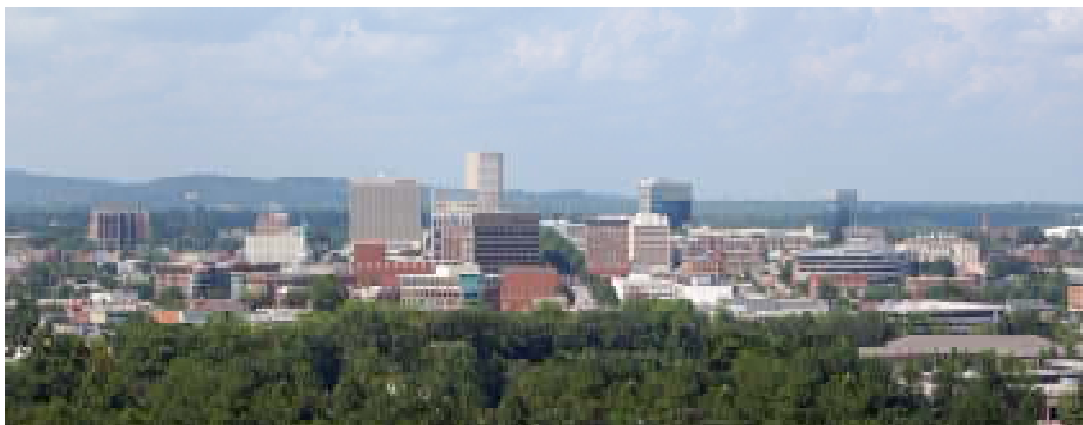


# Greater Greenville Regional Economic Scorecard March 2008



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# Greater Greenville Regional Economic Scorecard



prepared by

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“Focusing our efforts on what matters most.”

The creation of the Greater Greenville Regional Economic Scorecard achieves just that – a laser focus on specific drivers associated with robust economic growth and prosperity.

For a number of years, our Governor, legislators and business leaders have acknowledged the gap between South Carolina’s per capita income and the per capita income of the U.S. as a critical economic indicator for our state. Greenville, while seemingly prosperous, has seen a decline in per capita income relative to the US over the past six years. We now stand where we were in the late 1980s. It is a disturbing trend.

Advantage Greenville, a select group of Greenville area leaders with a passion for enhancing business and community prosperity, set out in the summer of 2007 to uncover drivers of per capita income growth or decline. The pivotal question: “How does Greenville compare to peer communities in the Southeast in factors linked to per capita income?”

A team of distinguished, nationally prominent researchers at Clemson University was tasked to create an econometric model that would assist Advantage Greenville in bringing the attention of local and state leaders to activities that would have the greatest benefit for our citizens. The model would be based on a statistical analysis of objective data from select peer communities. This tool holds promise as a framework for discussion and policy decisions for the future.

We believe that they have superbly succeeded in this task.

We are pleased to present the findings from the inaugural edition of the Economic Scorecard. While the results may not be shocking, they are sobering. Critical findings include:

- Greenville’s human capital index needs a significant amount of attention.
- Greenville’s innovation index is relatively strong but more needs to be done to ensure that we are competitive with communities at the next tier of development.
- Greenville’s entrepreneurial index lags aspirational cities and more effort must be made to have the pieces in place to support a strong entrepreneurial culture.

Advantage Greenville is not making specific recommendations. Rather, we intend to use the Economic Scorecard to facilitate serious discussion among community leaders during the remainder of this year.

We, as a community, count on you to answer the call of leadership and join in this dialogue of critical importance to our future.

A handwritten signature in black ink that reads "Valinda Rutledge". The signature is written in a cursive, flowing style.

Valinda Rutledge  
Chair, Advantage Greenville  
CEO, Bon Secours St. Francis Health System

## **Introduction**

The Greater Greenville Chamber of Commerce has an ongoing effort to develop an economic development strategy and implementation plan. This effort builds on analyses by Market Street Services, Inc. (2006) and the Chamber's Vision 2025 plan (2004). Efforts by the Chamber, and cooperating institutions and individuals, to implement the plan require an objective basis for monitoring economic development trends. The analysis provided in this report provides indicators needed to establish and maintain an effective system for monitoring economic development trends in Greenville County and the proximate region.

**Per capita income** is a key measure of economic progress in Greenville County and the South Carolina Upstate. As revealed in the pages of this report, real per capita income (after adjusting for inflation) has increased over the past twenty years in Greenville County and the region, but generally at rates slower than the U.S. average over the past decade. So while real per capita incomes are increasing in Greenville and the region, the increases have not been large enough to reach 2006 levels in most "peer" cities in the South, nor in several "target cities" that are the leading economic engines in the region.

**Census Geography**, in this report, three South Carolina Upstate regions are of interest:

1. **Greenville County**
2. The **Greenville Metropolitan Statistical Area (MSA)** comprised of Greenville, Laurens and Pickens Counties, and
3. The **Greenville Combined Statistical Area (CSA)**:  
Greenville, Laurens, Pickens, Anderson, Spartanburg, Oconee, Union and Cherokee Counties.

## **KEY OUTCOME OF ECONOMIC COMPETITIVENESS IS THE LEVEL OF PER CAPITA INCOME (PCY)**

### **IS THE GREENVILLE AREA CATCHING UP OR FALLING BEHIND ITS PEER CITIES?**

- **INCOME TRENDS WITHIN THE GREATER GREENVILLE REGION**
- **INCOME TRENDS IN PROXIMATE CITIES**
- **INCOMES TRENDS IN TARGET CITIES**

## Methodology

Indicators of economic development are developed along geographical and quantitative dimensions. The MSA and CSA that are anchored by Greenville County were compared to all other MSAs and CSAs in the South to identify Greenville's peer group of small and large cities using quantitative indicators of innovation and growth potential. Characteristics of MSAs and CSAs that are similar to Greenville in business environment, innovation, and growth potential were identified.

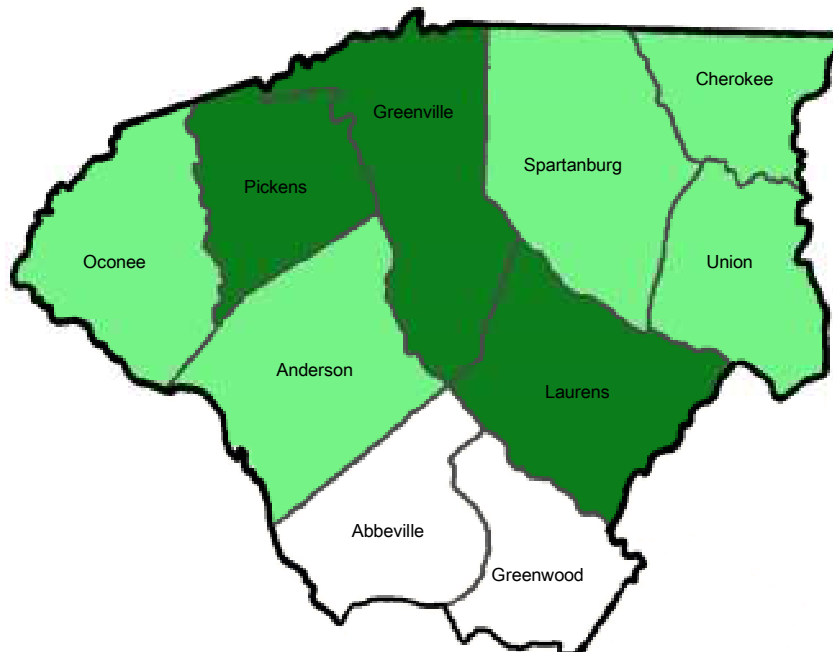
The "New Economy" indicators developed in this report focus on innovative activity (development of new products and processes), entrepreneurship (converting innovation into economic activity), and industry structure (network of supporting services, labor skills, and infrastructure). These indicators are grouped into five that reflect emerging sources of economic development in the New Economy. (Atkinson and Correa, 2007).

New Economy Indicators:

1. Knowledge Jobs and Labor Quality
2. Competitiveness in the Global Economy
3. Economic Dynamism of Industrial Base and Industry Clusters
4. Environment for Entrepreneurship and Small Business Development
5. Technological Innovation Capacity and Activity

Traditional metrics for gauging regional competitiveness often include wage rates, local tax burdens, and land costs. These factors have been important in recruiting new firms to a region and in local business retention and expansion. However there is limited variation in these factors across MSAs in the South, and low wage jobs in manufacturing are increasingly moving overseas. Accordingly, this report focuses on metrics for gauging how well the Greenville region is doing in the competition for New Economy jobs that are most likely to provide boosts to real per capita incomes of the residents of the region. These characteristics provide a set of benchmarks that Greenville can work towards in an implementation plan if Greenville is to reach and maintain top rank characteristics in innovation and growth potential.

