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Central Georgia Regional Analysis: Demographics, Economy, Entrepreneurship and Innovation

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CENTRAL GEORGIA REGIONAL ANALYSIS:

DEMOGRAPHICS, ECONOMY, ENTREPRENEURSHIP AND INNOVATION

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EXECUTIVE SUMMARY

The Center for Economic Development at the Levin College of Urban Affairs at Cleveland State University prepared this report for JumpStart America. The objective of this study is to provide background analysis of the Central Georgia region[1] for JumpStart America as they conduct interviews and other qualitative research to create a Regional Entrepreneurial Action Plan (REAP).

This report is organized into three chapters: Demographics, Economy and Industry, and Entrepreneurship and Innovation. Each chapter contains the same structure: a summary of findings based on a review of other studies followed by an analysis conducted by the Center for Economic Development. In most instances, the Center's analysis includes a graphic or table followed by bullet points highlighting the observations of data collected and studied. To create a benchmarking system, the Center compared the Central Georgia region and its counties to the state of Georgia and the United States.

DEMOGRAPHICS

The demographic information gathered on the Central Georgia region revealed interesting population trends. Overall, from 2000 to 2010, the 8-county Central Georgia region saw an 11% increase in population. Most of this population increase occurred in Houston County, which gained 26.3% of its population during this ten-year period. Contrary to this trend, the city of Macon lost population over this time (-6.1%) while Bibb County, the county in which the city resides gained population (1.1%). The counties of the Central Georgia region vary in size, from the largest Bibb County with a 2010 population of 155,547, to the smallest Twiggs county with only 9,023 residents.

The workforce of the Central Georgia region is moderately educated and skilled. When comparing educational attainment, the Macon MSA, Peach County, and Baldwin County have lower levels of educational attainment for advanced degrees than the state of Georgia and the national average. The percentage of residents over the age of 25 in the Macon MSA that have either a bachelor's or master's degree is 19.1%; this is much lower than the state of Georgia (27.6%) and the United States (28.5%). The Central Georgia region has a large amount of individuals with educational attainment equivalent to middle-skills jobs (*High School Graduate, G.E.D., or Alternative; Some College, No Degree; and/ or Associate's Degree*). Most counties have shares of these degrees above 60%, which is higher than the state of Georgia (56.8%) and the United States (57.4%).

The Central Georgia region is not competitive when compared to traditional indicators of economic prosperity such as high per capita income and a low poverty rate, although it has caught up quite a bit over the last ten years when compared to the state of Georgia and the nation. From 2000 to 2010, per

[1] The Central Georgia region is defined for this study as Baldwin, Bibb, Crawford, Houston, Jones, Monroe, Peach, and Twiggs counties.

capita income rose by 11.2% in the Central Georgia region, increasing per capita income from $29,779 to $33,108; these levels, however, are still lower than the state of Georgia ($34,040 in 2000 and $34,747 in 2010) and the United States ($38,393 in 2000 and $39,937 in 2010). In many of the more rural counties, per capita income is lower than the Central Georgia regional average. The poverty rate in the Macon MSA for 2011 (22.7%) was higher than the state of Georgia (19.1%) and the United States (15.9%). Within the Central Georgia region, the poverty rate ranged from 28.3% in Baldwin County to 13.9% in Houston County. These indicators highlight the economic issues in the Central Georgia region including low per capita income and high poverty.

INDUSTRY AND ECONOMY

Over the last 30 years, the Central Georgia region has been somewhat competitive with the United States in measures of economic growth (employment, gross product, and average wage), but not competitive with the state of Georgia. The Central Georgia region has actually shown a sizeable competitive disadvantage compared to the state of Georgia. Examining employment, gross product, and average wage shows a widening gap between the performance of the Central Georgia region and the state of Georgia, so much so that between 1978 and 2011 the growth rate of gross product in the state of Georgia was 175.1%, while the Central Georgia region grew by only 75.4% (the United States reported 94.1% growth). This widening gap demonstrates the significant economic issues of the Central Georgia economy. Average annual wages in the Central Georgia region have historically been higher than those in the state of Georgia, but since 1987 the state surpassed the Central Georgia region in average wages and now has an average-wage advantage (in 2011 the state of Georgia reported average wages of $46,941 compared to $40,701 in the Central Georgia region).

The literature regarding the industry and economy in the Central Georgia region has concentrated on the aerospace industry cluster and the importance of the Robins Air Force Base. The major multi-national employers in the aerospace cluster in the Central Georgia region are Boeing, BAE Systems, Northup Grumman, Lockheed Martin, and Bombardier. The aerospace industry provides high-skill, high-wage jobs and is an important cluster for the region to foster.

Additional industry clusters in the Central Georgia region, other than the aerospace cluster, include healthcare and hospitals; kaolin; warehousing and distribution; and heritage and ecotourism. The clusters of kaolin, warehousing and distribution, and heritage and ecotourism look to capitalize on the location and local assets of the Central Georgia region. Kaolin is a white clay mineral used in household items and is extracted from the region. Since the Central Georgia region is a pivotal intersection of the Port of Savannah, the Atlanta region, and North-South interchange of Interstate 75 (I-75), it has become a warehousing and distribution hub to companies like Kohl's, Bass Pro Shops, Sara Lee, and Academy Sports. In addition, the national parks and lakes draw tourists to the region and have created a heritage and ecotourism cluster. Tourists come to see places like the Ocmulgee National Monument and Museum, the Piedmont National Wildlife Refuge, and the historic buildings in Macon. This cluster allows the Central Georgia region to begin to diversify its industry portfolio and not to depend so heavily on aerospace.

The healthcare and hospital cluster is another important cluster that provides employment to many in the Central Georgia region and is driven by two institutions, Mercer University and the Medical Center of Central Georgia. According to employment estimates, 23,316 people worked in the Healthcare and Social Assistance sector in 2011, which is a 27% increase since 2001; this sector represents 12.5% of all employment in the Central Georgia region.

In addition to industry clusters, this report's analysis focuses on industries that outperform others and are considered "winning industries." There are five (Tier I) winning industries and six (Tier II) winning industries in the Central Georgia region. These industries vary in size and scope, but all have growing gross products, regional specialization, and livable wages.

Of the Tier I industries, one is in *Public Administration* (Federal Government), one is in *Finance and Insurance* (Insurance Carriers), one is in *Professional, Scientific, and Technical Services* (Architectural, Engineering, and Related Services), and two are in *Health Care and Social Assistance* (Offices of Physicians; General Medical and Surgical Hospitals). Of the Tier II industries, one is in *Public Administration* (Military), one is in *Utilities* (Electric Power Generation, Transmission and Distribution), one is in *Manufacturing* (Animal Slaughtering and Processing), two are in *Transportation and Warehousing* (Rail Transportation; Support Activities for Air Transportation), and one in *Repair and Maintenance* (Electronic and Precision Equipment Repair and Maintenance).

ENTREPRENEURSHIP AND INNOVATION

Entrepreneurship is not a part of the regional culture, and the region scores low in entrepreneurial measures. In all the literature reviewed, there was a strong emphasis on business development by means of attracting and expanding existing businesses, but no focus on facilitating entrepreneurship, enhancing technology transfer, or fostering innovation.

There is a sizeable amount of venture capital in the state of Georgia and a considerable amount of venture capital firms in the state, but most of these investments and investment firms are located in the Atlanta region. There have been zero risk capital investments in the Central Georgia region in the last five years (2007-2011). With the lack of early- and late-stage investment, the investment climate should be fostered.

In this analysis, patent data is used as a proxy for innovation. There were 172 patents (both those already granted and those applied for) in Central Georgia between January 2008 and October 2012. Since multiple inventors can be designated for one patent, it is important to minimize double counting of patents within the overall 8-county Central Georgia region. Therefore, the patents were assigned to a region by the address of the primary inventor. Of the 172 patents, only 13% had an assignee from the Central Georgia region, indicating that businesses within the Central Georgia region are not a major driver of local patents. Individual owners of patents accounted for 50% of all patents. Examining the assignee information of patents in the Central Georgia region revealed that the largest holder of patents is Smisson-Cartledge Biomedical, LLC. and Southern Spine, LLC.

CONCLUDING COMMENTS

Examining the Central Georgia regional entrepreneurial and innovation ecosystem reveals that there are minimal resources available to entrepreneurs and those who want to engage in this sphere. It is important to note the amount of entrepreneurship and innovation activity occurring in the backyard of the Central Georgia region. Exemplifying this are the licenses granted by universities in technology transfer applications. Although there were no licenses granted from universities in the form of technology transfer in the Middle Georgia region in 2011, there were 107 licenses issued in Fulton county (only 90 minutes away) and 75 in Clarke County (only 2 hours away). This demonstrates that there is an entrepreneurial spirit and sizeable ecosystem in the state of Georgia, and it is up to regional leadership, businesses, and other stakeholders to help foster it within the Central Georgia region.

There are significant challenges to overcome—structural and cultural—in the Central Georgia economy for the region to become a leader in innovation and entrepreneurship. The leadership of the region has had the foresight to address these shortfalls by showing a willingness to cooperate on a regional economic development level and on taking action to improve the community. The new initiative to create a Regional Entrepreneurial Action Plan in order to accelerate entrepreneurship and innovation has the potential to improve economic growth in the region.

CHAPTER 1: DEMOGRAPHICS

The analysis, conducted by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs, examines the demographic profile of the Central Georgia region. This section describes the socio-demographic characteristics of the region and includes analysis of population, population distribution by race, Hispanic population, income, poverty, and educational attainment.

The Central Georgia region is defined for this study as an 8-county region that includes Baldwin, Bibb, Crawford, Houston, Jones, Monroe, Peach, and Twiggs counties. These counties combine to form Macon-Warner Robins-Fort Valley Combined Statistical Area (CSA) and Milledgeville Micropolitan Statistical Area[2]. The Macon-Warner Robins-Fort Valley CSA consists of the Macon MSA[3], the Warner Robins Micropolitan Area[4], and the Fort Valley Micropolitan Area[5]. The city of Macon, the largest city within the study area, is located in Bibb County. In order to create a benchmarking system, we compared the Central Georgia region (and its components) to the state of Georgia, and the United States.

Some of the counties in the Central Georgia region are relatively small and therefore data was limited. In these cases, 3-year annual averages or 5-year annual averages were substituted when necessary.

