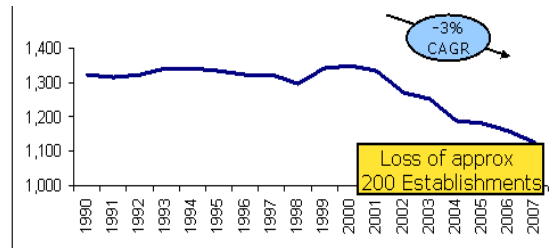
The decline beginning in the late 1980s and 1990s placed the cluster in a precarious position in 2000. During the last ten years, approximately 40,000 jobs, almost half the core cluster’s employment, were lost, while approximately 200 furniture establishments either closed or moved.

Figure 15: NC furniture employment, 000's



Source: US Census Bureau

Figure 16: NC furniture companies



Source: Team analysis, NC Employment Security Commission

Positive signs exist, such as the stable rate of sales per employee. Productivity per employee, measured as value-add per employee (indexed), has increased at 7% compounded annual growth since 2001. The cluster has also been able to increase its exports over the years. (See **Figures 17 and 18.**)

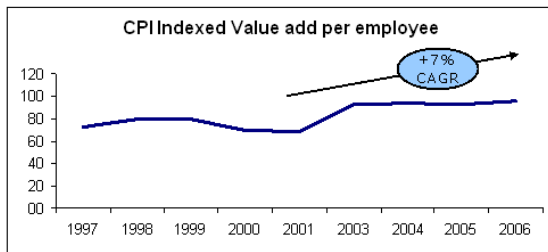
<sup>9</sup> Interview with Jerry Epperson, Managing Director, Mann, Armistead & Epperson, Ltd., an investment bank specializing in the furniture industry.

Although we see the potential for upgrading, we believe the cluster is significantly underperforming today. The lack of communication and collaboration among cluster participants stands as a major impediment for cluster development. A survey we conducted of North Carolina cluster participants confirmed that communication and collaboration in the cluster are significantly below average (see **Figure 19**). As one survey of furniture manufacturing clusters put it:

Furniture clusters show a wide variety of development models: they can be highly geographically concentrated local systems (e.g., Italy, Austria, Denmark and the Philippines), or they can be a simple concentration of furniture companies in a territory... like in North Carolina (CSIL, 2003).

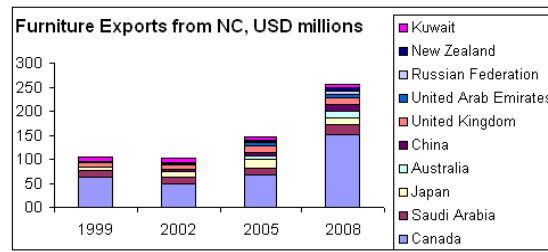
Firms currently see each other as short-run competitors, and they do not collaborate to find the common ground which will allow them to succeed in the long-run against other regions.

Figure 17: Furniture Value Add



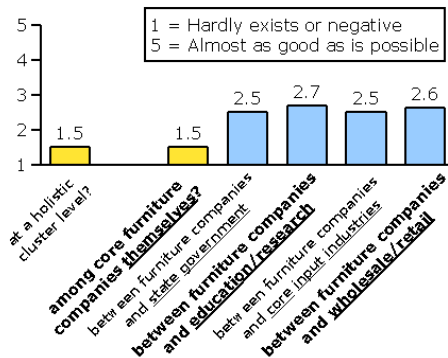
Source: Team analysis, NC Employment Security Commission

Figure 18: NC Furniture Exports



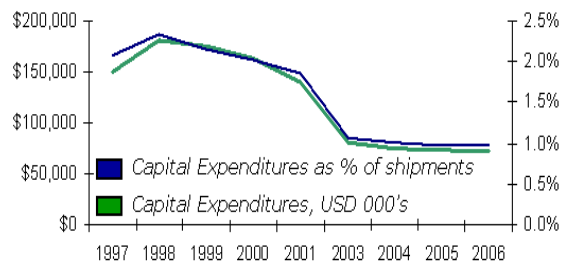
Source: US Furniture Industry: Yesterday and Today

Figure 19: Quality and frequency of collaboration and communication...