## South Carolina Upstate



 Greenville Metropolitan Statistical Area (MSA)

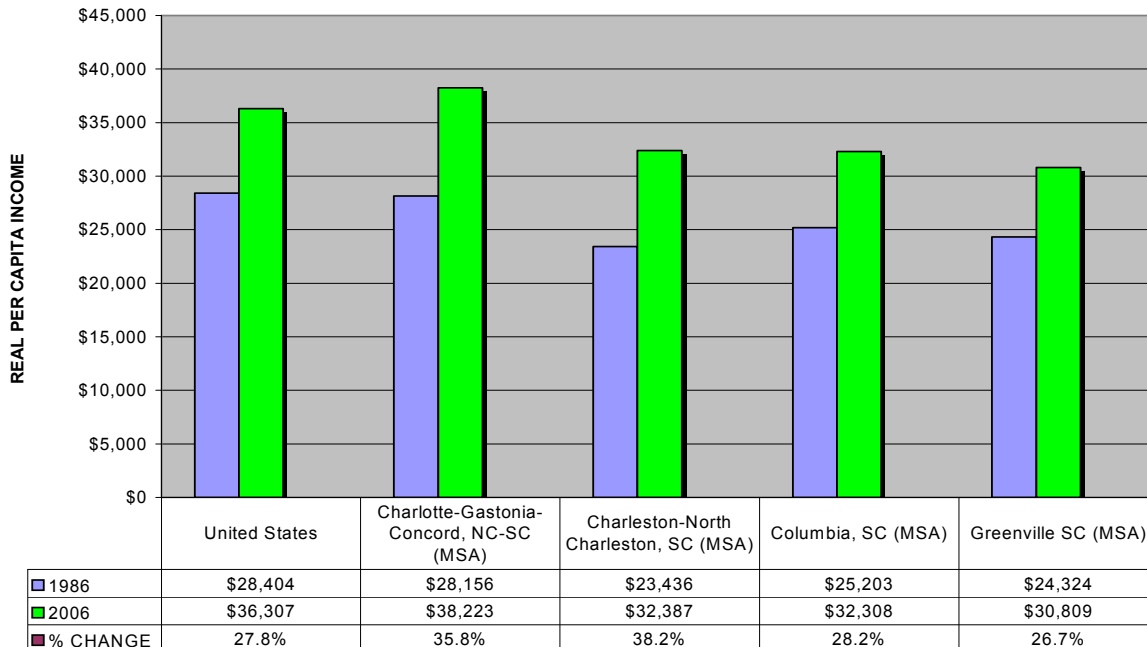
 Greenville Combined Statistical Area (CSA)

## Figure 1

Figure 1 displays the levels of real per capita income (2006 dollars) in 1986 and 2006 for the United States, the Greenville MSA (Greenville, Laurens and Pickens Counties), and in three proximate MSAs - Charlotte, Charleston and Columbia. The level of real per capita income increased in all regions by more than 26% since 1986. However, Charleston and Columbia have grown their local economies over the past two decades in ways that have enabled per capita incomes in Charleston and Columbia to surpass income in Greenville by about \$1,500 per person in 2006. In contrast, 1986 per capita income was higher in Greenville than in Charleston and lagged Columbia's per capita income by only about \$900. (See Appendix C for ACCRA cost of living indices for these cities).

From 1986 to 2006, per capita income in Greenville grew slightly slower than the national average but substantially slower than the Charlotte region. Per capita income is now about \$7400 lower in the Greenville MSA than in the Charlotte MSA. As shown in Appendix C, the ACCRA cost of living index is lower in Charlotte than in Greenville, so this is a real income gap that has doubled over the last two decades. It also represents an excellent target city for the Greenville Chamber to consider in implementing a strategic plan for economic development of the region. That is, what are the competitiveness characteristics in places like Charlotte that Greenville needs to improve if it wants to move up the per capita income scale in the region.

**FIGURE 1. REAL PER CAPITA INCOMES 1986 AND 2006  
(2006 PRICES)**



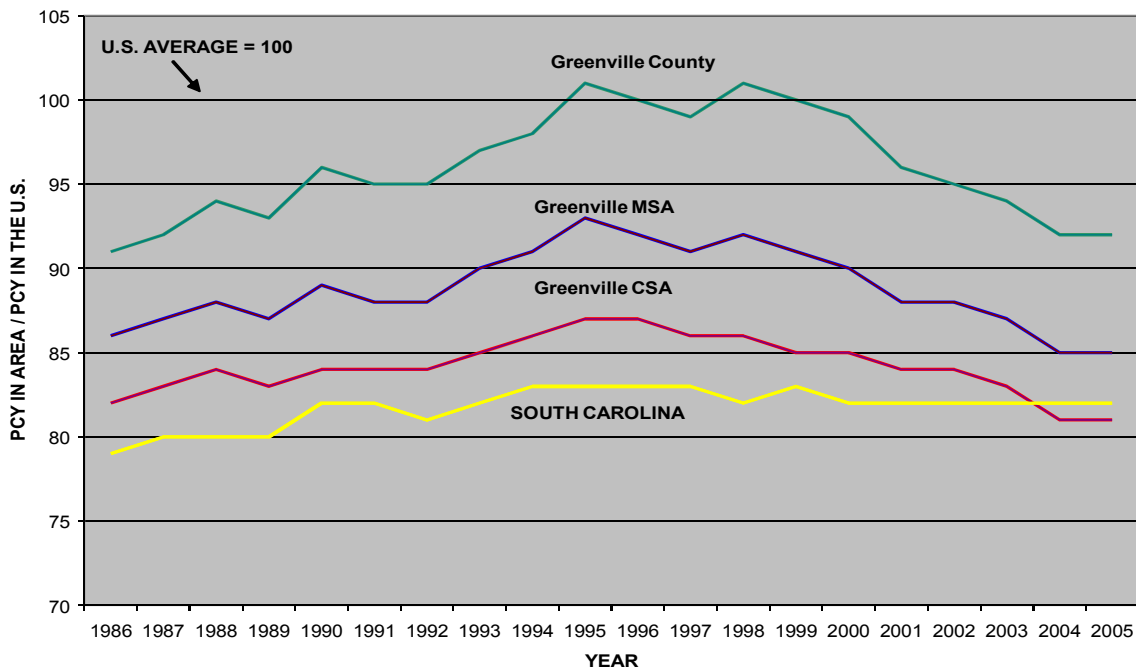
U.S. AND MSAs (SOURCE: REIS, U.S. Dept. of Commerce)

## Figure 2

Figure 2 presents a snapshot of how per capita income has trended over time in the region compared to the national average. The per capita incomes are converted to ratios of the U.S. average from 1986 onward. As shown on the top green line, the per capita income of Greenville County rose from about 91% of the U.S. average in 1986 to 101% of the U.S. per capita income in 1998. However, since 1998, the Greenville County per capita income has fallen back to about 92% of the U.S. average in 2005 (County data for 2006 will be released in April, 2008).

The second major theme from this figure is that the larger the region considered, the lower the average per capita income level. The Greenville MSA (Greenville, Laurens and Pickens Counties) has a per capita income that in 2005 was about 85% of the U.S. average. The Greenville CSA per capita income (add Anderson, Spartanburg, Oconee, Cherokee and Union counties to the MSA) falls to 81% of the national average – slightly below the SC average per capita income level.

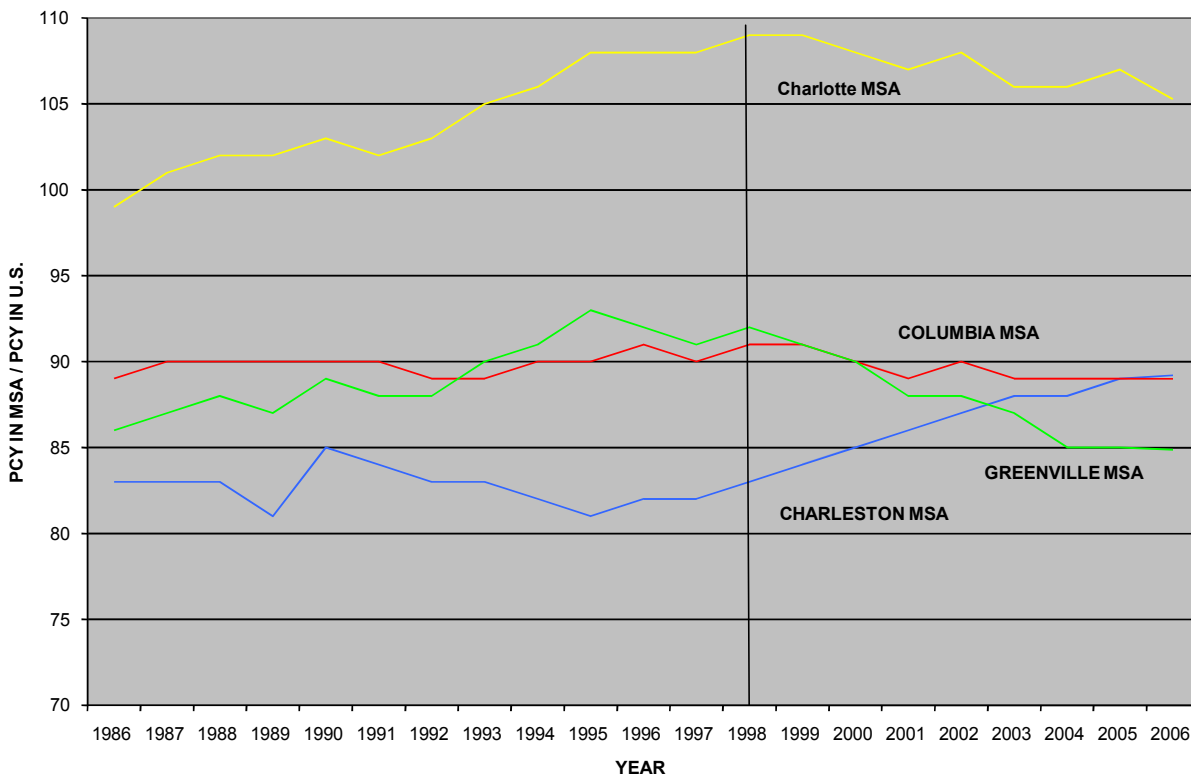
**FIGURE 2. PER CAPITA INCOME TRENDS RELATIVE TO THE U.S.: GREENVILLE COUNTY, the GREENVILLE MSA, the GREENVILLE CSA and SOUTH CAROLINA**



### Figure 3

Figure 3 compares per capita income trends in selected MSAs in South Carolina. The Charlotte MSA, shown in yellow, has a per capita income level substantially higher than Greenville's MSA level and the gap has grown over the past twenty years. Since 2002, the Greenville MSA per capita income has fallen behind that of Columbia and Charleston. By 2006, the Charleston and Columbia MSAs have settled in at about 89% of the U.S. average while Greenville's per capita income is 85% of the national level. The contrast is striking between the steady increase in Charleston's approach to the national average since 1998 while Greenville's per capita income has fallen behind the national average.