[2] The Milledgeville Micropolitan Statistical Area is composed of Baldwin and Hancock Counties. Only Baldwin County is in the Middle Georgia Regional Analysis.
[3] The Macon MSA includes Bibb, Crawford, Jones, Monroe, and Twiggs Counties
[4] The Warner Robins Micropolitan Area is comprised of Houston County
[5] The Fort Valley Micropolitan Area is comprised of Peach County

DEMOGRAPHIC ANALYSIS

POPULATION & GROWTH

Table 1. Population Trends, 2000 & 2010

Area	2000 [A]	2010 [B]	Difference (2000-2010)	Percent Change (2000-2010)
Macon Metro Area	222,368	232,293	9,925	4.5%
Bibb County	153,887	155,547	1,660	1.1%
City of Macon	97,255	91,351	-5,904	-6.1%
Crawford County	12,495	12,630	135	1.1%
Jones County	23,639	28,669	5,030	21.3%
Monroe County	21,757	26,424	4,667	21.5%
Twiggs County	10,590	9,023	-1,567	-14.8%
Fort Valley Micro Area / Peach County	23,668	27,695	4,027	17.0%
Warner Robins Metro Area / Houston County	110,765	139,900	29,135	26.3%
Milledgeville Micro Area	54,776	55,149	373	0.7%
Baldwin County	44,700	45,720	1,020	2.3%
Hancock County	10,076	9,429	-647	-6.4%
Central Georgia Region (8-County)	***401,501***	***445,608***	***44,107***	***11.0%***
Georgia	8,186,453	9,687,653	1,501,200	18.3%
United States	281,421,906	308,745,538	27,323,632	9.7%

Sources: [A] U.S. Census Bureau, 2000 Decennial Census; [B] U.S. Census Bureau, 2010 Decennial Census

- The population of the Central Georgia region (8-county) increased from 401,501 in 2000 to 445,608 in 2010, growing by 11.0% over the 10 years. The region's growth was less than the state of Georgia (18.3%), but greater than the growth seen in the nation (9.7%) (Table 1).
- The largest county in the Central Georgia region, Bibb County, reported a population increase of 1.1% from 2000 to 2010. While the county reported an increase in population, the city of Macon, which resides in Bibb County, reported a decline in population (-6.1%).
- Houston County had the fastest growth in population with 26.3% followed by Monroe (21.5%) and Jones (21.3%) counties. These counties were not equal in size although the population of Houston County came close to 140,000 residents, whereas both Monroe and Jones counties had a population smaller than 30,000.
- With a 14.8% population decline between 2000 and 2010, Twiggs County experienced the greatest population decline. Twiggs was the only shrinking county in the Central Georgia region during the reference period (excluding Hancock County because it is not in the 8-County Central Georgia region).

Race Distribution

Table 2. Population by Race Distribution, 2010

		White Alone		Black or African American Alone		Asian Alone		Two or More Races		Some Other Race		American Indian & Alaska Native Alone		Native Hawaiian & Other Pacific Islander Alone	
Area	2010 Population	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Macon Metro Area	232,293	122,104	52.6%	100,934	43.5%	2,979	1.3%	3,088	1.3%	2,502	1.1%	550	0.2%	136	0.1%
Bibb Cty	155,547	67,199	43.2%	81,116	52.1%	2,531	1.6%	2,235	1.4%	2,014	1.3%	332	0.2%	120	0.1%
City of Macon	91,351	26,087	28.6%	62,060	67.9%	701	0.8%	1,299	1.4%	977	1.1%	179	0.2%	48	0.1%
Crawford Cty	12,630	9,428	74.6%	2,818	22.3%	33	0.3%	158	1.3%	127	1.0%	58	0.5%	8	0.1%
Jones Cty	28,669	20,989	73.2%	7,008	24.4%	187	0.7%	316	1.1%	103	0.4%	63	0.2%	3	0.0%
Monroe Cty	26,424	19,365	73.3%	6,268	23.7%	214	0.8%	276	1.0%	228	0.9%	69	0.3%	4	0.0%
Twiggs Cty	9,023	5,123	56.8%	3,724	41.3%	14	0.2%	103	1.1%	30	0.3%	28	0.3%	1	0.0%
Fort Valley Micro Area*	27,695	13,383	48.3%	12,715	45.9%	223	0.8%	425	1.5%	874	3.2%	67	0.2%	8	0.0%
Warner Robins Metro Area**	139,900	88,626	63.3%	39,998	28.6%	3,403	2.4%	3,853	2.8%	3,360	2.4%	475	0.3%	185	0.1%
Milledgeville Micro Area	55,149	27,421	49.7%	25,948	47.1%	629	1.1%	613	1.1%	385	0.7%	133	0.2%	20	0.0%
Baldwin Cty	45,720	25,121	54.9%	18,965	41.5%	582	1.3%	556	1.2%	379	0.8%	98	0.2%	19	0.0%
Hancock Cty	9,429	2,300	24.4%	6,983	74.1%	47	0.5%	57	0.6%	6	0.1%	35	0.4%	1	0.0%
Central Georgia Region (8-County)	***445,608***	***249,234***	***55.9%***	***172,612***	***38.7%***	***7,187***	***1.6%***	***7,922***	***1.8%***	***7,115***	***1.6%***	***1,190***	***0.3%***	***348***	***0.0%***
Georgia	9,687,653	5,787,440	59.7%	2,950,435	30.5%	314,467	3.2%	207,489	2.1%	388,872	4.0%	32,151	0.3%	6,799	0.1%
United States	308,745,538	223,553,265	72.4%	38,929,319	12.6%	14,674,252	4.8%	9,009,073	2.9%	19,107,368	6.2%	2,932,248	0.9%	540,013	0.2%

Notes: *Consists exclusively of Peach County, GA; **Consists exclusively of Houston County, GA
Source: U.S. Census Bureau, 2010 Decennial Census

- The racial composition of the Central Georgia region varies by county. A majority of the counties in Central Georgia report at least half of the residents are classified as *White* (Baldwin, Crawford, Houston, Jones, Monroe, and Twiggs Counties). Overall, the Central Georgia region is more diversified than Georgia and the United States; the share of the *White* population in the 8-county Central Georgia region (55.9%) was smaller than the share in the state of Georgia (59.7%) and the United States (72.4 %) (Table 2).

- Examining the county-level racial distribution shows that three counties have a population classified mostly as *White* (72% and higher)*:* Crawford, Jones and Monroe Counties.

- The city of Macon, which has a sizeable population of over 90,000, has the second-highest proportion of *Black or African American Alone* residents (67.9%), following the small Hancock County. All counties, statistical areas, and cities in Table 2 have higher rates of *Black or African American Alone* populations than the national average.

Hispanic Population

Table 3. Hispanic Population, 2000 & 2010

Area	Hispanic Population 2000 [A]	Percentage Hispanic of Total Population 2000 [A]	Hispanic Population 2010 [B]	Percentage Hispanic of Total Population 2010 [B]	Difference (2000-2010)	Percentage Change (2000-2010)
Macon, GA Metro Area	2,886	1.3%	5,679	2.4%	2,793	96.8%
Bibb County	2,023	1.3%	4,389	2.8%	2,366	117.0%
City of Macon	1,166	1.2%	2,264	2.5%	1,098	94.2%
Crawford County	301	2.4%	301	2.4%	0	0.0%
Jones County	169	0.7%	315	1.1%	146	86.4%
Monroe County	281	1.3%	535	2.0%	254	90.4%
Twiggs County	112	1.1%	139	1.5%	27	24.1%
Fort Valley, GA Micro Area / Peach County	998	4.2%	124	1.4%	-874	-87.6%
Warner Robins, GA Metro Area / Houston County	3,363	3.0%	8,515	6.1%	5,152	153.2%
Milledgeville, GA Micro Area	661	1.2%	1,058	1.9%	397	60.1%
Baldwin County	607	1.4%	139	0.3%	-468	-77.1%
Hancock County	54	0.5%	919	9.7%	865	1601.9%
Central Georgia Region (8-County)	***7,854***	***2.0%***	***14,457***	***3.4%***	***6,603***	***84.1%***
Georgia	435,227	5.3%	853,689	8.8%	418,462	96.1%
United States	35,305,818	12.5%	50,477,594	16.3%	15,171,776	43.0%

Sources: [A] U.S. Census Bureau, 2000 Decennial Census; [B] U.S. Census Bureau, 2010 Decennial Census

- The Hispanic population in the Central Georgia region (8-county) almost doubled from 7,854 in 2000 to 14,457 in 2010, growing by 84.1% over the ten-year period. The region’s growth rate was less than the state of Georgia (96.1%), but greater than that of the United States (43.0%) (Table 3).

- The largest Hispanic population by county in the Central Georgia region is in Houston County, which reported a population of 8,515 residents who were Hispanic, accounting for 6.1% of the county’s population.

Per Capita Income

Table 4. Per Capita Personal Income, 2000 & 2010

Area	2000	2010	Difference (2000-2010)	Percentage Change (2000-2010)
Macon, GA Metro Area	$30,975	$34,427	$3,452	11.1%
Bibb County	$32,877	$34,861	$1,984	6.0%
Crawford County	$24,380	$30,077	$5,697	23.4%
Jones County	$28,282	$32,237	$3,955	14.0%
Monroe County	$29,151	$37,596	$8,445	29.0%
Twiggs County	$20,848	$30,662	$9,814	47.1%
Fort Valley, GA Micro Area / Peach County	$26,069	$28,887	$2,818	10.8%
Warner Robins, GA Metro Area / Houston County	$29,702	$33,505	$3,803	12.8%
Milledgeville, GA Micro Area	$24,242	$26,498	$2,256	9.3%
Hancock County	$26,000	$27,663	$1,663	6.3%
Baldwin County	$16,438	$20,956	$4,518	27.5%
Central Georgia Region (8-County)	**$29,779**	**$33,108**	**$3,329**	**11.2%**
Georgia	$34,040	$34,747	$707	2.1%
United States	$38,393	$39,937	$1,544	4.0%

Notes: Per capita income adjusted for inflation to 2010 dollars
Source: U.S. Bureau of Economic Analysis

- The Central Georgia region (8-county) per capita income in 2010 ($33,108) was lower than per capita income in Georgia ($34,747) and in the United States ($39,937) (Table 4).

- Per capita income in the state of Georgia increased by 2.1% from 2000 to 2010. Even though per capita income in most of the counties of the Central Georgia region grew at a significantly faster rate than the state of Georgia, the income per person was lower in Central Georgia counties than in the state of Georgia.

- Monroe County had the highest level of per capita income in the region in 2010 ($37,596), greater than the state of Georgia ($34,747), but lower than the United States ($39,937). Baldwin County had the lowest per capita income ($20,956).

- Twiggs County had the largest rate of growth in per capita income of over 47.1% from 2000 to 2010. Per capita income of Twiggs County was among the lowest in the region in 2000, but its strong growth brought it to $30,662 in 2010.