Source: Team interview program

Figure 20: North Carolina furniture capital expenditures



Source: US Furniture Industry: Yesterday and Today

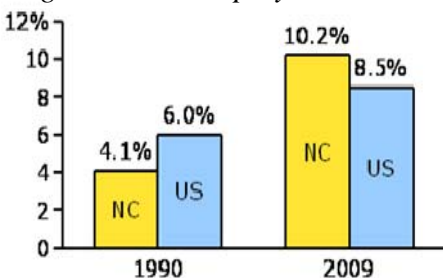
The focus in North Carolina is on short-term competition within the cluster instead of striving for long-run sustainable competitive advantage through investment in automation, productivity, design, and

innovation that will be required to compete against companies in other locations. This can be seen in the fact that capital expenditures have declined even further since 2002 (see **Figure 20**).

#### 6.4 Impact on overall economic and social prosperity

The unfortunate truth is that even if the cluster upgrades, job losses will continue. But job losses are not necessarily bad for the overall economic prosperity of the region. If people and resources move from less productive to more productive sectors in the economy, the overall economic and social prosperity of the region improves. Unfortunately, it appears there are few places to re-deploy workers, and North Carolina unemployment now exceeds US unemployment (see **Figure 21**). As Gerald Fox of

*Figure 21: Unemployment Rates*



Source: Employment and Security Commission of North Carolina

High Point University says, “The economy does not find new productive use for all the people being laid off. One indicator is how NC historically always had lower unemployment than the nation, but surpassed the US unemployment rate around 2000 and has been stuck there ever since.”<sup>10</sup>

### **7. North Carolina furniture cluster: competitiveness assessment**

We examined North Carolina’s business environment using a diamond analysis to get deeper into the reasons for poor performance. (See **Figure 22** for a summary.)

#### 7.1 Factor conditions

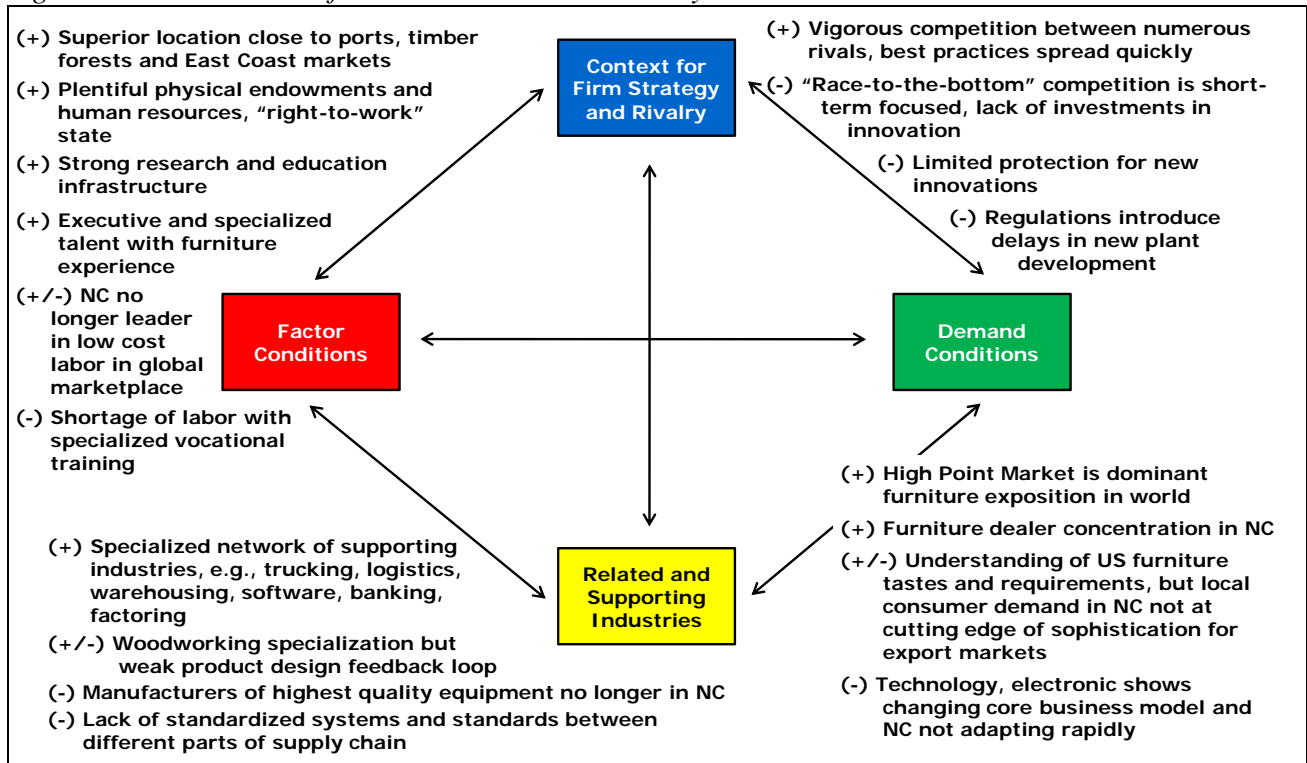
North Carolina’s strong factor conditions have been and continue to be a major strength for the cluster. The state’s proximity to mountains and forests with high quality timber, combined with access to water and major ports in Charleston and Norfolk, provide North Carolina with excellent natural endowments for furniture manufacturing.<sup>11</sup> Given the bulkiness of furniture, proximity to the consumer