FIGURE 3. PER CAPITA INCOMES (PCY) IN CHARLESTON, COLUMBIA, GREENVILLE MSAs COMPARED TO CHARLOTTE TARGET, 1986 to 2006



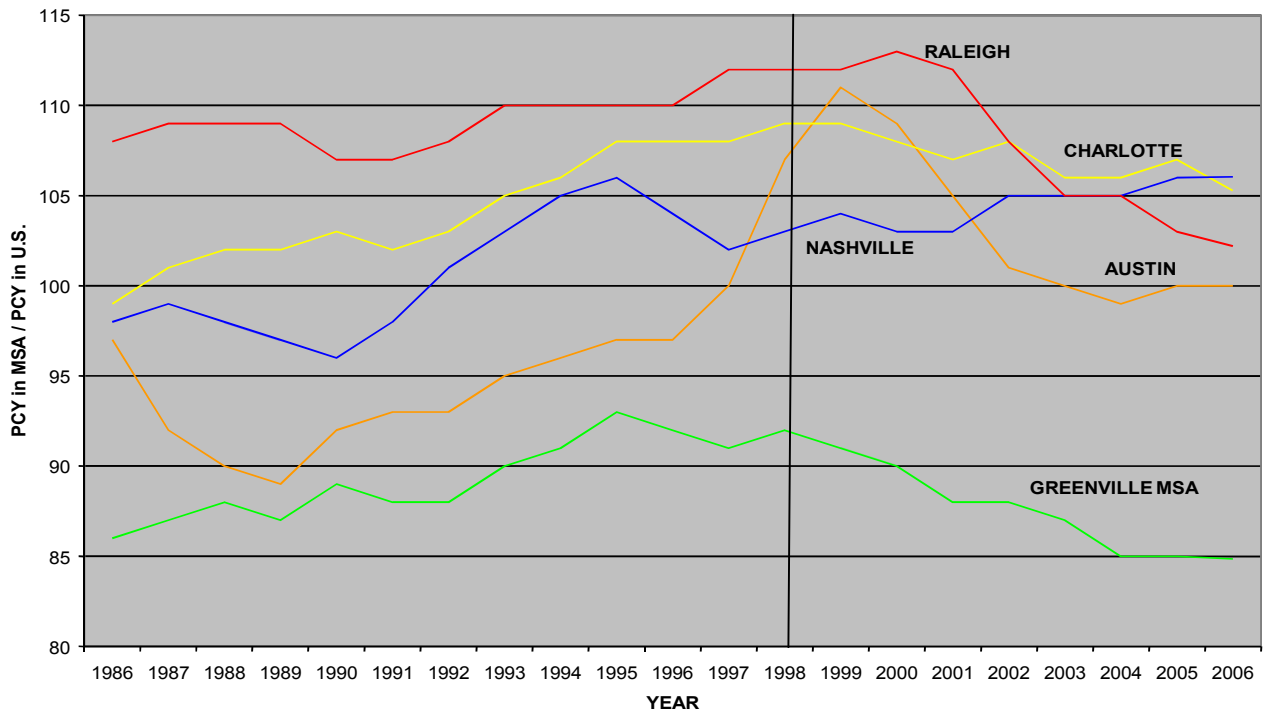


## Figure 4

Figure 4 highlights how per capita income has trended over time in the Greenville MSA compared to “Target Cities.” Since 1998, these four MSAs (Austin, Raleigh, Nashville and Charlotte) have had per capita incomes at least as high as the national average, and 5% to 10% higher in most years since 1998. Raleigh and Austin display some of the cyclical swings shown by Greenville while Charlotte and Nashville exhibit steady performance compared to the national averages since 1998.

The major theme of this figure is that the Greenville MSA remains about 15% to 20% below its Target Cities. Tracking Greenville’s economic development progress will consider both absolute increases in real per capita income, and the performance of the local economy relative to “Peer Cities” and “Target Cities” in the South. We turn next to a discussion of an **Economic Scorecard for Greenville** that will help community leaders monitor the economic performance of the region across a range of competitiveness characteristics.

FIGURE 4. GREENVILLE MSA PER CAPITA INCOME (PCY) COMPARED TO TARGET MSAs OVER THE 1986 TO 2006 PERIOD



## **Develop Economic Competitiveness Scorecard**

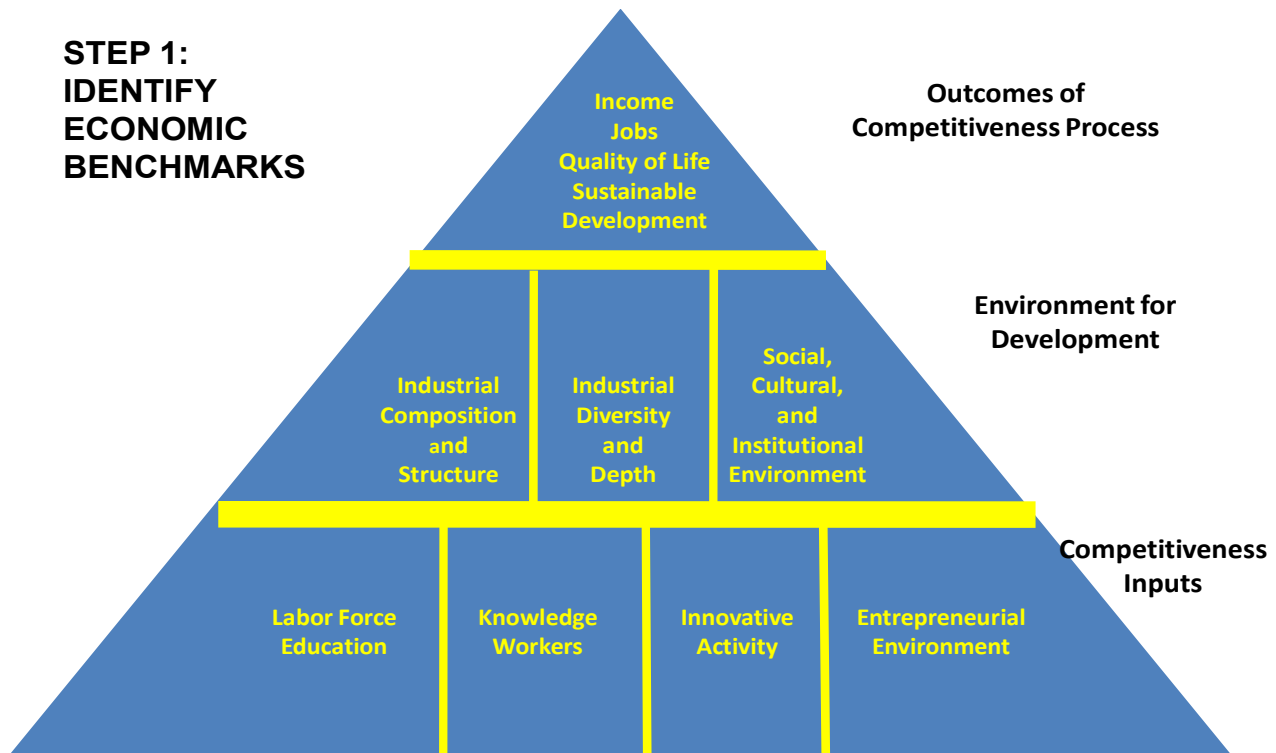
Four steps were used to develop a scorecard for the Greenville economy. First, we identified the key characteristics or benchmarks of a competitive economy. Second, we selected a set of peer cities and target cities for comparisons with the Greenville MSA and CSA. Third, we developed sets of indices and benchmarks for Greenville and the peer and target cities. The indices were derived from data on the selected key characteristics of a competitive economy. Fourth, we identified strengths and weaknesses of the Greenville area economy based on Greenville's relative rankings in characteristics that affect economic progress. A discussion of the four steps follows.

### **OBJECTIVE: DEVELOP ECONOMIC COMPETITIVENESS SCORECARD FOR THE GREATER GREENVILLE REGION**

1. DEVELOP KEY ECONOMIC BENCHMARKS FROM LITERATURE
2. IDENTIFY PEER AND TARGET CITIES FOR GREENVILLE
3. COMPARE ECONOMIC BENCHMARKS FOR GREENVILLE AND PEER/TARGET CITIES
4. IDENTIFY STRENGTHS AND WEAKNESSES OF THE GREENVILLE AREA ECONOMY THAT AFFECT ECONOMIC PROGRESS

## Step 1. Identify Economic Benchmarks

Greenville's economic development goals are to provide sustainable development as reflected in strong job growth, high per capita incomes, and high local quality of life. The foundation for these development outcomes are four key inputs to the competitiveness process: a well educated labor force, a large number of knowledge workers, innovative activity and capacity, and an environment that supports entrepreneurship. Knowledge workers and innovative activity provide the new products and production processes that result in new and more competitive businesses. The entrepreneurial environment and educated labor force help the new businesses grow into important sources of jobs and income. The impacts of the four competitiveness inputs on local income and jobs will be affected by the local environment for development. Prospects for growth are enhanced if the industrial structure and the social, cultural, and business environments are conducive to change. New ideas and businesses are encouraged in a competitive economy.