POVERTY LEVEL

Table 5. Population below Poverty Level, 2011

Area	2011 Total Population Below Poverty Level	Percent of Total Population Below Poverty Level	Male Population Below Poverty Level	Percent Population Below Poverty Level (Male)	Female Population Below Poverty Level	Percent Population Below Poverty Level (Female)
Macon, GA Metro Area [A]	49,638	22.7%	20,543	19.8%	29,095	25.3%
Bibb County [A]	36,437	24.4%	14,830	21.3%	21,607	27.1%
City of Macon [A]	30,385	34.9%	12,247	31.4%	18,138	37.7%
Crawford, Jones, Monroe, & Twiggs Counties [A]	13,201	19.1%	5,713	16.8%	7,488	21.3%
Fort Valley Micro Area / Peach County [B]	6,851	27.4%	2,910	23.5%	3,941	31.2%
Warner Robins Metro Area / Houston County [A]	19,857	13.9%	8,940	13.0%	10,917	14.8%
Milledgeville Micro Area [B]	13,686	28.3%	5,188	22.8%	8,498	33.2%
Baldwin County [B]	11,481	28.3%	4,370	23.1%	7,111	32.9%
Hancock County [B]	2,205	28.4%	818	21.8%	1,387	34.5%
Georgia [A]	1,827,743	19.1%	824,886	16.8%	1,002,857	20.4%
United States [A]	48,452,035	15.9%	21,825,281	14.7%	26,626,754	17.2%

Notes: Percentage of population below poverty level = Total population below poverty level/population for whom poverty status is determined.
Sources: [A] U.S. Census Bureau, American Community Survey 1-Year Annual Estimates, 2011; [B] U.S. Census Bureau, American Community Survey 3-Year Annual Estimates, 2009-2011

- More than one in five people in the Macon, GA Metro Area had income below the poverty level. The region's poverty rate (22.7%) was higher than that of the state of Georgia (19.1%) and the United States (15.9%) (Table 5).
- Houston County had the lowest poverty rate of all counties in the Central Georgia region (13.9%) followed by the combined region of Crawford, Jones, Monroe and Twiggs counties at 19.1%.
- Baldwin County had the highest poverty rate of all counties in the 8-county Central Georgia region (excluding Hancock County since it is not in the 8-county region). The 3-year annual average from 2009-2011 estimates the poverty rate at 28.3% (male poverty rate of 23.1%, and female poverty rate of 32.9%) for Baldwin County.
- Peach County had the second-highest county level poverty rate in the region with a 3-year annual average estimate from 2009-2011 of 27.4% (male poverty rate of 23.5%, and female poverty rate of 31.2%).
- The city of Macon had the highest poverty rate among all geographic locations in Table 5; it had a total poverty rate of 34.9%, 31.4% among males and 37.7% among females.
- For county-level breakouts see Appendix Table A.1. Population below Poverty Level, 2006-2010 Annual Average.

Education Measures

Table 6. Educational Attainment, 2011

Area	Total Population Over 25 Years Old	Less Than 9th Grade		9th to 12th Grade No Diploma		High School Graduate, GED, or Alternative		Some College, No Degree		Associate's Degree		Bachelor's Degree		Graduate or Professional Degree	
		Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older
Macon, GA Metro Area [A]	149,990	9,209	6.1%	21,240	14.2%	50,116	33.4%	31,937	21.3%	8,862	5.9%	18,649	12.4%	9,977	6.7%
Bibb Cty [A]	99,914	5,835	5.8%	13,385	13.4%	32,045	32.1%	21,867	21.9%	5,586	5.6%	13,370	13.4%	7,826	7.8%
Macon City [A]	54,345	4,186	7.7%	8,988	16.5%	19,133	35.2%	11,088	20.4%	2,398	4.4%	5,030	9.3%	3,522	6.5%
Crawford, Jones, Monroe, & Twiggs Ctys [A]	50,076	3,374	6.7%	7,855	15.7%	18,071	36.1%	10,070	20.1%	3,276	6.5%	5,279	10.5%	2,151	4.3%
Fort Valley Micro Area / Peach Cty [B]	16,363	1,281	7.8%	1,916	11.7%	5,467	33.4%	3,412	20.9%	1,178	7.2%	1,961	12.0%	1,148	7.0%
Warner Robins Metro Area / Houston Cty [A]	90,841	2,867	3.2%	7,967	8.8%	26,112	28.7%	22,841	25.1%	7,772	8.6%	13,140	14.5%	10,142	11.2%
Milledgeville Micro Area [B]	34,815	2,397	6.9%	4,129	11.9%	13,556	38.9%	6,907	19.8%	1,811	5.2%	3,224	9.3%	2,791	8.0%
Baldwin Cty [B]	27,784	1,837	6.6%	2,811	10.1%	10,446	37.6%	5,733	20.6%	1,640	5.9%	2,804	10.1%	2,513	9.0%
Hancock Cty [B]	7,031	560	8.0%	1,318	18.7%	3,110	44.2%	1,174	16.7%	171	2.4%	420	6.0%	278	4.0%
Georgia [A]	6,308,961	368,948	5.8%	620,384	9.8%	1,849,141	29.3%	1,311,569	20.8%	419,954	6.7%	1,119,648	17.7%	619,317	9.8%
United States [A]	206,471,670	12,317,606	6.0%	16,771,699	8.1%	58,653,211	28.4%	43,822,166	21.2%	16,016,175	7.8%	36,915,459	17.9%	21,975,354	10.6%

Sources: [A] U.S. Census Bureau, American Community Survey 1-Year Annual Estimates, 2011; [B] U.S. Census Bureau, American Community Survey 3-Year Annual Estimates, 2009-2011

- Bachelor degree attainment among all geographies in the Central Georgia regions lags behind the state of Georgia and the United States.

- Houston County has the highest educational attainment for *Bachelor's Degrees* (14.5%) and *Graduate or Professional Degrees* (11.2%) for the population over 25 years old in the Central Georgia region in 2011. In the metric *Graduate or Professional Degree,* Houston County (11.2%) outperforms the state of Georgia (9.8%) and the United States (10.6%) (Table 6).

- Baldwin county has the highest number of individuals with educational attainment equal to middle-skills jobs (*High School Graduate, G.E.D., or Alternative; Some College, No Degree; and/or Associate's Degree)*. Sixty-four percent (64.1%) of the county's residents over the age of 25 have these credentials.

- The city of Macon has the lowest educational attainment in the Central Georgia region. The city has the highest level of individuals over the age of 25 with less than a 12th grade education (24.2%).

- For county-level breakouts see Appendix Table A.2. Educational Attainment, 2006-2010 Annual Average

CHAPTER 2: ECONOMY AND INDUSTRY

This report, a product of the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs, examines the economic profile of the Central Georgia region. First, it summarizes information from other studies that were conducted on the Central Georgia regional economy. Second, it describes the major findings of an analysis conducted by the Center for Economic Development.

The analytical section includes an analysis of trends in total employment, gross product, and average wage. It identifies high-performing (winning) industries, unemployment, employment dynamics, employment by occupations, top employers, fast growth firms, foreign direct investment, economic inclusion, and economic development organizations.

The Central Georgia region is defined for this study as an 8-county region that includes Baldwin, Bibb, Crawford, Houston, Jones, Monroe, Peach, and Twiggs counties. These counties are known within the literature as both the Central Georgia region and the Middle Georgia region. In addition, these counties combine to form Macon-Warner Robins-Fort Valley Combined Statistical Area (CSA) and Milledgeville Micropolitan Statistical Area (MSA)[6]. The Macon-Warner Robins-Fort Valley CSA consists of the Macon MSA[7], the Warner Robins Micropolitan Area[8], and the Fort Valley Micropolitan Area[9]. The city of Macon, the largest city within the study area, is located in Bibb County. In order to create a benchmarking system, we compared the Central Georgia region (and its components) to the state of Georgia, and the United States.

[6] The Milledgeville Micropolitan Statistical Area is composed of Baldwin and Hancock Counties. Only Baldwin County is in the Central Georgia Regional Analysis.
[7] The Macon MSA includes Bibb, Crawford, Jones, Monroe, and Twiggs Counties
[8] The Warner Robins Micropolitan Area is comprised of Houston County
[9] The Fort Valley Micropolitan Area is comprised of Peach County

REVIEW OF OTHER STUDIES: ECONOMY

ECONOMIC CLIMATE

The overall economic climate in the Central Georgia region has not been rosy, especially for Macon, its largest city. According to Dr. Jeffrey Humphrey, Director of the Simon S. Selig, Jr. Center for Economic Growth at the Terry College of Business at the University of Georgia, “Macon was hit very, very hard by the Great Recession: The job losses were relentless, continuing for nearly two years. Macon’s labor market did not bottom out until the first quarter of 2010. From peak-to-trough, 9,400 jobs were lost.”[10] Not all is lost for the region, the Warner Robins area grew during the recession, mostly due to expansion by the federal government, from the Robins Air Force Base.[11] Dr. Humphrey does offer a cautionary tale by saying, “At the projected rate of job growth, it will take Macon about seven years to replace the lost jobs and the nation about five years.”[12]

As a result of this serious economic need, local economic development directors have indicated to regional leadership that they are interested in coordinating economic development on a regional level. This could improve employment and standards of living, as well as stimulating economic development throughout the region, especially in more rural counties.

INDUSTRY CLUSTERS

In 2007, the Middle Georgia Economic Development District developed a comprehensive regional economic development strategy for 2007 to 2012. This strategy was developed for the region and for the Economic Development Administration. Currently, the Middle Georgia Economic Development District is in development stages to complete a second economic development strategy for 2012 to 2017; a draft of the strategy was released to the public in August 2012 for comment.[13]

Based upon literature and data collected for this report the industry clusters have been modified to five industry clusters:

1. Aerospace
2. Healthcare/Hospitals
3. Kaolin (a clay mineral)
4. Warehousing and Distribution
5. Heritage and Ecotourism

[10] Humphreys, Jeffrey “Economy: The Middle Georgia Report” Georgia Trend. May 2011
[11] Humphreys, Jeffrey “Economy: The Middle Georgia Report” Georgia Trend. May 2011
[12] Humphreys, Jeffrey “Economy: The Middle Georgia Report” Georgia Trend. May 2011
[13] http://www.middlegeorgiarc.org

Aerospace

Overall, the state of Georgia has a strong advantage in three main sectors of the aerospace industry: aerospace manufacturing; air transportation; and maintenance, repair and overhaul.[14]
Within the Central Georgia region, the Georgia Department of Economic Development has identified Middle Georgia College Applied Aerospace Research Institute and the Mercer Engineering Research Center as technology centers of innovation for aerospace.[15]

The U.S. government has a strong presence in the Central Georgia region; this is mostly because Robins Air Force Base is located in Houston County. The military base, according to an economic impact conducted on FY2011, employed 22,911 individuals (military, civilian, and other) and contributed an estimated total economic impact of $4.49 billion.[16] Since Robins AFB is a large source of employment for the region, the 21st Century Partnership, a community organization that supports the base, has already begun to lobby Washington not to close or lay off employees from Robins AFB as they being their new round of Base Realignment and Closure Commission (BRAC).[17]

Some major employers in the Central Georgia region in the Aerospace cluster are[18]:

- Boeing
- BAE Systems Inc.
- Northrop Grumman Corp.
- Bombardier Aerospace
- Lockheed Martin Corp.

Middle Georgia Aerospace Workforce Alliance

- Since having a skilled workforce is very important to this cluster, the Middle Georgia Aerospace Workforce Alliance was formed to mitigate workforce issues in this sector.
- This Alliance is a partnership between industry, education, and community stakeholders to identify workforce needs, communicate with education and training facilities, and train the workforce that industry requires.

Healthcare/Hospitals

- The literature in the Central Georgia region does not specifically acknowledge that there is a healthcare/hospital industry cluster, but based upon the employment and characteristics of local anchor institutions the region should consider the healthcare and hospital industry as a cluster.