<sup>10</sup> Interview with Professor Gerald Fox, High Point University

<sup>11</sup> Interview with Steve DeHaan, EVP of National Home Furnishings Association.

matters. For example, the ~\$130 cost of shipping a sofa from China to the East Coast gives North Carolina producers a substantial transportation cost advantage in East Coast markets.<sup>12</sup> This is critical given that 60% of the US population lives on the East Coast.<sup>13</sup>

Figure 22: North Carolina furniture cluster diamond analysis



Source: Interviews, team analysis.

North Carolina has also enjoyed a factor advantage in skilled and unskilled human capital. In interviews with leaders of North Carolina-based furniture companies and cluster IFCs, we heard that the depth of North Carolina's executive management and highly skilled labor talent was a key strength in attracting new furniture companies to the state. Successful furniture production requires specialized knowledge of multiple functions, including design, procurement, manufacturing process, textiles, photography, marketing, distribution and others, and North Carolina is one of the few places in the world where there is a deep stable of expert professionals in most of these areas.<sup>14</sup> Vocational training exists in

<sup>12</sup> Interview with Jerry Epperson, Managing Director of Mann, Armistead & Epperson, Ltd., an investment bank.

<sup>13</sup> Interview with Andy Counts, CEO of American Home Furnishings Alliance.

<sup>14</sup> Interview with Professor Gerald Fox, High Point University.

many of these specialties at local community colleges, though we heard that this training could be strengthened, particularly in the area of furniture design where there is a shortage of qualified personnel.

North Carolina also enjoys a factor condition advantage given its strong research and education infrastructure. For example, the Furniture Manufacturing and Management Center at North Carolina State University offers BS degrees in furniture.

In addition to skilled human capital, as a “right-to-work” state, North Carolina has an abundance of non-unionized, low-cost labor to staff factories. However, while North Carolina is still a low-cost labor destination in the US, in recent years, the labor cost advantage has declined as China and Mexico can provide unskilled labor at significantly lower cost.

## 7.2 Context for firm strategy and rivalry

With over 600 furniture manufacturers in the state, North Carolina benefits from vigorous competition. Reid Marsh, Chairman of The Marsh Furniture Company, a 100 year old local furniture manufacturer, told us: “Any factory best practices we have spread quickly. We’ve had employees jump over [to work for a competitor], and they took our manufacturing processes along.”<sup>15</sup> Though rapid spillover helps the cluster in the short run, it may reduce the incentives for firms to invest in innovation, particularly since these innovations are difficult to patent.

As mentioned in the cluster performance section, we characterize the nature of rivalry between furniture companies in North Carolina as a “race-to-the-bottom” type of competition, often based on short-term price concessions like aggressive promotions and financing offers. This short-term focus reduces the more far-sighted investments that we would hope competition would spur. Global rivals, particularly in China, are pursuing these longer-term investments in design and manufacturing improvements, and as these foreign innovations start to gain traction, it will be increasingly difficult for North Carolina producers to compete.

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<sup>15</sup> Interview with Reid Marsh, Chairman of Marsh Furniture Co.

A second area of disadvantage for North Carolina relative to other countries is the level of government regulation attached to new plant development. Our interview program revealed that it can take ten to twelve years to get all the necessary regulatory approvals to build a new plant in the state.<sup>16</sup> Environmentally-focused plaintiffs often bring lawsuits that can get tied up in state and federal court because it seems simple to agree to the plaintiffs' demands for "environmental impact studies" which can take over a year to produce and often end up having inconclusive results. As one elected official told us: "No one wants a plant in his backyard."<sup>17</sup> Companies in competitor locations like China and Mexico operate without most of these regulatory constraints.