**Regional Competitiveness Pyramid**

## **Step 2. Select Peer Cities**

The benchmarking of economic competitiveness is most meaningful if comparisons are made to cities with similar resource endowments and economic prospects. Greenville's peer cities were the metro areas in the South most similar to Greenville based on twenty-two measures of innovative activity, labor force quality, industrial composition, and entrepreneurial and small business environment. The twenty-two measures used to select the peer cities are provided in Appendix A. The statistical procedure "Cluster Analysis" was used to identify the metropolitan areas most similar to Greenville in terms of the selected twenty-two characteristics.

## **Step 2: Select Peer Cities**

### **Metropolitan Area Characteristics (22) Used to Select Comparison Cities from 118 Southern Metro Areas**

- A. Innovative Activity and Capacity (5)**
- B. Labor Force Quality and Participation Rate (3)**
- C. Entrepreneurial and Small Business Environment (7)**
- D. Industry Clusters and Composition (7)**

## Peer and Target Cities

Eleven peer cities were selected out of 112 Southern metro areas based on the findings of the cluster analysis. Comparison cities for the Greenville MSA are five medium-sized metro areas: Charleston, South Carolina; Columbia, South Carolina; Jackson, Mississippi; Lexington, Kentucky; and Little Rock, Arkansas. Comparison cities for the Greenville CSA are six larger metro areas: Birmingham, Alabama; Greensboro/Winston-Salem, North Carolina; Jacksonville, Florida; Knoxville, Tennessee; Louisville, Kentucky; and Richmond, Virginia. In addition to the peer cities, the Greenville Chamber of Commerce selected four metro areas as representative of highly competitive areas in the New Knowledge Economy. These four “target” cities are: Austin, Texas; Charlotte, North Carolina; Nashville, Tennessee; and Raleigh/Durham, North Carolina.

### Peer Cities Selected for the Greenville MSA and CSA Regions

Metro Area	Population (2000)
<u>Greenville MSA</u>	<b>599,940</b>
Jackson, MS CSA	525,246
Lexington, KY CSA	602,733
Charleston, SC MSA	603,178
Little Rock, AR MSA	610,518
Columbia, SC MSA	647,158
<u>Greenville CSA</u>	<b>1,128,104</b>
Knoxville, TN CSA	935,659
Richmond, VA MSA	1,096,956
Jacksonville, FL MSA	1,122,750
Birmingham, AL CSA	1,129,721
Louisville, KY MSA	1,161,975
Greensboro/Winston-Salem CSA	1,414,656
<u>Target Cities</u>	
Austin, TX MSA	1,249,763
Nashville, TN MSA	1,311,789
Raleigh/Durham CSA	1,314,589
Charlotte, NC MSA	1,330,448

### **Step 3. Develop Scorecards for Competitiveness Inputs**

The four principal inputs of regional competitiveness (labor force education, knowledge workers, innovation, and entrepreneurial environment) have multiple components. Indices were developed for each competitiveness input that incorporated the multiple measures for the principal category and expressed the benchmark relative to the national average. Thus the indices for the Greenville MSA and CSA permit ready comparisons with peer cities in the South as well as with the nation as a whole. The data used for the calculation of the four indices are provided in Appendix B.

### **Step 3: Compare Greenville MSA and CSA with Peer Cities, and with Target Cities**

#### **Competitiveness Inputs**

- Labor Force Education
- Knowledge Workforce
- Innovative Activity and Capacity
- Entrepreneurial Environment

The development of an index is demonstrated for the labor force education competitiveness input. First, area labor force education is represented by two measures: percent of labor force with a high school degree and percent of labor force with a college degree. The raw data for each measure is provided in the table on the following page. Next, each value in the table is divided by the value for the United States and multiplied by 100. These adjusted values represent the metro measure relative to the national measure. For example, an adjusted value of 110 means that the metro value is 10% above the national average and an adjusted value of 90 means that the metro measure is 10% below the national average. Finally, the index or benchmark measure for labor force education is the average of the two adjusted measures (percent of high school graduates and percent of college graduates).

<b>Labor Force Education</b>		
<b>2006 Census Region</b>	<b>Percent of Labor Force with a High School Diploma</b>	<b>Percent of Labor Force with a Bachelor's Degree</b>
<b><i>Small Peer Cities</i></b>		
Lexington, KY CSA	84.42%	30.19%
Columbia, SC MSA	85.48%	29.16%
Charleston, SC MSA	86.55%	28.34%
Little Rock, AR MSA	87.32%	26.52%
Jackson, MS CSA	83.23%	26.83%
<b>Greenville, SC MSA</b>	<b>80.57%</b>	<b>24.66%</b>
<b><i>Large Peer Cities</i></b>		
Richmond, VA MSA	84.53%	30.29%
Jacksonville, FL MSA	88.13%	25.21%
Birmingham, AL CSA	83.75%	24.82%
Knoxville, TN CSA	82.56%	24.76%
Louisville, KY MSA	84.57%	23.24%
Greensboro/Winston-Salem, NC CSA	81.03%	22.76%
<b>Greenville, SC CSA</b>	<b>79.38%</b>	<b>21.13%</b>
<b><i>Target Cities</i></b>		
Austin, TX MSA	86.35%	38.83%
Raleigh/Durham, NC CSA	86.17%	37.85%
Charlotte, NC MSA	85.25%	30.51%
Nashville, TN MSA	85.16%	28.27%
<b>Greenville, SC MSA</b>	<b>80.57%</b>	<b>24.66%</b>
<b><i>State and United States</i></b>		
United States	84.05%	26.99%
South Carolina	81.27%	22.74%

Percent of labor force with high a school diploma, 2006

Percent of labor force with a bachelor's degree, 2006

## Labor Force Education

2006 Census Region	Percent of Labor Force with a High School Diploma	Percent of Labor Force with a Bachelor's Degree
<b><i>Small Peer Cities</i></b>		
Lexington, KY CSA	100.43	111.84
Columbia, SC MSA	101.70	108.02
Charleston, SC MSA	102.97	104.99
Little Rock, AR MSA	103.89	98.26
Jackson, MS CSA	99.02	99.40
<b>Greenville, SC MSA</b>	<b>95.86</b>	<b>91.37</b>
<b><i>Large Peer Cities</i></b>		
Richmond, VA MSA	100.56	112.22
Jacksonville, FL MSA	104.85	93.37
Birmingham, AL CSA	99.64	91.96
Knoxville, TN CSA	98.22	91.73
Louisville, KY MSA	100.62	86.10
Greensboro/Winston-Salem, NC CSA	96.40	84.30
<b>Greenville, SC CSA</b>	<b>94.44</b>	<b>78.29</b>
<b><i>Target Cities</i></b>		
Austin, TX MSA	102.73	143.85
Raleigh/Durham, NC CSA	102.52	140.21
Charlotte, NC MSA	101.43	113.01
Nashville, TN MSA	101.32	104.73
<b>Greenville, SC MSA</b>	<b>95.86</b>	<b>91.37</b>
<b><i>State and United States</i></b>		
United States	100.00	100.00
South Carolina	96.69	84.24

Percent of labor force with high a school diploma, 2006

Percent of labor force with a bachelor's degree, 2006



**Labor Force Education Index**

Labor force education levels have two principal roles in regional economic development. First education labor is adaptable labor. The better educated the labor force, the more quickly the economy can take advantage of new opportunities or recover from negative shocks. Second, creative and education people are attracted to communities with educated residents and labor forces.

Index values for labor force education are based on the percent of the labor force that have high school diplomas and the percent that are college graduates. The findings indicate that the Greenville area ranks last among the five small peer cities, the six large peer cities, and the four target cities in labor force education. Both the Greenville MSA and CSA regions have index values less than 100, indicating that labor force education measures are below the national average.

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**Labor Force Education Index**


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***Small Peer Cities***

Lexington, KY CSA	106.14
Columbia, SC MSA	104.86
Charleston, SC MSA	103.98
Little Rock, AR MSA	101.07
Jackson, MS CSA	99.21
<b>Greenville, SC MSA</b>	<b>93.61</b>

***Large Peer Cities***

Richmond, VA MSA	106.39
Jacksonville, FL MSA	99.11
Birmingham, AL CSA	95.80
Knoxville, TN CSA	94.97
Louisville, KY MSA	93.36
Greensboro/Winston-Salem, NC CSA	90.35
<b>Greenville, SC CSA</b>	<b>86.36</b>

***Target Cities***

Austin, TX MSA	123.29
Raleigh/Durham, NC CSA	121.37
Charlotte, NC MSA	107.22
Nashville, TN MSA	103.02
<b>Greenville, SC MSA</b>	<b>93.61</b>

***State and United States***

United States	100.00
South Carolina	90.47

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Percent of labor force with high a school diploma

Percent of labor force with a bachelor's degree

## Knowledge Workers Index

Knowledge workers are responsible for many of the new products and production processes that result in new economic activity. Knowledge workers are measured as the percent of the labor force in occupations requiring creativity. These occupations are management, business/operations, finance, computers, math, sciences, engineering, architecture, education, healthcare, media, arts, design, entertainment, and high-end sales. The Greenville MSA ranks last among the small peer cities and target cities in the percent of employment in knowledge occupations. The Greenville CSA ranks last among the large peer cities in knowledge workers. Index values less than 100 for both the Greenville MSA and CSA indicate that the Greenville area also lags the nation in the percent of labor force in knowledge jobs.