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[14] "Georgia Center of Innovation for Aerospace: UAS Program Overview" November 2011
[15] "Georgia Center of Innovation for Aerospace: UAS Program Overview" November 2011
[16] Robins Air Force Base, Ga. "Economic Impact Statement" The Robins Rev-Up February 24, 2012
[17] Crenshaw, Wayne. "Robins AFB Supporters Already Preparing for Possible BRAC." The Telegraph. January 27, 2012.
[18] Georgia Power, Community and Economic Development, 2010; For more information on Central Georgia region, Aerospace Employers See Appendix Table A.3.

- The anchor intuitions of Mercer University with medical and pharmacy schools provide important support to this cluster by:
    1. Acting as an essential workforce-supply mechanism through which training and a pipeline of future workers may be obtained.
    2. Fostering innovation and medical advancement through research centers and faculty collaboration with the added benefit of contributing to the knowledge spillover in the overall economy.
- The Medical Center of Central Georgia, a Level I trauma facility, provides an essential healthcare presence in the area. In addition, the Medical Center of Central Georgia is also a sizeable employer in the region.

Kaolin

- Kaolin extraction is one of the major industries within the Central Georgia regions. Kaolin is a white clay mineral used in household items, health and beauty aids, food, and paper products.[19]
- Cheaper overseas labor has caused U.S. kaolin production to move overseas to South America and Asia, and this has caused employment losses in the Central Georgia region. [20]

Warehousing and Distribution

- The Central Georgia region has tried to position itself as a warehousing and distribution hub based upon its physical location. The region, and its central city Macon, lie strategically at the center of a triangle of the Port of Savannah, the Atlanta region, and the North-South interchange of Interstate 75 (I-75).
- Multiple retail companies have opened distributions centers such as:[21]
    - Kohl's
    - Bass Pro Shops
    - Sara Lee
    - Academy Sports

Heritage and Ecotourism

- In the Central Georgia region, many natural forests and landmarks fuel an ecotourism market and hospitality industry.
- Local attractions include:
    - The Ocmulgee National Monument and Museum
    - The Piedmont National Wildlife Refuge
    - Regional lakes
    - Historic Macon buildings

[19] CEDS Strategy Committee "2007-2012 Comprehensive Economic Development Strategy (CEDS) for the Middle Georgia Development District" August 2007

[20] CEDS Strategy Committee "2007-2012 Comprehensive Economic Development Strategy (CEDS) for the Middle Georgia Development District" August 2007

[21] CEDS Strategy Committee "2007-2012 Comprehensive Economic Development Strategy (CEDS) for the Middle Georgia Development District" August 2007

  - Historic Byron (Peach County)
- Tourism is important to the Central Georgia region to diversify its industry base.
- The region is involved in heritage/historical, nature-based, agri- and ecotourism. Of these, it is important to lure heritage travelers to the area because studies have shown that they tend to stay longer and spend more money than other tourists.
- The Middle Georgia Regional Commission is trying to capitalize on services offered by the state of Georgia and its regional tourism partnership of the Historic Heartland travel region[22] while fostering regional partnerships to increase tourism to the area.

Economic Development Organizations

MaconNOW!

The city of Macon is recognized as having had a difficult time recovering manufacturing employment because of the relocation of both the Brown & Williamson tobacco company and the Keebler Foods facilities in 2004. Consequently, the city and county leaders joined forces to facilitate successful economic development strategies to foster growth in the area by forming MaconNOW!.[23]

MaconNOW! has four focus areas[24]:

1. Economic Development
2. Workforce Development
3. Strengthening Robins Air Force Base
4. Community Image

Phase I

- From 2005 to 2009 the project had economic impact of 8,400 new jobs (4,000 direct and 4,400 indirect) with an estimated total payroll of $242.6 million (from both direct and indirect jobs).[25]
- These goals were obtained through business retention and expansion, new business development, and an awareness campaign from 2005 to 2009.

Phase II

- As of summer of 2011, MaconNOW! is in its second phase involving an economic development campaign and is currently halfway to its goal of $2.5 million in private pledges for the next phase.[26]

[22] http://www.exploregeorgia.org/HistoricHeartland
[23] Fisher, Donna, K. and Brian Trapnell "MaconNOW!" Economic Development Journal. Spring 2008
[24] Manley, Rodney "Macon NOW Begins Second Phase Of Economic Campaign." The Telegraph. August 24, 2011
[25] Fisher, Donna, K. and Brian Trapnell "MaconNOW!" Economic Development Journal. Spring 2008
[26] Manley, Rodney "Macon NOW Begins Second Phase Of Economic Campaign." The Telegraph. August 24, 2011

NEWTOWN MACON

- NewTown Macon is a nonprofit public-private partnership organization that is designed to implement a comprehensive, coordinated, and continuous plan to revitalize downtown Macon.[27]
- NewTown Macon has 3 areas of focus:
    1. Increasing rental housing stock and growing the number of residents living downtown
    2. Jobs
    3. Sense of place
- NewTown Macon worked with the Middle Georgia Regional Commission to develop a NewTown Macon Strategic Action Plan. This comprehensive plan will be used to help guide the organizations efforts to revitalize downtown during their first phase (2012-2017).

MAIN STREET MACON

- Main Street Macon[28] is an initiative of the city of Macon. It has received a Main Street designation from Georgia Department of Community Affairs.
- Many Main Street Macon programs look to offer a better quality of life and industry mix in Macon, such as[29]:
    - One-Stop Shop for Development – one stop for small business
    - Downtown Macon Business Recruitment Package
    - Entrepreneur Fair

INFRASTRUCTURE INVESTMENT

CONNECT CENTRAL GEORGIA

- Over the next year, the Georgia Department of Transportation is looking to enhance the area's transportation capacity by completing a study named Connect Central Georgia, to determine how best to connect and facilitate east-west mobility across the state.[30]
    - There is extensive development of the Fall Line Freeway to improve transportation connections in Macon and the Central Georgia region.
    - It is important to note, that even though there are massive infrastructure projects in the region, the Middle Georgia Regional Commission estimates that there are approximately 1,100 miles of unpaved roads in the Central Georgia region.[31]

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[27] NewTown Macon. "NewTown Macon's Strategic Action Plan" April 11, 2012
[28] http://www.cityofmacon.net/mainstreet
[29] NewTown Macon. "NewTown Macon's Strategic Action Plan" April 11, 2012
[30] Georgia Department of Transportation "Connect Central Georgia: Corridor History and Investment Analysis" Winter 2011
[31] Middle Georgia Regional Commission. "Middle Georgia Regional Plan 2011-2031, Regional Assessment" 2010.

AIRPORTS

Connectivity is an important driver to economic development and having regional airports is an essential way to facilitate business and commercial connections. The airports in the region are:

- Middle Georgia Regional Airport
  - The main airport in the Central Georgia region, which is located in the city of Macon (Bibb County), reported 916 domestic passengers flying through the airport in 2011, down from 27,659 in 2000.[32] At this time, there is no explanation for the significant decline in the passenger numbers.
- Perry/Houston County Airport[33] - public airport located four miles from Perry, a city in Houston County, Georgia.
- Baldwin County Airport
  - The airport can accommodate smaller aircraft but not large passenger planes. This has limited economic development since executives are unable to fly into the region. Over the last three years, the runways have been extended, but not enough to facilitate significant planes. The Middle Georgia Economic Development District, the regional economic development organization, has indicated it would like to see an expansion of this airport in the future.[34]

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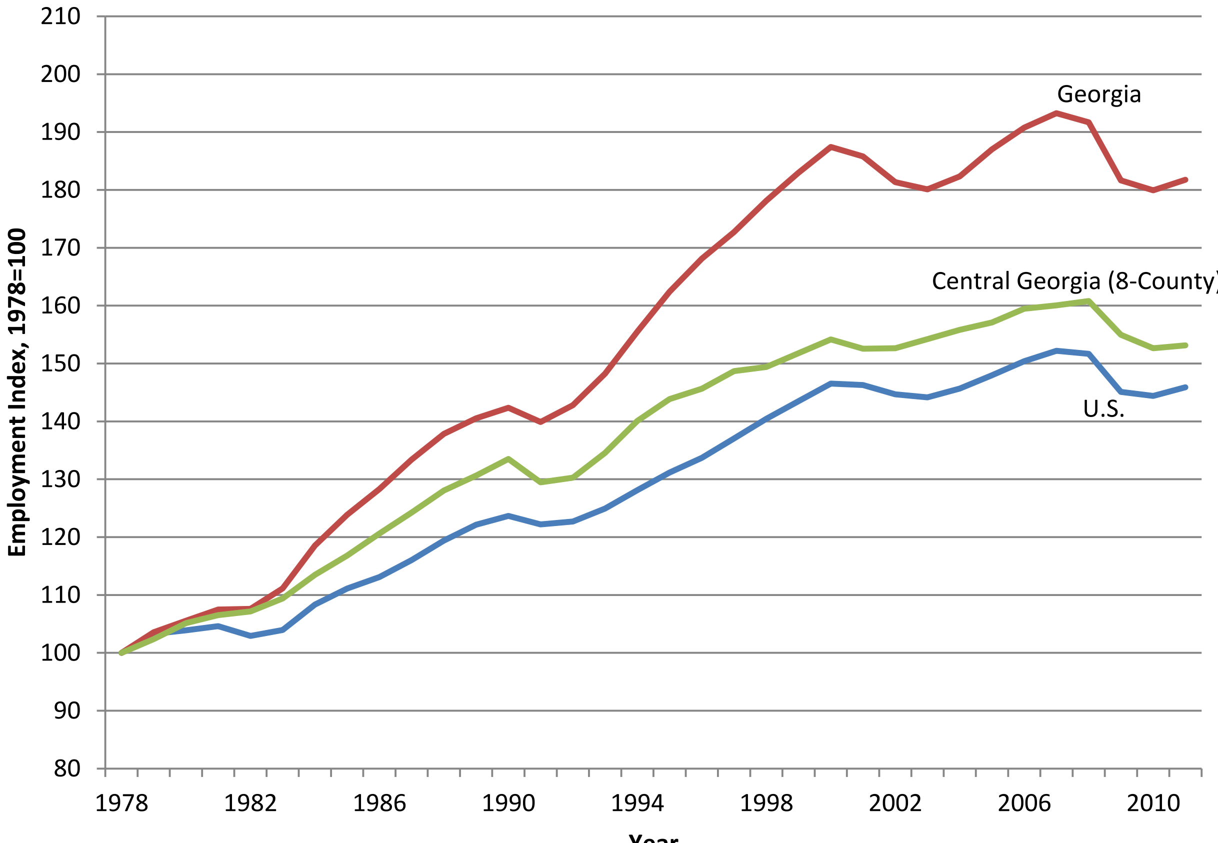
[32] U.S. Department of Transportation – TransStats http://www.transtats.bts.gov/
[33] http://www.pxeairport.com/
[34] Middle Georgia Economic Development District "2012-2017 Comprehensive Economic Development Strategy – Draft"

INDUSTRY ANALYSIS

EMPLOYMENT TRENDS

Figure 1. Total Employment, 1978-2011



Source: Moody's Economy.com

- Employment growth in both the Central Georgia region and the state of Georgia has exceeded that of the nation. Georgia has seen greater overall growth as compared to Central Georgia and the United States but has also experienced more business cycle peaks and troughs than the other two (Figure 1).
- Excluding the most recent recession, the employment growth rate in the Central Georgia region from 1978 to 2006 was 59.4%, relatively close to the growth rate in the United States (50.4%), **but much smaller than the state of Georgia (90.8%)**.