### 7.3 Demand conditions

North Carolina benefits from strong demand conditions. Perhaps most visibly, the High Point Market is the dominant furniture exposition in the world. With 12 million square feet of exposition space, "The Market," as locals call it, is larger than all the other expositions in the world combined, including the Las Vegas expo, which has only 3.3 million square feet.<sup>18</sup> The High Point Market is held twice a year and brings together 85,000 professional buyers and sellers of furniture. According to our interviews, there is real truth to the Market's tagline: "If you can't find it in High Point it probably doesn't exist."<sup>19</sup>

The benefits of the High Point Market extend beyond the semi-annual event because the Market promotes a significant presence of retail showrooms in the state, which are open year round. In addition, a concentration of furniture dealers has developed in the cluster, and the network effects associated with dealers trading with each other have continued to strengthen the dealer presence in the state.<sup>20</sup> The presence of a strong dealer network greatly facilitates idea sharing and recruiting.

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<sup>16</sup> Interview with Jerry Epperson, Managing Director of Mann, Armistead & Epperson, Ltd., an investment bank.

<sup>17</sup> Interview with David Miner, former State Representative and Chair of Finance Committee, Transportation Committee, Commerce Committee

<sup>18</sup> Interview with Andy Counts, CEO of American Home Furnishings Alliance.

<sup>19</sup> As quoted on High Point Market website: <http://www.highpointmarket.org/AboutMarket.aspx>

<sup>20</sup> Interview with Steve DeHaan, EVP of National Home Furnishings Association.

One criticism of the cluster’s demand conditions is that local consumer demand in North Carolina is not at the cutting edge of sophistication, particularly for the export markets. Within the US, larger metropolitan areas like Los Angeles and New York City are better known for design leadership in general, and outside the US, the most rapid design innovation is happening in Denmark and Italy. However, North Carolina consumers do reflect the tastes of many American consumers with larger, suburban homes who tend to prefer larger furniture, like the Barcalounger (see **Figure 23**), a long-time staple of the North Carolina furniture cluster.<sup>21</sup> In addition, the dealer network based out of North Carolina is well-connected with global tastes and design trends, so they represent an effective conduit to bring global demand characteristics to the cluster.

*Figure 23: A Barcalounger*



Source: Barcalounger website.

One potential threat to North Carolina’s strength in demand conditions is that new technology holds forth the potential for electronic furniture shows that could change the core Market-showroom-dealer model around which the cluster is centered. Noting that physical shows can typically only display 20-30% of exhibitor inventory anyway, one industry association leader even commented that: “On the marketing side, it won’t make any difference where you’re located in the future.” Our

own view is that seeing furniture in person will continue to be an important driver for the cluster. In addition, the electronic showroom technology is actually being developed in North Carolina, so to the extent that that technology is successful, it may bring other advantages to the cluster.

#### 7.4 Related and supporting industries

As mentioned, a strong network of specialized industries, e.g., trucking, logistics, warehousing, software, banking/factoring, and others has developed to support the North Carolina furniture cluster. In trucking, for example, the ability to package and handle furniture is crucially important to avoid damage,

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<sup>21</sup> Interview with Larry Smith, EVP of Sales and Marketing at Barcalounger.



which can easily occur and has high costs. There are six large trucking firms in North Carolina, which specialize in furniture handling and have invested to customize their trucks for furniture transport.<sup>22</sup> In the area of finance, local banks have also developed a familiarity with furniture industry capital requirements, and specialized financial products to “factor” furniture inventory and receivables are more common in North Carolina than in other US states.

The cluster also benefits from a highly specialized woodworking industry in North Carolina (see cluster map in **Figure 14**). However, we have heard repeatedly that there is a missed opportunity given a weak product design feedback loop between woodworkers and manufacturers. In general, we observe a lack of standardized systems and standards between different parts of the furniture supply chain.

An area of emerging weakness for the cluster is the absence of a strong heavy equipment manufacturing industry in the state. For the most part, makers of high-quality, furniture-making equipment have left the US, and as a result, we are told it can take between three and six months for North Carolina factories to receive a new piece of equipment from overseas, compared to as little as a week in China where factory equipment manufacturers have co-located.<sup>23</sup>

## **8. Strategic Vision and Recommendations for the Cluster**

Our analysis of strategic issues (in sections 6 and 7) has demonstrated that furniture in North Carolina is a cluster in decline. However, the cluster has enough advantages to be able to remain competitive. The cluster must move past individual company rivalry and collaborate where necessary, developing strategic thinking for the cluster as a whole. We believe the cluster will succeed when:

- Firm strategy is oriented around business models which play to the strengths of the cluster location and the cluster diamond.
- Companies move beyond rivalries to advocate for changes in the business environment that serve

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<sup>22</sup> Interview with Andy Counts, CEO of American Home Furnishings Alliance.