### Knowledge Workers Index

<u>Small Peer Cities</u>		<u>Large Peer Cities</u>	
Lexington, KY CSA	105.16	Richmond, VA MSA	109.11
Little Rock, AR MSA	103.23	Birmingham, AL CSA	103.01
Columbia, SC MSA	102.24	Knoxville, TN CSA	99.25
Charleston, SC MSA	101.59	Jacksonville, FL MSA	98.05
Jackson, MS CSA	96.63	Louisville, KY MSA	94.92
<b>Greenville, SC MSA</b>	<b>95.53</b>	Greensboro/Winston-Salem, NC CSA	90.17
		<b>Greenville, SC CSA</b>	<b>89.78</b>
<u>Target Cities</u>		<u>State and United States</u>	
Raleigh/Durham, NC CSA	122.54	United States	100.00
Austin, TX MSA	118.65	South Carolina	90.04
Charlotte, NC MSA	108.30		
Nashville, TN MSA	103.33		
<b>Greenville, SC MSA</b>	<b>95.53</b>		

Percent of employment in management, business/operations, finance, computers, math, architecture, engineering, sciences, law, education, healthcare, arts, design, entertainment, media, and high-end sales occupations

## Innovation Index

Innovative activity and capacity in the metro areas is represented by patents per 10,000 workers; employment in computer, science, and engineering occupations (measure of industry R&D); and graduate students in science and engineering per 10,000 residents (measure of university R&D). The Greenville MSA and CSA ranked high among small and large peer cities in innovation. Greenville also had a higher innovation index than two of the target cities (Nashville and Charlotte). Yet, the Greenville MSA innovation index was below the U.S. average and less than 40% of the index values for Austin, TX and Raleigh/Durham, NC.

### Innovative Activity and Capacity Index

<u>Small Peer Cities</u>		<u>Large Peer Cities</u>	
Lexington, KY CSA	125.41	Knoxville, TN CSA	96.57
<b>Greenville, SC MSA</b>	<b>98.20</b>	Richmond, VA MSA	80.14
Charleston, SC MSA	70.17	<b>Greenville, SC CSA</b>	<b>74.53</b>
Columbia, SC MSA	68.46	Greensboro/Winston-Salem, NC CSA	62.43
Little Rock, AR MSA	62.61	Louisville, KY MSA	59.59
Jackson, MS CSA	47.80	Birmingham, AL CSA	56.19
		Jacksonville, FL MSA	39.82
<u>Target Cities</u>		<u>State and United States</u>	
Austin, TX MSA	261.46	United States	100.00
Raleigh/Durham, NC CSA	248.48	South Carolina	53.59
<b>Greenville, SC MSA</b>	<b>98.20</b>		
Nashville, TN MSA	69.34		
Charlotte, NC MSA	56.59		

Patents per 10,000 workers

Percent of employment in computer, science, and engineering occupations

Graduate students in science and engineering per 10,000 residents

## Entrepreneurial Environment Index

Creative workers and innovative activity are most likely to result in new businesses and jobs if the community has a supportive entrepreneurial environment. Five measures were selected to reflect the entrepreneurial environment of Greenville and the comparison cities. Competition among area businesses is measured by business churning (business births and deaths as percent of all establishments) and number of establishments per 10,000 workers. An increase in competition is associated with greater entrepreneurial activity in the region. Venture capital investments per capita (2000-2006) and employment in professional and technical services industries are measures of support for entrepreneurial activity. Entrepreneurs and small businesses will be more successful in regions with developed support systems. Finally, proprietors' income as a percent of total income reflects the importance of small businesses in the local economy, and a strong small business sector is an important seedbed for future entrepreneurs. The entrepreneurial environment index for the Greenville MSA (81.95) and CSA (78.14) rank high compared to the small and large peer cities. However, the Greenville index values remain very low in comparison to the four target cities and the U.S.

### Entrepreneurial Environment Index

<u>Small Peer Cities</u>		<u>Large Peer Cities</u>	
<b>Greenville, SC MSA</b>	<b>81.95</b>	Birmingham, AL CSA	81.88
Jackson, MS CSA	77.48	Jacksonville, FL MSA	81.60
Charleston, SC MSA	76.02	<b>Greenville, SC CSA</b>	<b>78.14</b>
Little Rock, AR MSA	74.74	Knoxville, TN CSA	77.94
Lexington, KY CSA	69.24	Richmond, VA MSA	76.98
Columbia, SC MSA	69.15	Louisville, KY MSA	74.34
		Greensboro/Winston-Salem, NC CSA	66.23
<u>Target Cities</u>		<u>State and United States</u>	
Austin, TX MSA	186.13	United States	100.00
Raleigh/Durham, NC CSA	141.92	South Carolina	69.40
Nashville, TN MSA	99.98		
Charlotte, NC MSA	92.37		
<b>Greenville, SC MSA</b>	<b>81.95</b>		

Business churning (births + deaths)  
 Establishments per employee  
 Proprietors' income as a share of total income  
 Venture capital investments per capita, 2000-2006  
 Percent of employment in professional, scientific, and technical services industries

## Industrial Structure and Composition Index

The impacts of the four principal inputs of regional competitiveness (labor education, knowledge workers, innovation, entrepreneurship) will vary depending on the industrial structure of the regional economy. Economic development is strongest in regions with relatively young establishments, a large share of locally owned businesses, and large shares of jobs in high wage occupations and high wage industries. The industrial structure indices for Greenville MSA and CSA present interesting contrasts. Greenville has a favorable industrial structure when compared to the small peer cities but an unfavorable structure in comparison to the large peer cities and the target cities. This unfavorable industrial structure may dampen the economic development benefits resulting from new innovative or entrepreneurial activity in the region.

### Industrial Structure and Composition Index

<u>Small Peer Cities</u>		<u>Large Peer Cities</u>	
Little Rock, AR MSA	92.27	Richmond, VA MSA	95.31
<b>Greenville, SC MSA</b>	<b>90.46</b>	Birmingham, AL CSA	92.85
Jackson, MS CSA	88.96	Greensboro/Winston-Salem, NC CSA	92.22
Columbia, SC MSA	87.35	Jacksonville, FL MSA	91.47
Charleston, SC MSA	87.13	Louisville, KY MSA	91.40
Lexington, KY CSA	86.97	<b>Greenville, SC CSA</b>	<b>88.68</b>
		Knoxville, TN CSA	86.54
<u>Target Cities</u>		<u>State and United States</u>	
Austin, TX MSA	101.43	United States	100.00
Charlotte, NC MSA	99.78	South Carolina	NA
Raleigh/Durham, NC CSA	95.07		
Nashville, TN MSA	94.94		
<b>Greenville, SC MSA</b>	<b>90.46</b>		

Average age of manufacturing establishments  
 Share of manufacturing establishments locally owned  
 Share of jobs in high wage industries (traded industries only)  
 Share of industry jobs in high wage occupations (traded industries only)

## Employment Diversity and Density Index

A diverse industrial base and high employment density (employees per square mile) are beneficial to regional economic growth because diversity and density facilitate the development and exchange of ideas and information among area businesses. That is, creativity and innovation spread most rapidly in diverse and dense economies. Greenville has a favorable diversity/density structure when compared to small peer cities; however, Greenville ranks low in comparison to large peer cities and the target cities. Greenville's low diversity ranking may limit the income and employment benefits associated with local innovative and entrepreneurial activity.

### Employment Diversity and Density Index

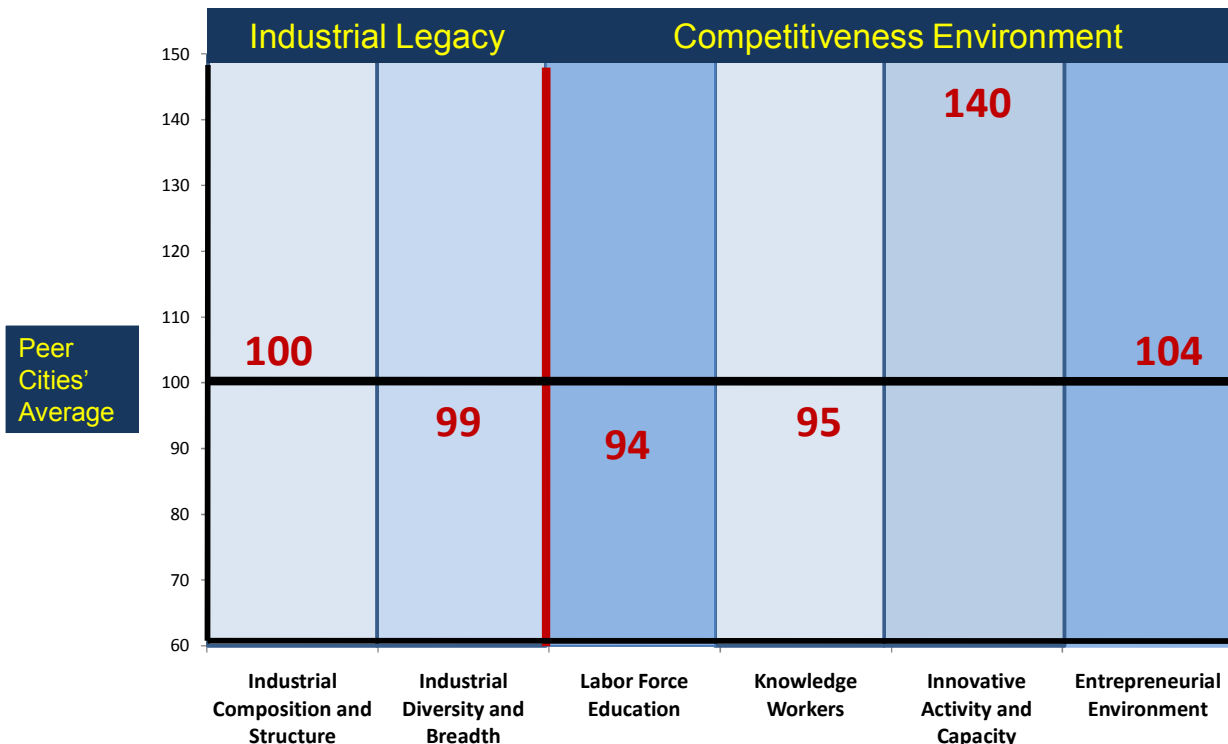
<u>Small Peer Cities</u>		<u>Large Peer Cities</u>	
<b>Greenville, SC MSA</b>	<b>92.95</b>	Louisville, KY MSA	119.42
Lexington, KY CSA	87.50	Jacksonville, FL MSA	118.04
Little Rock, AR MSA	85.29	Knoxville, TN CSA	104.59
Charleston, SC MSA	79.67	Greensboro/Winston-Salem, NC CSA	96.85
Columbia, SC MSA	79.05	Birmingham, AL CSA	96.31
Jackson, MS CSA	71.93	Richmond, VA MSA	90.83
		<b>Greenville, SC CSA</b>	<b>73.07</b>
<u>Target Cities</u>		<u>State and United States</u>	
Charlotte, NC MSA	144.23	United States	100.00
Raleigh/Durham, NC CSA	125.20	South Carolina	72.19
Nashville, TN MSA	120.33		
Austin, TX MSA	116.92		
<b>Greenville, SC MSA</b>	<b>92.95</b>		