Table 7. Employment Change by Major Industry Sector, 2001-2011

	Central Georgia		Georgia	U.S.
Industry Sector	2011 Employment	Percentage Change, 2001-2011		
Public Administration	54,041	8.1%	9.3%	4.5%
Health Care and Social Assistance	23,316	27.2%	35.7%	26.4%
Retail Trade	22,483	2.7%	-5.8%	-3.5%
Accommodation and Food Services	16,126	12.6%	12.3%	11.9%
Manufacturing	13,939	-30.3%	-31.4%	-28.7%
Finance and Insurance	8,818	18.0%	-2.8%	-1.9%
Administrative and Support and Waste Management and Remediation Services	7,853	-3.6%	3.0%	3.2%
Professional, Scientific, and Technical Services	6,640	3.0%	12.7%	11.1%
Other Services (except Public Administration)	5,335	-26.6%	-11.2%	4.4%
Construction	5,125	-16.7%	-21.9%	-19.8%
Wholesale Trade	4,085	5.1%	-8.3%	-4.4%
Educational Services	3,520	25.6%	38.2%	30.7%
Transportation and Warehousing	3,373	-18.5%	-0.1%	-2.7%
Management of Companies and Enterprises	2,709	37.7%	-5.3%	9.2%
Information	2,505	-41.3%	-31.7%	-25.1%
Agriculture, Forestry, Fishing and Hunting	2,126	-23.7%	-37.2%	-13.3%
Real Estate and Rental and Leasing	1,939	-22.9%	-3.1%	-4.9%
Utilities	1,233	-8.3%	-3.4%	-6.5%
Arts, Entertainment, and Recreation	1,185	-33.1%	4.9%	6.4%
Mining, Quarrying, and Oil and Gas Extraction	288	-36.6%	-30.6%	38.1%
TOTAL	**186,639**	**0.4%**	**-2.2%**	**-0.3%**

Source: Moody's Economy.com

Note: Other Services includes Private Households

- *Public Administration* was the largest sector in the Central Georgia region in terms of employment. This sector accounted for 54,041 employees or 29.0% of total employment and is a total of federal, state, local, and military employees. Robins Air force Base is located in the Central Georgia region and accounts for a large amount of federal civilian workers and military employment (Table 7).

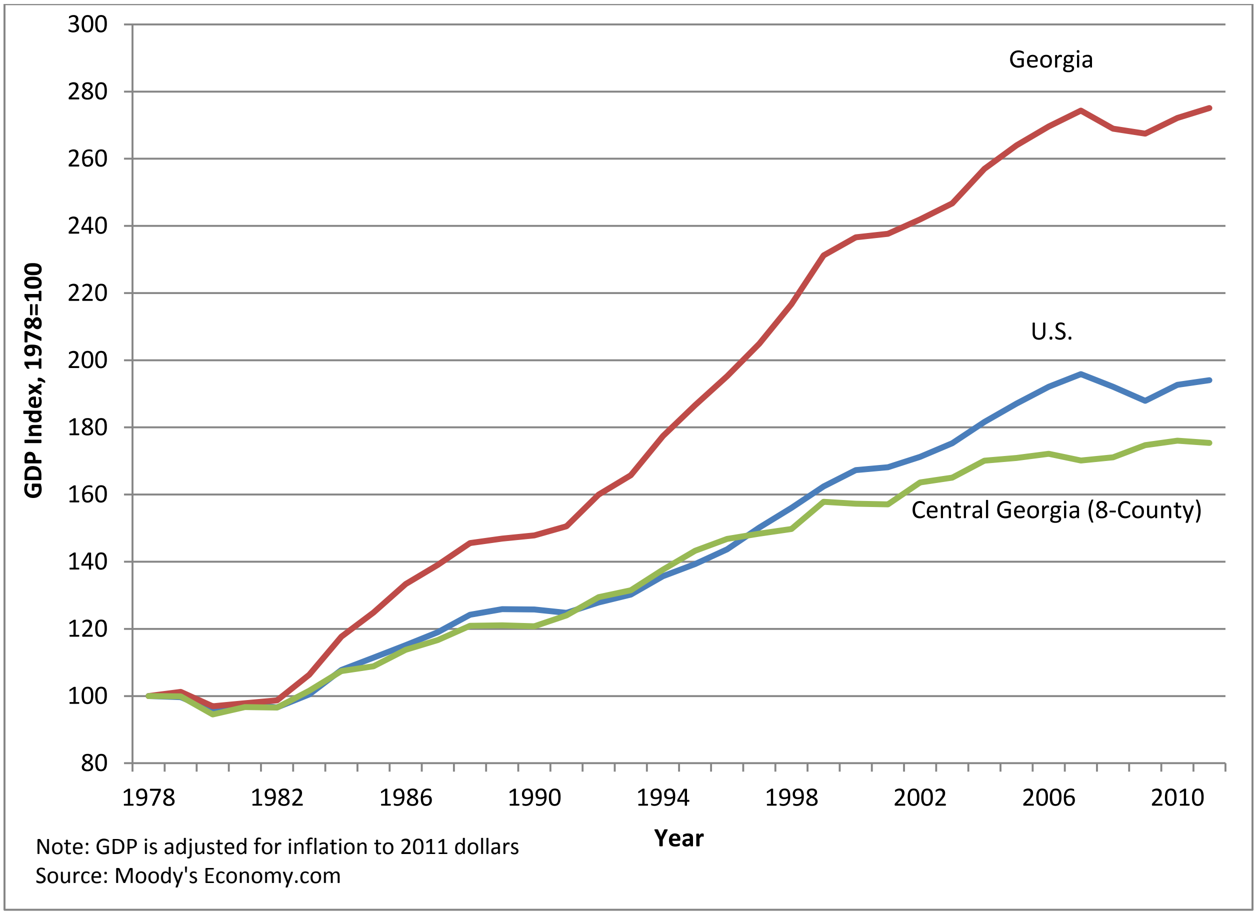
- The next largest sector, at half the size of *Public Administration, is Healthcare and Social Assistance* employing 23,316 employees and accounting for 12.5% of total employment (Table 7).

- Nine sectors in the Central Georgia region suffered from double-digit rates of decline from 2001 to 2011, compared to six sectors in the state of Georgia and only four in the United States. For the Central Georgia region, these declines were partly due to goods-producing sectors, with offsetting gains in largely service-oriented sectors. Not all service-oriented sectors have grown in the Central Georgia region; notably, the *Information* sector's employment has declined substantially (-41.3%).

- The Central Georgia region experienced marginal employment movement (0.40%) over the last 10 years from 2001 to 2011, similar to the United States (-0.3%). However, the Central Georgia region performed better than the state as a whole; the state of Georgia's employment contracted by 2.2%.

Trends in Gross Product

Figure 2. Gross Product, 1978-2011



- After the recession of the early 1980s, the gross product of Georgia grew at a far greater rate than that of the Central Georgia region and the United States (Figure 2).
- The Central Georgia region followed a similar trend of the United States in gross product growth until the late 1990s, when growth in the Central Georgia region began to slow relative to the United States.
- The gross product of the Central Georgia region did not suffer losses as deep as those experienced by Georgia and the United States from 2006 to 2010.

Table 8. Gross Product Change by Major Industry Sector, 2001-2011

	Central Georgia		Georgia	U.S.
Industry Sector	2011 Gross Product ($Mil)	Percentage Change, 2001-2011		
Public Administration	$4,632.5	30.5%	34.3%	22.8%
Manufacturing	$1,560.5	-26.6%	-9.9%	7.6%
Health Care and Social Assistance	$1,531.9	34.8%	53.9%	41.5%
Retail Trade	$1,115.7	9.7%	5.1%	2.6%
Finance and Insurance	$1,072.7	45.2%	39.1%	17.9%
Real Estate and Rental and Leasing	$1,016.6	-17.7%	7.3%	4.8%
Professional, Scientific, and Technical Services	$731.1	66.6%	40.0%	31.5%
Wholesale Trade	$468.6	13.6%	6.4%	8.5%
Construction	$441.0	-16.7%	-20.5%	-16.5%
Accommodation and Food Services	$430.7	17.3%	21.5%	17.3%
Transportation and Warehousing	$381.8	17.9%	20.3%	9.0%
Administrative and Support and Waste Management and Remediation Services	$330.8	24.7%	32.9%	18.7%
Other Services (except Public Administration)	$308.9	12.3%	21.4%	9.9%
Information	$300.0	-13.4%	17.4%	15.6%
Utilities	$294.4	16.4%	17.0%	11.2%
Educational Services	$205.6	1.7%	60.9%	50.3%
Agriculture, Forestry, Fishing and Hunting	$182.2	-14.1%	-1.8%	42.0%
Management of Companies and Enterprises	$181.7	64.8%	14.1%	27.4%
Arts, Entertainment, and Recreation	$42.5	-20.9%	13.8%	19.6%
Mining, Quarrying, and Oil and Gas Extraction	$26.0	-63.0%	-66.8%	89.8%
TOTAL	**$15,255.2**	**11.7%**	**15.8%**	**15.4%**

Source: Moody's Economy.com

Note: Other Services includes Private Households

- *Public Administration* was the largest sector contributing to gross product in 2011 in the Central Georgia region ($4.63 billion), accounting for 30.4% of total gross product (Table 8). That same sector has grown by 30.5% over the past decade. Federal government activity accounts for the majority of that sector and its growth, with the military[35] displaying the greatest rate of growth over the decade.

- The second largest contributor to gross product in 2011 was *Manufacturing* ($1.56 billion). The *Manufacturing* sector accounted for 10.2% of the Central Georgia region gross product in 2011, but the output in this sector has decreased by 26.6% since 2001.

- *Healthcare and Social Assistance* ($1.53 billion) was the third largest sector and it grew by more than a third (34.8%) between 2001 and 2011.