<sup>23</sup> Interview with Jerry Epperson, Managing Director of Mann, Armistead & Epperson, Ltd., an investment bank.

their common interest, and government engages with these interests and helps where possible.

- Firms seek to build long-run sustainable competitive advantage to become globally competitive, focusing efforts to position the cluster and North Carolina as the global industry epicenter.

### 8.1 Recommendations for firms

Firms are increasing short-term profits by outsourcing. But the question that these firms must ask is how they will differentiate themselves against similar outsourcing companies in the long-term. Since lower costs will not be the answer, they must find a new strategy for growth in the increasingly global industry. This new firm strategy should focus around delivering the following benefits: (1) greater customization, (2) faster delivery times, (3) higher product quality, and (4) better customer service. A focus on automation and process innovation will be crucial to execute against these objectives without increasing cost.

We have identified four potential strategies to enhance the competitiveness of the manufacturing sector of the cluster: (1) high-end / design-focused furniture, (2) customized upholstered furniture, and (3) low-end highly-automated furniture production, and (4) focus on contract/institutional and hospitality furniture, which are more time-sensitive. Strategies focused on high quality and customization follow from the cluster diamond analysis identifying the labor cost disadvantage and the favorable demand conditions in the cluster.

Though the low-end segment appears to be a difficult place for US manufacturers to play, IKEA/Swedwood recently invested over \$100M to set up a fully automated plant in Daville in “Southside” Virginia near the North Carolina border, demonstrating how this segment can present an opportunity. Several IKEA suppliers have also located proximate to the plant.

All of these strategies leverage the advantages of the cluster, such as access to input materials, expertise in distribution, logistics, and retail, the High Point Market, and its human capital, including

specific industry expertise in a wide range of support services. These strategies are by no means an exhaustive list of potential ways to succeed in the market. But a cohesive and sustainable cluster strategy is necessary to stay competitive.

Regardless of their chosen strategy, firms will need to make operational improvements to remain competitive. Firms should consider more investments in capital equipment and process automation if these can help provide the necessary productivity improvements to stay competitive. A focus on differentiating themselves through design is also a key competitiveness strategy.

North Carolina furniture companies should also seek to increase their exports (see **Figure 18**) by identifying international markets for expansion. US companies can be competitive in Canada and Europe. And despite China's large export industry, 75% of Chinese production still goes to the domestic market, indicating that China could present a large market for high-end American branded furniture. Embracing international competition by participating in foreign markets could provide a force to bring the cluster to world-class standards.

## 8.2 Recommendations for government

First and foremost, North Carolina must have a powerful, cluster-wide mechanism for collaboration. North Carolina state and local governments should support expansion of the Piedmont Triad Initiative regionally and across all related industries throughout the state. At the highest levels of state government, a bipartisan consensus should seek to engage with this initiative regularly to determine policies and initiatives that can help the cluster and provide visible leadership. The true regional geography of the cluster might even include Southern Virginia, in which case cross-state cooperation will be necessary. The state of North Carolina should provide long-term sustainable stable funding to cluster initiative for analysis and coordination, which should provide high returns on tax dollars invested.

The government should seek to stimulate product and process innovation in the cluster. This

might be accomplished through tax credits, innovative financing for furnishings manufacturers, investments in furniture research and development, possibly through the University of North Carolina system, and job training to enhance the skills of legacy manufacturing workers. In addition, the government could provide grants for researching innovation in furniture manufacturing. A more proactive alternative might be a public-private partnership to set up a research facility to explore process technologies incorporating more automation and sustainability strategies. Green manufacturing processes could potentially provide a means for manufacturers to differentiate, and therefore should be researched. Finally, government support for a world-class furnishings design center would help establish the cluster as a global leader.

### 8.3 Recommendations For Institutes for Collaboration

IFCs such as the Piedmont Triad Initiative and the American Home Furnishings Alliance should lead the work on developing a holistic cluster strategy, instead of developing business plans for individual industries or artificially small or national regions. Elements of this cluster strategy should include mechanisms to develop human capital. IFCs should partner with local colleges and institutions to create programs that teach furniture expertise, particularly in higher value parts of the value chain such as design. IFCs should coordinate with the government to set up collaborative research facilities for the sector. In addition, IFCs can increase coordination across the supply chain by introducing a uniform standard for systems and data transmission.

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