Employment per square mile  
Employment diversity index

# Economic Scorecard, Part 1

The economic scorecards summarize the index values for Greenville versus the averages for the small and large peer cities combined. The Greenville MSA and CSA values in the scorecards are derived by dividing the Greenville index value (for example, 95.53 for the MSA for knowledge workers) by the average index value for the eleven peer cities (for example, 100.31 for knowledge workers). The resulting scorecard value ( $95.53/100.31=95.23$ ) indicates the extent to which Greenville is “above” or “below” average relative to its peer cities. The Economic Scorecard, Part 1 indicates that the Greenville MSA is relatively strong in innovative activity (140) and entrepreneurial environment (104), average in industrial structure (100) and diversity (99), and relatively weak in labor force education (94) and knowledge workers (95).

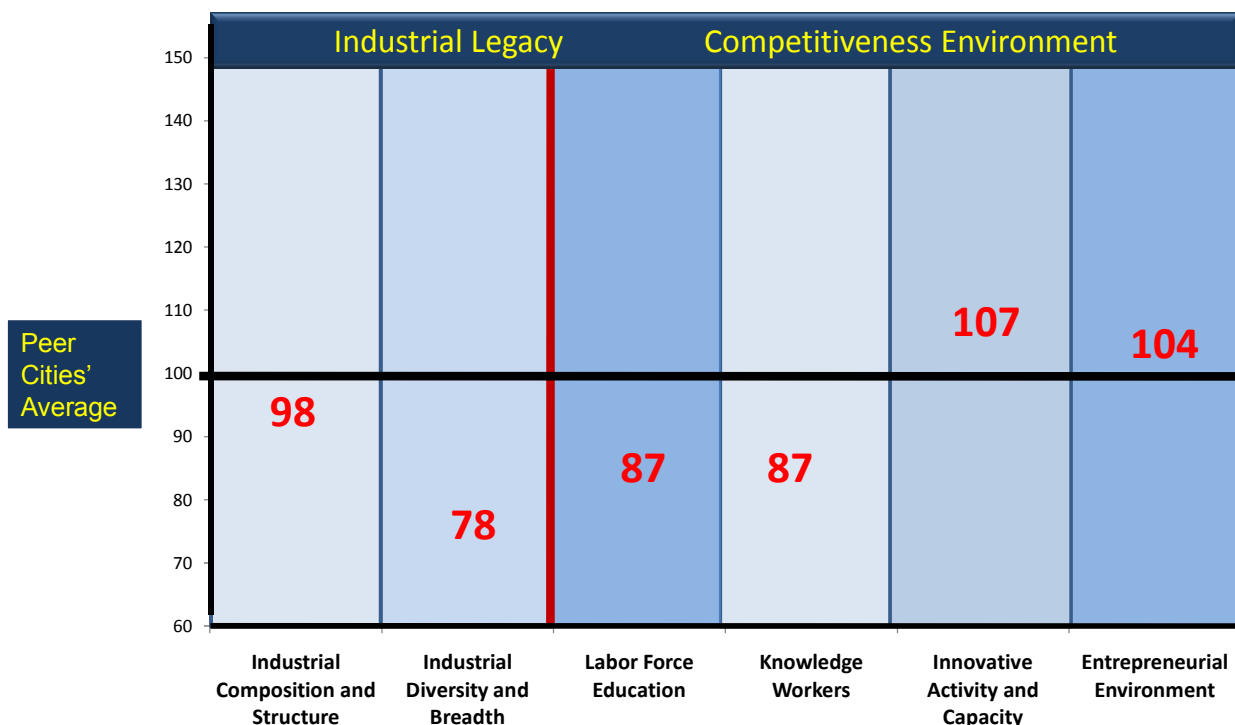
## ECONOMIC SCORECARD, PART 1: Benchmarking Greenville MSA Versus Small and Large Peer Cities



## Economic Scorecard, Part 2

Scorecard 2 compares the Greenville CSA index values to the 11 peer city average. The Greenville CSA maintains strengths in innovation (107) and entrepreneurship (104), but the advantage in innovation is much reduced from the MSA. The Greenville CSA's industrial structure (98) remains average, but industrial diversity (78), labor force education (87) and knowledge workers (87) are well below the eleven-city average.

### ECONOMIC SCORECARD, PART 2: Benchmarking Greenville CSA Versus Small and Large Peer Cities

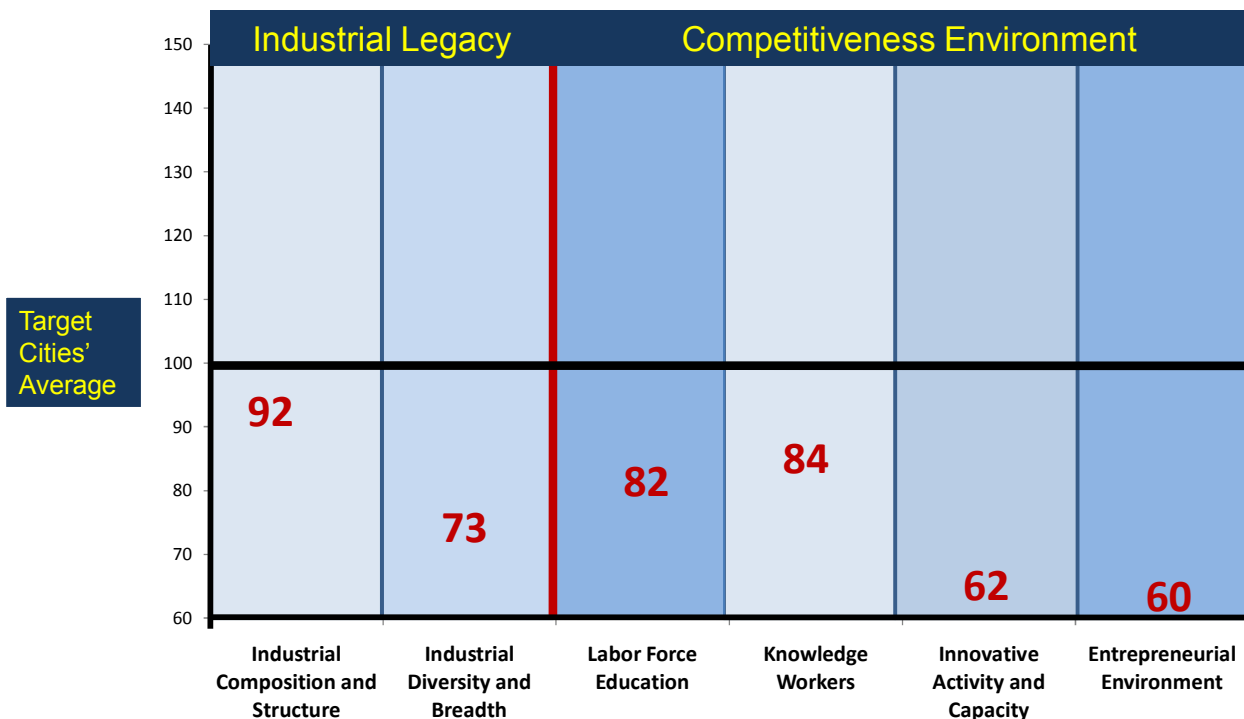




## Economic Scorecard, Part 3

Economic scorecard part 3 compares the Greenville MSA with the average index values for the four target cities (Austin, TX; Charlotte, NC; Nashville, TN; and Raleigh/Durham, NC). The scorecard indicates that the Greenville area significantly lags the target cities average in all competitiveness areas except industrial structure. The lowest relative index values for Greenville are for innovative activity and entrepreneurial environment.