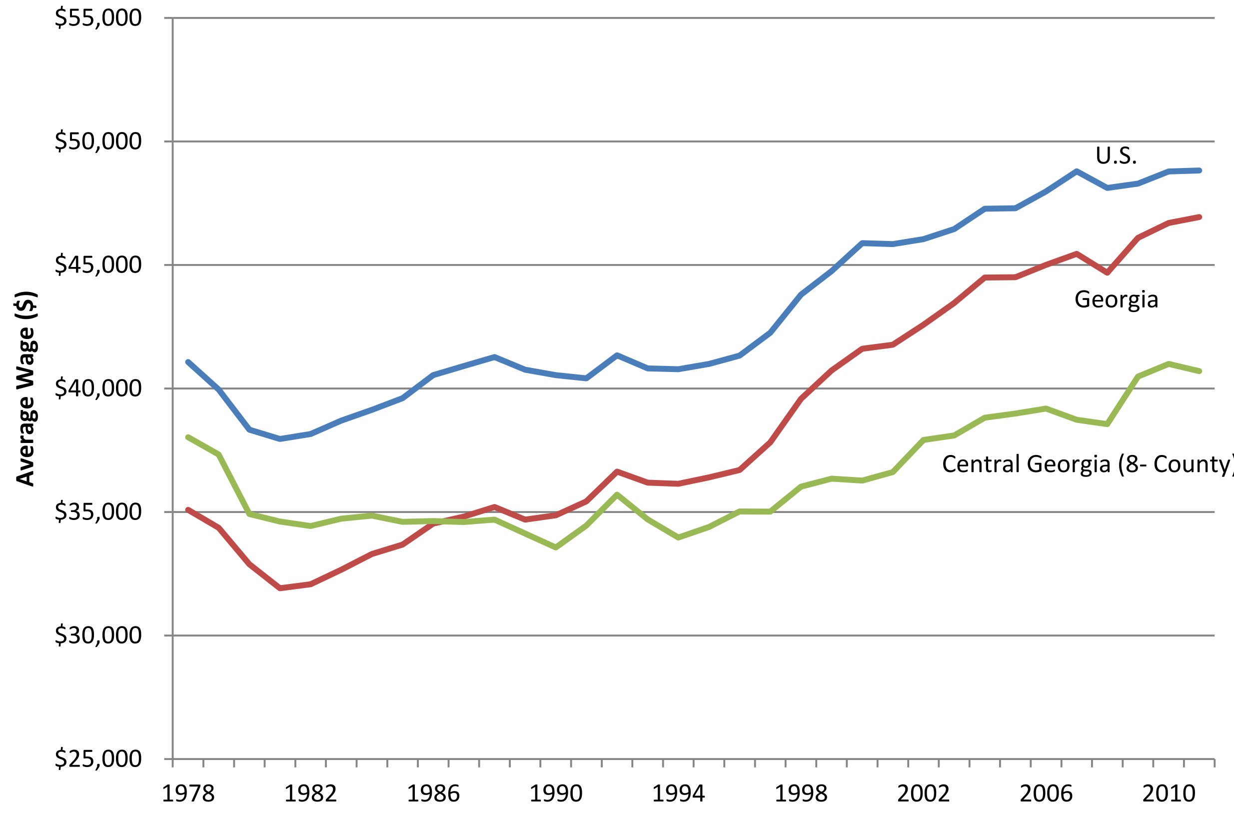
- Gross product grew in 13 of the 20 major industry sectors in the Central Georgia region from 2001 to 2011, compared to 16 in the state of Georgia and 19 (all but *Construction*) in the United States.

- The Central Georgia region and the United states lagged behind the growth rate of the state of Georgia, with the Central Georgia region only growing by 11.7% from 2001 to 2011, the United States by 15.4%, and Georgia by 15.8%.

[35] Fort Robins Air Force Base is located within the Central Georgia region

Trends in Average Wage

Figure 3. Average Wage, 1978-2011



Note: Average Wage is adjusted for inflation to 2011 dollars
Source: Moody's Economy.com

- Since 1987, the gap between the Central Georgia region and the state of Georgia has grown significantly. At the same time, the gap between the state of Georgia and the United States has narrowed, most noticeably from 1996 to 2006 (Figure 3).
- The average wage in the Central Georgia region has been lower than in the state of Georgia and the United States. By 2011, the average wage in the United States was $48,824 and the state of Georgia had an average wage of $46,941, while the Central Georgia region had a lower average wage than both regions ($40,701).
- Both the state of Georgia and the Central Georgia region lagged behind in wage growth in comparison to the United States. The average wage in the Central Georgia region grew by 11.2% from 2001 to 2011, the state Georgia by 12.4%, and the United States by 6.5%.
- All three regions have shown growth in average wage since the 2008 recession, with the Central Georgia region registering the largest growth. The Central Georgia region average wage has grown by 5.6%, the state of Georgia by 5.1%, and the United States by 1.5%.

Table 9. Average Wage Change by Major Industry Sector, 2001-2011

	Central Georgia		Georgia	U.S.
Industry Sector	2011 Average Wage ($)	Percentage Change, 2001-2011		
Mining, Quarrying, and Oil and Gas Extraction	$63,073	14.8%	-6.1%	25.6%
Transportation and Warehousing	$61,804	35.0%	4.8%	1.1%
Professional, Scientific, and Technical Services	$61,032	46.6%	12.5%	10.4%
Finance and Insurance	$52,803	11.7%	21.7%	10.8%
Wholesale Trade	$52,318	3.4%	10.9%	9.3%
Public Administration	$49,556	14.4%	15.2%	8.9%
Management of Companies and Enterprises	$47,043	21.3%	22.1%	20.1%
Manufacturing	$46,783	6.8%	21.7%	9.6%
Utilities	$46,631	5.7%	0.8%	7.1%
Health Care and Social Assistance	$44,141	0.7%	8.3%	8.2%
Educational Services	$42,849	-19.8%	15.3%	8.8%
Construction	$41,805	0.1%	1.8%	6.3%
Information	$35,949	1.1%	18.2%	7.8%
Other Services (except Public Administration)	$34,497	48.0%	32.3%	6.0%
Real Estate and Rental and Leasing	$32,574	-2.3%	12.9%	7.3%
Administrative and Support and Waste Management and Remediation Services	$26,839	20.4%	20.1%	6.2%
Retail Trade	$23,486	-2.6%	1.8%	-3.8%
Arts, Entertainment, and Recreation	$20,722	18.6%	3.6%	10.2%
Agriculture, Forestry, Fishing and Hunting	$18,931	17.1%	62.5%	25.5%
Accommodation and Food Services	$14,566	5.2%	9.2%	3.6%
TOTAL	**$40,701**	**11.2%**	**12.4%**	**6.5%**

Source: Moody's Economy.com

Note Other Services includes Private Households

- The sectors with the highest average wages in the Central Georgia region were *Mining, Quarrying, and Oil and Gas Extraction* ($63,073), *Transportation and Warehousing* ($61,804), and *Professional, Scientific, and Technical Services* ($61,032). Average wage grew in all three sectors (Table 9).

- The sectors with the highest rate of growth for average wages between 2001 and 2011 were *Professional, Scientific, and Technical Services* (46.6%), *Other Services* (48.0%), and *Transportation and Warehousing* (35.0%).

- In the Central Georgia region, average wages grew in all industry sectors between 2001 and 2011 except *Educational Services* (-19.8%), *Retail Trade* (-2.6%), and *Real Estate and Rental and Leasing* (-2.3%).

- Total average wages grew in the Central Georgia region by 11.2%, in the state of Georgia by 12.4%, and in the United States by 6.5%.

- Despite greater gains in gross product than gains in employment (both positive double-digit gains), the *Healthcare and Social Assistance* sector saw very small increases in average wage from 2001 to 2011.

High Performance Industries

To identify which industries in the Central Georgia region are outperforming others regionally and nationally, we analyzed data at a finer level of industry detail (4-digit). This analysis explores 285 industry sectors in greater depth.

"Winning" Industries – Tier I

To examine these high performance industries we selected industries that met all of the following criteria:

1. **Percent Employment Change (2001-2011) > 1%** – to show employment growth
2. **Average Wage (2011) > $46,806.15**[36] – to find industries that have livable wages
3. **Percent Change in Gross Product (2001-2011) > 0.1%** – to show positive growth in output
4. **Gross Product Location Quotient**[37] **(2011) > 1.2**[38] - to find industries that are more concentrated in the Central Georgia region relative to the United States.
5. **2011 Employment > 500** – to find large employers

- Table 10 shows the five industries that met the above criteria for "winning" industries in the Central Georgia region, all of which have employment greater than 500 employees in 2011 suggesting that they are employment drivers in the region.

- These five Tier I industries have a gross product LQ greater than 1.2 displaying that these industries are specialists in their field in the nation, have livable wages, and experienced growth in both employment and output. These industries, combined, employed 37,576 individuals in 2011.

- One Tier I industry is in *Public Administration* (Federal Government), one is in *Finance and Insurance* (Insurance Carriers), one is in *Professional, Scientific, and Technical Services* (Architectural, Engineering, and Related Services), and two are in *Health Care and Social Assistance* (Offices of Physicians; General Medical and Surgical Hospitals).

- Of the Tier I industries, the largest employer in 2011 was Federal Government with 18,186 employees, which represented 48.4% of Tier I employment in 2011. Federal Government employment is due to civilian employees working at the Robins Air Force Base.

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[36] This calculation was taken as 15% above the average wage in Table 9.

[37] Location Quotient measures the specialization of an industry in a region by comparing it to data in a larger region. For our analysis: $LQ = \frac{\frac{g_i}{g}}{\frac{G_i}{G}}$ where g_i = The Central Georgia region Gross Product in industry i; g = Total Gross Product in The Central Georgia region; G_i= US Gross Product in industry i; G = Total US Gross Product

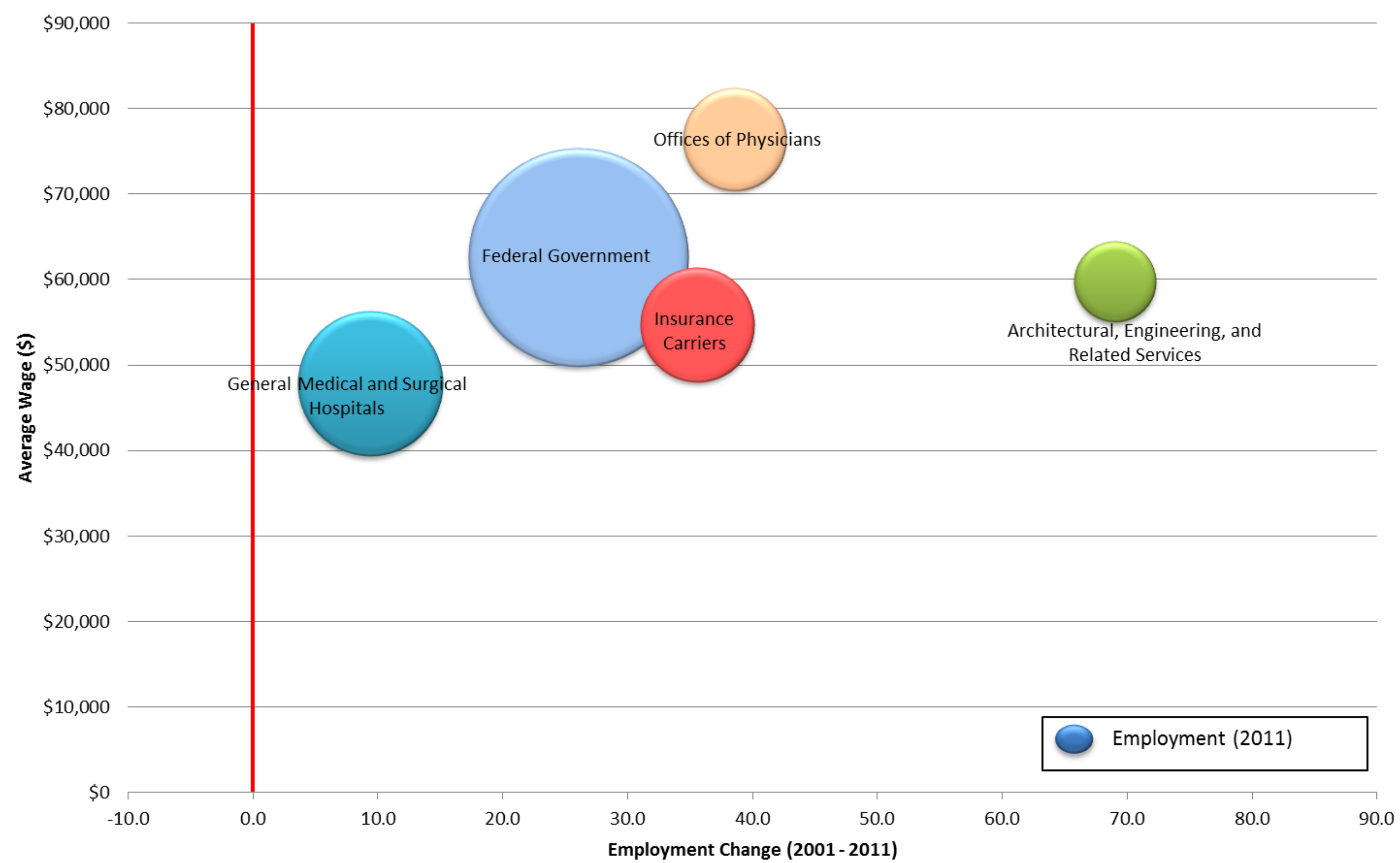
[38] A location quotient > 1.2 indicates specialization in an industry.

Table 10. Industry Winners (Tier I) in the Central Georgia region in terms of Employment, Gross Product, and Average Wage

		Employment					Gross Product					Average Wage				
NAICS	NAICS Description	2001	2011	Difference (2001-2011)	% Change (2001-2011)	LQ 2011	2001 ($Mil)	2011 ($Mil)	Difference (2001-2011)	% Change (2001-2011)	LQ 2011	2001 ($)	2011 ($)	Difference (2001-2011)	% Change (2001-2011)	LQ 2011
GVF	Federal Government	14,426	18,186	3,760	26.1%	4.63	$1,262.9	$1,909.0	$646.1	51.2%	5.36	$52,074	$62,687	$10,613	20.4%	1.01
5241	Insurance Carriers	3,657	4,958	1,301	35.6%	2.93	$258.2	$435.7	$177.4	68.7%	1.74	$44,745	$54,742	$9,997	22.3%	0.81
5413	Architectural, Engineering, and Related Services	1,485	2,510	1,025	69.0%	1.42	$105.3	$270.7	$165.3	157.0%	1.38	$43,395	$59,780	$16,385	37.8%	0.89
6211	Offices of Physicians	2,873	3,981	1,108	38.6%	1.24	$390.7	$493.8	$103.2	26.4%	1.55	$88,220	$76,486	-$11,733	-13.3%	1.14
6221	General Medical and Surgical Hospitals	7,260	7,941	681	9.4%	1.29	$405.2	$516.1	$110.9	27.4%	1.51	$42,884	$47,835	$4,951	11.5%	1.06

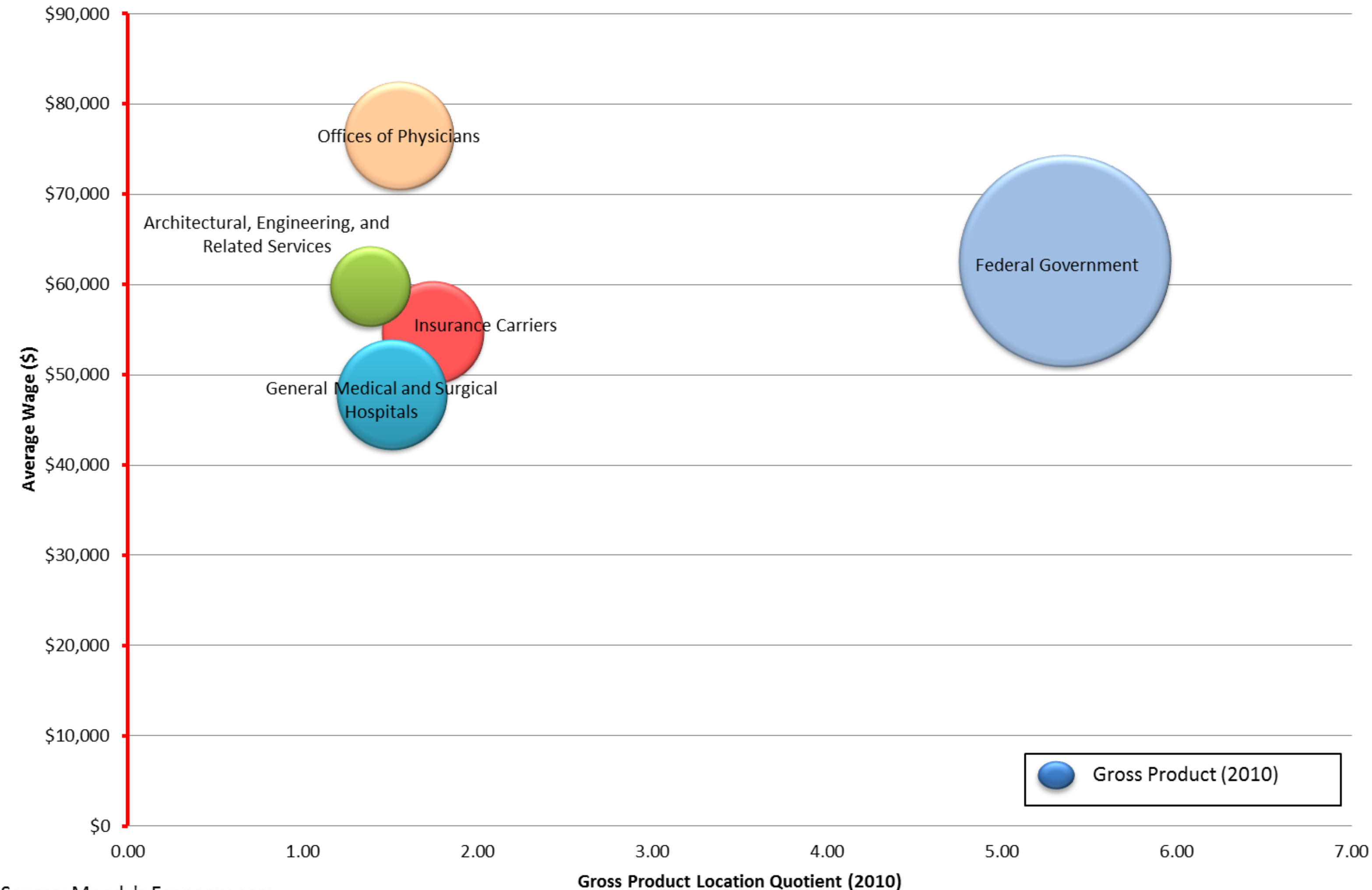
Note: Gross Product and Average Wages are adjusted for inflation to 2011 dollars
Source: Moody's Economy.com

Figure 4. Industry Winners (Tier I): Average Wage by Employment Change, and Employment Level



Source: Moody's Economy.com

Figure 5. Industry Winners (Tier I): Average Wage by Gross Product Location Quotient, and Gross Product



Source: Moody's Economy.com

Average Wage by Employment Change and Employment Level (Tier I)

- Three industries (Insurance Carriers; Architectural, Engineering, and Related Services; and Offices of Physicians) of Tier I winning industries had employment growth greater than 30% from 2001 to 2011 and had an average wage greater than $54,000 in 2011 (Figure 4). Of these three industries, their 2011 employment ranges from 2,510 to 4,958.

- In Tier I, industries with the largest employment in 2011 include Federal Government (18,186) and General Medical and Surgical Hospitals (7,941).

Average Wage by Location Quotient and Total Gross Product (Tier I)

- One Tier I industry that stands out when examining average wage, gross product location quotient, and total gross product is Federal Government. This industry has a gross product location quotient of over 5.3, indicating that this industry is a specialist in its field in the nation and has high wages and large employment (Figure 5).

- In addition, four industries have a gross product location quotient greater than 1.5 indicating these industries are specialists in their field in the nation and have livable wages: Federal Government; Insurance Carriers; Offices of Physicians; and General Medical and Surgical Hospitals. In 2011, the Federal Government's output was $1.9 billion, while Insurance Carriers' output was $435.7 million, Offices of Physicians' output was $493.8 million, and General Medical and Surgical Hospitals' output was $516.1 million.

“Winning” Industries – Tier II

The main reason for the small number of Tier I “winning” industries was because of the high wages characterized by Tier I winning industries. Since there were only five Tier I “winning” industries in the Central Georgia region, we looked to find industries that provide a lower, but still livable wage – for which we used the average wage. These industries we called Tier II “winning” industries.

For Tier II “winning” industries, we selected industries that met the below criteria:

1. **Average Wage (2011) > $40,701**[39] – to find industries that have livable wages
2. **Percent Change in Gross Product (2001-2011) > 0.1%** – to show positive growth in output
3. **Gross Product Location Quotient (2011) > 1.2** - to find industries that are more concentrated in the Central Georgia region relative to the United States.
4. **2011 Employment > 250** – to find fairly large employment industries

- Table 11 lists the six industries that are Tier II “winning” industries in the Central Georgia region. Of those six, one is in *Public Administration* (Military), one is in *Utilities* (Electric Power Generation, Transmission and Distribution), one is in *Manufacturing* (Animal Slaughtering and Processing), two are in *Transportation and Warehousing* (Rail Transportation, and Support Activities for Air Transportation), and one in *Repair and Maintenance* (Electronic and Precision Equipment Repair and Maintenance).

- The two highest wage Tier II industries are Rail Transportation ($108,704) and Military ($95,315). Rail Transportation saw miniscule growth (0.6%) and Military (-12.2%) lost employment over the last 10 years; this meant these industries did not meet the criteria of growing employment for Tier I winning industries.

- While all Tier II industries had an increase in gross product from 2001 to 2011, three industries had employment loss over this period (Military; Electric Power Generation, Transmission and Distribution; and Electronic and Precision Equipment Repair and Maintenance). This indicates that even though employers were shedding workers, their output increased, demonstrating productivity increases in the three industries.