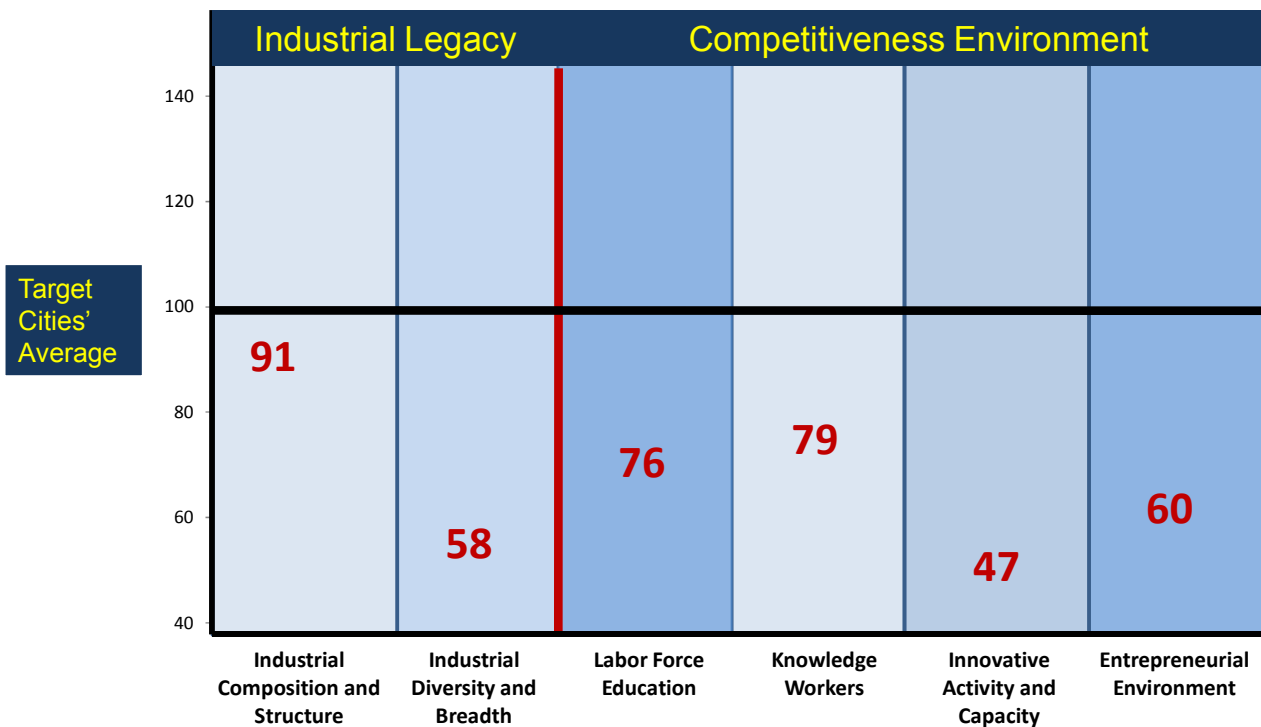
### ECONOMIC SCORECARD, PART 3: Benchmarking Greenville MSA Versus Four Target Cities (Austin, Charlotte, Nashville, Raleigh-Durham)



## Economic Scorecard, Part 4

Scorecard part 4 compares the Greenville CSA with the average index values for the four target cities. Lower scores are provided for the Greenville CSA region than for the Greenville MSA region (see part 3). The Greenville CSA is especially weak in comparison with the target cities on the indices representing industrial diversity and innovative activity.

### **ECONOMIC SCORECARD, PART 4: Benchmarking Greenville CSA Versus Four Target Cities (Austin, Charlotte, Nashville, Raleigh-Durham)**



## Step 4. Ranking the Greenville MSA against its Peer and Target Cities

To reveal the region’s strengths and weaknesses from the scorecard findings, the Greenville MSA is ranked against its Peer and Target cities (16 cities including the Greenville MSA) along with four competitiveness components.

1. **Labor force education. Weakness.** While the Greenville MSA has a strong cluster of engineering talent, the general level of education in the labor force (% with high school degrees and % with college degrees) ranks at or near the bottom of the peer and target cities.
2. **Knowledge Workers. Weakness.** Mirroring the low ranks in general education, the Greenville MSA share of “knowledge worker” occupations in the labor force ranks 14<sup>th</sup> in the peer and target cities group. These occupations are management, business/operations, finance, computers, math, sciences, engineering, architecture, education, health care, media, arts, design, entertainment, and high-end sales.
3. **Innovative Activity. Strength.** The Greenville MSA is among the leaders in Innovative activity and capacity in the peer and target cities. It ranks 3<sup>rd</sup> in patents per 10,000 workers; 4<sup>th</sup> in share of employment in computer, science and engineering occupations, and 4<sup>th</sup> in graduate students in science and engineering per 10,000 residents (measure of university R&D).
4. **Entrepreneurial Environment. Mixed.** The Greenville MSA is near the top (3<sup>rd</sup> ranking city) in the share of employment in professional and technical services industries. However, the Greenville MSA ranks at the bottom in proprietors income as a percent of total income. Similarly, business churning (business births and deaths as percent of all establishments) ranks 10<sup>th</sup> in the group and the number of establishments per 10,000 workers ranks 15<sup>th</sup> among peer and target cities. These low rankings reflect a relatively weak small business sector compared to peer and target cities.

## Step 4.COMPETITIVENESS INPUTS FOR THE **GREENVILLE MSA**

<b>Labor Force Education</b>	<b>Knowledge Workers</b>	<b>Innovative Activity</b>	<b>Entrepreneurial Environment</b>
<b>WEAKNESSES: RANK</b> <u>% LF HS GRAD</u> <b>16</b>  <u>% LF COL GRAD</u> <b>14</b>	<b>WEAKNESSES: RANK</b> <u>% KNOWLEDGE WORKERS</u> <b>14</b>	<b>WEAKNESSES:</b>	<b>WEAKNESSES: RANK</b> <u>BUSINESS CHURN</u> <b>10</b>  <u>SMALL BUSINESS</u> <b>15</b>  <u>%INCOME SELF EMP</u> <b>16</b>
<b>STRENGTHS:</b>	<b>STRENGTHS:</b>	<b>STRENGTHS: RANK</b> <u>PATENTS</u> <b>3</b>  <u>% ENGINEER</u> <b>4</b>  <u>GRAD STUDENTS In SCIENCE/ENG</u> <b>4</b>	<b>STRENGTHS: RANK</b> <u>% EMP in PROF &amp; TECH INDUSTRY</u> <b>3</b>  <u>VENTURE CAPITAL</u> <b>4</b>

RANK is Greenville MSA against All Peer Cities and Target cities (16 cities in total).

RANK 1 IS BEST; RANK 16 IS WORST IN GROUP

# Appendix A

Table 1. Metropolitan Area Characteristics Used in Cluster Analysis to Group 118 Southern Metro Areas According to New Economy Environment

## A. Innovative Activity

Number of patents issued per 1000 population (USPTO, 1990-99)\*

Academic R&D expenditures per capita (NSF, 1998-2000)

Doctorates awarded in science and engineering per 1000 population (NSF, 1998-2000)

Graduate science and engineering students per 1000 population (NSF, 1998-2000)

Percentage of employment in technical professions - computer science; engineering except civil; natural, physical, and social science (BLS, 2000)

## B. Labor Force Quality

Percentage of adult population (25+) that were high school graduates (Census, 2000)

Percentage of adult population (25+) that were college graduates (Census, 2000)

Percentage of population (age 16-64) that were employed (Census, 2000)

## C. Entrepreneurial Environment

Percentage change in number of establishments (CBP, 1990-2000)

Percentage of establishments with fewer than 20 employees (BLS, 2000)

Number of Inc. 500 companies per 100,000 population ([www.inc500.com](http://www.inc500.com), 1990-2000)

Venture capital investments (\$) per capita (Price Waterhouse Coopers, 2000)

Percentage of employment in managerial and business professions (BLS, 2000)

Percentage of employment in SIC 73, business services (CBP, 2000)

Percentage of establishments in SIC 73, business services (CBP, 2000)

## D. Localization Economics

Percentage of employment in high-technology industries (CBP, 2000)

Percentage of establishments in high-technology industries (CBP, 2000)

Percentage of employment in information technology industries (CBP, 2000)

Percentage of establishments in information technology industries (CBP, 2000)

Percentage of employment in the largest 3 manufacturing industries (2-digit SIC, CBP, 2000)

Percentage of establishments in largest 3 manufacturing industries (2 digit SIC, CBP 1997)

Population Density (Census, 2000)

## E. Competitiveness in Global Economy

Exports as a percent of gross metropolitan product, metro areas ranked in quantiles (DOC, 1999)

\*CBP = County Business Patterns; DOC = U.S Department of Commerce; BLS = U.S. Bureau of Labor Statistics; NSF = National Science Foundation; USPTO = U.S. Patent and Trademark Office

**Appendix B**  
**Labor Force Education**

<b>2006 Census Region</b>	<b>Percent of Labor Force with a High School Diploma</b>	<b>Percent of Labor Force with a Bachelor's Degree</b>
<b><i>Small Peer Cities</i></b>		
Lexington, KY CSA	84.42%	30.19%
Columbia, SC MSA	85.48%	29.16%
Charleston, SC MSA	86.55%	28.34%
Little Rock, AR MSA	87.32%	26.52%
Jackson, MS CSA	83.23%	26.83%
<b>Greenville, SC MSA</b>	<b>80.57%</b>	<b>24.66%</b>
<b><i>Large Peer Cities</i></b>		
Richmond, VA MSA	84.53%	30.29%
Jacksonville, FL MSA	88.13%	25.21%
Birmingham, AL CSA	83.75%	24.82%
Knoxville, TN CSA	82.56%	24.76%
Louisville, KY MSA	84.57%	23.24%
Greensboro/Winston-Salem, NC CSA	81.03%	22.76%
<b>Greenville, SC CSA</b>	<b>79.38%</b>	<b>21.13%</b>
<b><i>Target Cities</i></b>		
Austin, TX MSA	86.35%	38.83%
Raleigh/Durham, NC CSA	86.17%	37.85%
Charlotte, NC MSA	85.25%	30.51%
Nashville, TN MSA	85.16%	28.27%
<b>Greenville, SC MSA</b>	<b>80.57%</b>	<b>24.66%</b>
<b><i>State and United States</i></b>		
United States	84.05%	26.99%
South Carolina	81.27%	22.74%

Percent of labor force with high a school diploma, 2006  
Percent of labor force with a bachelor's degree, 2006

**Knowledge Workers**

<b>2006 Census Region</b>	<b>Percent of Knowledge Workers</b>
<b><i>Small Peer Cities</i></b>	
Lexington, KY CSA	41.10%
Little Rock, AR MSA	40.35%
Columbia, SC MSA	39.96%
Charleston, SC MSA	39.71%
Jackson, MS CSA	37.77%
<b>Greenville, SC MSA</b>	<b>37.34%</b>
<b><i>Large Peer Cities</i></b>	
Richmond, VA MSA	42.65%
Birmingham, AL CSA	40.26%
Knoxville, TN CSA	38.79%
Jacksonville, FL MSA	38.32%
Louisville, KY MSA	37.10%
Greensboro/Winston-Salem, NC CSA	35.25%
<b>Greenville, SC CSA</b>	<b>35.09%</b>
<b><i>Target Cities</i></b>	
Raleigh/Durham, NC CSA	47.90%
Austin, TX MSA	46.38%
Charlotte, NC MSA	42.33%
Nashville, TN MSA	40.39%
<b>Greenville, SC MSA</b>	<b>37.34%</b>
<b><i>State and United States</i></b>	
United States	39.09%
South Carolina	35.19%

Percent of employment in occupations classified as management, business/operations, finance, computers, math, architecture, engineering, sciences, law education, healthcare, arts, design, entertainment, media, and high-end sales, 2006

### Innovative Activity and Capacity

2006 Census Region	Patents per 10,000 Workers	Percent of Employment in Computer, Science, & Engineering Occupations	Science & Engineering Graduate Students per 10,000 Residents
<b>Small Peer Cities</b>			
Lexington, KY CSA	3.93	4.49%	27.87
<b>Greenville, SC MSA</b>	<b>4.59</b>	<b>4.63%</b>	<b>16.21</b>
Charleston, SC MSA	3.37	4.32%	8.69
Columbia, SC MSA	2.29	4.05%	10.64
Little Rock, AR MSA	1.40	3.92%	10.32
Jackson, MS CSA	1.24	3.01%	7.54
<b>Large Peer Cities</b>			
Knoxville, TN CSA	3.80	3.66%	15.90
Richmond, VA MSA	3.58	5.14%	9.82
<b>Greenville, SC CSA</b>	<b>5.60</b>	<b>3.77%</b>	<b>8.03</b>
Greensboro/Winston-Salem, NC CSA	4.05	3.37%	7.23
Louisville, KY MSA	2.99	3.28%	8.24
Birmingham, AL CSA	1.84	3.49%	8.33
Jacksonville, FL MSA	2.26	4.05%	0.00
<b>Target Cities</b>			
Austin, TX MSA	31.41	8.39%	21.15
Raleigh/Durham, NC CSA	14.94	8.35%	44.52
<b>Greenville, SC MSA</b>	<b>4.59</b>	<b>4.63%</b>	<b>16.21</b>
Nashville, TN MSA	2.23	3.54%	12.45
Charlotte, NC MSA	2.57	4.20%	5.33
<b>State and United States</b>			
United States	7.29	4.58%	12.42
South Carolina	3.30	3.32%	5.35

Patents per 10,000 workers, 2004

Percent of employment in computer, science, and engineering occupations, 2006

Graduate students in science and engineering per 10,000 residents, 2005

### Entrepreneurial Environment

2006 Census Region	Business Churning	Establishments per 1,000 Employees	Proprietors' Income as a Percent of Total Income	Average Venture Capital per Capita	Percent of Employment in Professional, Scientific, & Technical Services Industries
<b>Small Peer Cities</b>					
Jackson, MS CSA	20.45%	56.96	13.09%	18.39	3.73%
Charleston, SC MSA	22.26%	68.62	8.73%	3.73	4.73%
Little Rock, AR MSA	20.84%	60.54	11.27%	6.19	4.19%
Lexington, KY CSA	19.91%	59.02	8.27%	14.07	4.09%
Columbia, SC MSA	20.64%	62.14	7.92%	4.64	4.19%
<b>Greenville, SC MSA</b>	<b>20.48%</b>	<b>55.95</b>	<b>7.30%</b>	<b>NA</b>	<b>5.18%</b>
<b>Large Peer Cities</b>					
Birmingham, AL CSA	20.40%	58.02	14.12%	30.80	4.07%
Jacksonville, FL MSA	28.70%	66.25	7.49%	29.53	4.31%
<b>Greenville, SC CSA</b>	<b>19.96%</b>	<b>58.86</b>	<b>8.20%</b>	<b>78.10</b>	<b>3.75%</b>
Knoxville, TN CSA	18.95%	59.19	12.20%	17.33	4.68%
Richmond, VA MSA	21.33%	69.61	7.89%	31.24	4.34%
Louisville, KY MSA	20.20%	56.66	11.34%	27.61	3.64%
Greensboro/Winston-Salem, NC CSA	19.10%	57.19	8.70%	27.25	2.95%
<b>Target Cities</b>					
Austin, TX MSA	25.41%	61.67	12.20%	588.85	6.79%
Raleigh/Durham, NC CSA	23.17%	62.17	8.16%	330.92	8.41%
Nashville, TN MSA	21.83%	54.77	19.71%	72.74	4.45%
Charlotte, NC MSA	23.83%	57.71	11.49%	89.00	4.67%
<b>Greenville, SC MSA</b>	<b>20.48%</b>	<b>55.95</b>	<b>7.30%</b>	<b>NA</b>	<b>5.18%</b>
<b>State and United States</b>					
United States	21.80%	64.48	11.86%	122.87	4.99%
South Carolina	20.93%	65.25	8.72%	8.15	3.47%

Business churning (births + deaths), 2004

Establishments per 1,000 employees, 2004

Proprietors' income as a share of total income, 2005

Average venture capital investments per capita, 2000-2006

Percent of employment in professional, scientific, and technical services industries, 2005

2006 Census Region	Industrial Structure and Composition			
	Average Year Manufacturing Establishments Started	Percent Establishments Locally Owned	Concentration of High Wage Industries	Concentration of High Wage Occupations
<b>Small Peer Cities</b>				
Little Rock, AR MSA	1975.64	84.25%	81.33%	84.35%
<b>Greenville, SC MSA</b>	<b>1975.07</b>	<b>77.84%</b>	<b>84.48%</b>	<b>81.84%</b>
Jackson, MS CSA	1975.39	80.38%	77.67%	79.54%
Columbia, SC MSA	1974.96	76.96%	76.97%	78.02%
Charleston, SC MSA	1978.39	81.65%	77.72%	70.46%
Lexington, KY CSA	1978.19	78.87%	76.05%	74.89%
<b>Large Peer Cities</b>				
Richmond, VA MSA	1974.63	80.81%	88.46%	93.63%
Birmingham, AL CSA	1975.20	86.52%	81.29%	83.92%
Greensboro/Winston-Salem, NC CSA	1971.84	81.76%	88.63%	80.08%
Jacksonville, FL MSA	1970.55	84.43%	79.66%	82.82%
Louisville, KY MSA	1971.86	85.11%	83.72%	77.59%
<b>Greenville, SC CSA</b>	<b>1975.01</b>	<b>78.58%</b>	<b>82.34%</b>	<b>75.98%</b>
Knoxville, TN CSA	1972.67	82.36%	76.48%	68.72%
<b>Target Cities</b>				
Austin, TX MSA	1977.52	83.61%	94.67%	108.32%
Charlotte, NC MSA	1973.26	79.18%	100.97%	101.05%
Raleigh/Durham, NC CSA	1976.96	80.46%	87.04%	94.39%
Nashville, TN MSA	1971.25	82.14%	91.27%	87.91%
<b>Greenville, SC MSA</b>	<b>1975.07</b>	<b>77.84%</b>	<b>84.48%</b>	<b>81.84%</b>
<b>State and United States</b>				
United States	1975.03	81.49%	100.00%	100.00%
South Carolina	NA	NA	81.31%	74.35%

Average year of manufacturing establishment start-up, 2007

Share of manufacturing establishments locally owned, 2007

Concentration of jobs in high wage industries (traded industries only): 100 equals US average, 2004

Concentration of industry jobs in high wage occupations (traded industries only): 100 equals US average, 2004

## APPENDIX C

### ACCRA COST OF LIVING INDEX IN PEER AND TARGET CITIES

“C2ER, founded in 1961 as the American Chamber of Commerce Researchers Association (ACCRA), is a nonprofit professional organization comprising research staff of chambers of commerce, economic development organizations and agencies, and related organizations throughout the United States and Canada. In its dedication to improving business information through research, C2ER developed the *ACCRA Cost of Living Index* to meet the need for a measure of living cost differentials among urban areas. Originally titled *Inter-City Cost of Living Indicators Project*, the *ACCRA Cost of Living Index* has been published quarterly since 1968. The *ACCRA Cost of Living Index* is based on nearly 100,000 data points gathered primarily by C2ER members located in 400 cities.” From: C2ER P.O. Box 100217, Arlington VA 22210 data download.

ACCRA COST OF LIVING INDEX QTR 4 2006-QTR 3 2007		
URBAN AREA AND STATE	COMPOSITE INDEX	HOUSING
Knoxville TN	88.2	79.6
Winston-Salem NC	90.7	78.4
Charlotte NC	90.8	77.7
Columbia SC	91.1	82.6
Nashville-Franklin TN	91.3	83.0
<u>Greenville SC</u>	<u>92.1</u>	<u>78.5</u>
Jackson MS	92.9	85.0
Birmingham AL	93.8	81.3
Little Rock-N Little Rock AR	94.7	79.4
Austin TX	95.9	86.0
Jacksonville FL	97.7	95.0
Lexington KY	98.2	89.9
Louisville KY	98.2	90.4
Charleston-N Charleston SC	98.4	94.2
Raleigh NC	98.5	93.6
Richmond VA	107.9	116.4

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