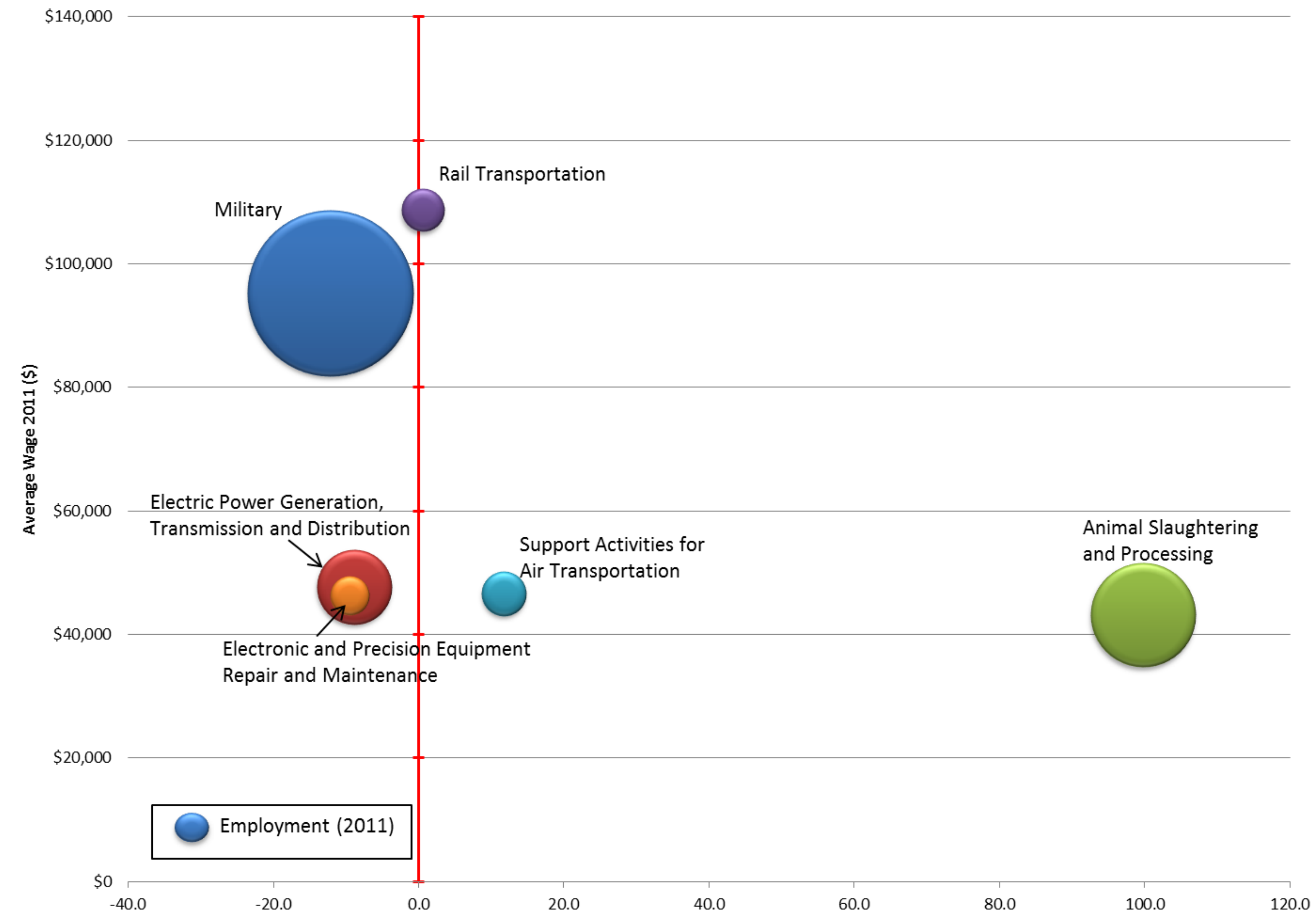
[39] This calculation was taken as the average wage in Table 9. Since the Central Georgia region has relatively low cost of living index (89.58) for 2010, compared to the U.S. average (100), the wage was not inflated by 15% as it was for the Tier I industries.

Table 11. Industry Winners (Tier II) in the Central Georgia region for Employment, Gross Product, and Average Wage

		Employment					Gross Product					Average wage				
NAICS	NAICS Description	2001	2011	Difference (2001-2011)	% Change (2001-2011)	LQ 2011	2001 ($Mil)	2011 ($Mil)	Difference (2001-2011)	% Change (2001-2011)	LQ 2011	2001 ($)	2011 ($)	Difference (2001-2011)	% Change (2001-2011)	LQ 2011
MIL	Military	6,332	5,560	-772	-12.2%	1.93	$691.4	$1,050.2	$358.8	51.9%	5.10	$60,971	$95,315	$34,344	56.3%	2.37
2211	Electric Power Generation, Transmission and Distribution	1,247	1,136	-111	-8.9%	2.06	$232.1	$277.7	$45.6	19.7%	1.46	$43,630	$47,740	$4,110	9.4%	0.62
3116	Animal Slaughtering and Processing	1,110	2,217	1,107	99.7%	3.52	$260.7	$295.0	$34.2	13.1%	5.51	$60,963	$43,214	-$17,749	-29.1%	1.45
4821	Rail Transportation	363	365	2	0.6%	1.25	$56.5	$74.3	$17.8	31.6%	2.14	$86,010	$108,704	$22,693	26.4%	1.75
4881	Support Activities for Air Transportation	349	390	41	11.7%	1.72	$25.7	$32.5	$6.9	26.7%	2.35	$42,723	$46,614	$3,891	9.1%	1.24
8112	Electronic and Precision Equipment Repair and Maintenance	335	303	-32	-9.6%	1.69	$14.1	$23.6	$9.5	67.0%	2.42	$25,940	$46,343	$20,404	78.7%	1.35

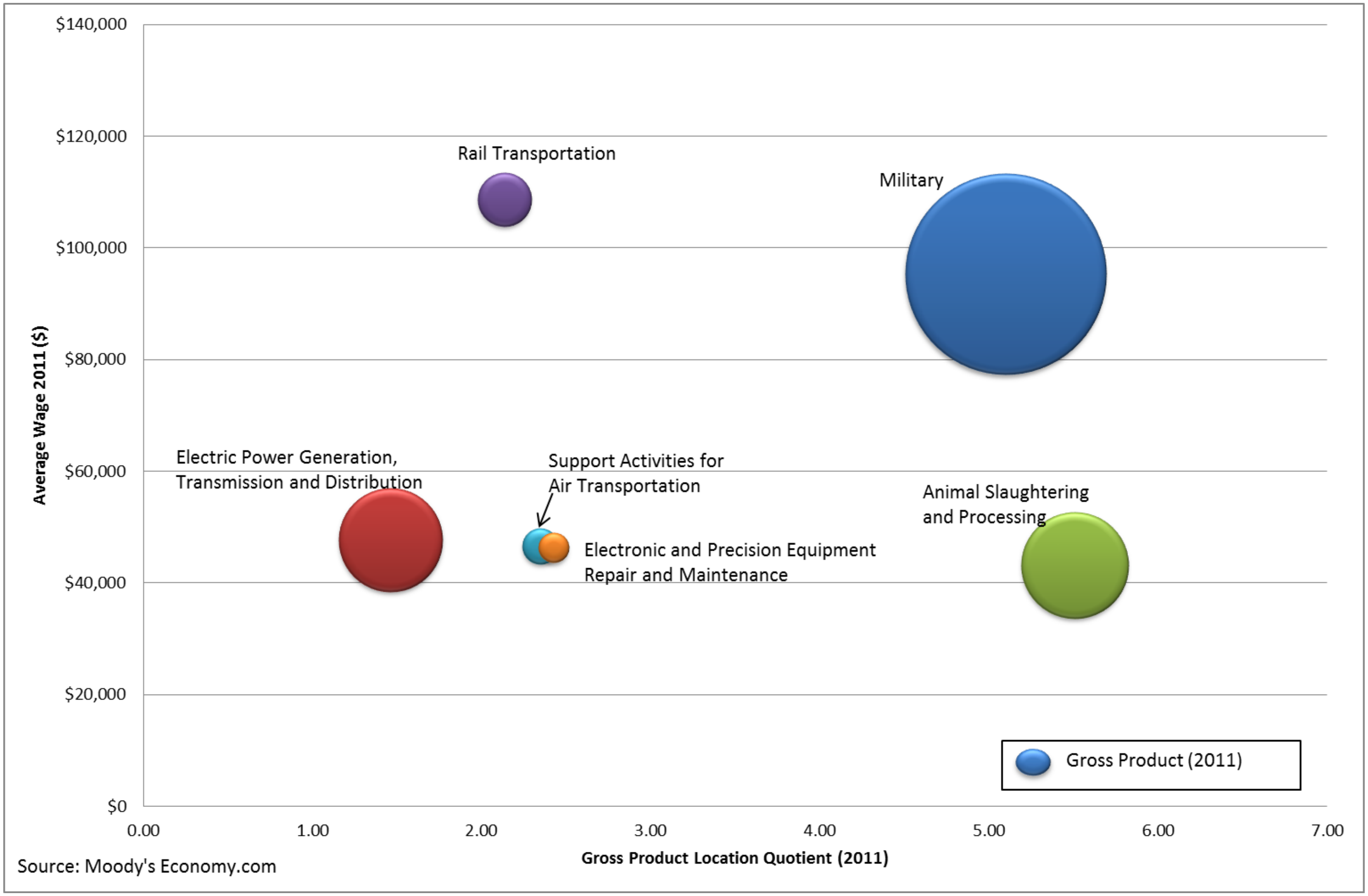
Note: Gross Product and Average Wages are adjusted for inflation to 2011 dollars
Source: Moody's Economy.com

Figure 6. Industry Winners (Tier II): Average Wage by Employment Change, and Employment Level



Source: Moody's Economy.com

Figure 7. Industry Winners (Tier II): Average Wage by Gross Product Location Quotient, and Gross Product



Average Wage by Employment Change and Employment Level (Tier II)

- Two industries (Military; Rail Transportation) of Tier II winning industries had an average wage greater than $90,000 in 2011 (Figure 6).

- In Tier II, industries with the largest employment in 2011 were Military (5,560) and Animal Slaughtering and Processing (2,217).

Average Wage by Location Quotient and Total Gross Product (Tier II)

- One Tier II industry that stands out when examining average wage, gross product location quotient (LQ), and total gross product is Military. This industry has a gross product location quotient of over five, indicating that this region specializes in this industry and has high wages and large employment (Figure 7).

- The two industries--Military; Animal Slaughtering and Processing--have a gross product location quotient greater than five, indicating these industries are specialists in their field and have livable wages. However, these two industries are of different sizes. Military's output in 2011 was $1 billion, while Animal Slaughtering and Processing's output was much smaller at $295 million.

Employment Location Quotient

Table 12. Industry Sectors in which Employment Location Quotient was Greater than 2.5

		Employment				
NAICS	NAICS Description	2001	2011	Difference (2001-2011)	% Change (2001-2011)	LQ 2011
3131	Fiber, Yarn, and Thread Mills	1,849	747	-1,102	-59.6%	18.23
3271	Clay Product and Refractory Manufacturing	532	370	-162	-30.5%	6.71
GVF	Federal Government	14,426	18,186	3,760	26.1%	4.63
3122	Tobacco Manufacturing	402	92	-310	-77.1%	3.57
3116	Animal Slaughtering and Processing	1,110	2,217	1,107	99.7%	3.52
5241	Insurance Carriers	3,657	4,958	1,301	35.6%	2.93
3221	Pulp, Paper, and Paperboard Mills	550	427	-123	-22.4%	2.78
3279	Other Nonmetallic Mineral Product Manufacturing	302	240	-62	-20.5%	2.73
3141	Textile Furnishings Mills	383	220	-163	-42.6%	2.70
4511	Sporting Goods, Hobby, and Musical Instrument Stores	472	1,720	1,248	264.4%	2.64

Source: Moody's Economy.com

- Excluding all other criteria, the ten industries above represent the industries with an employment location quotient (LQ) greater than 2.5, sorted by descending LQ (Table 12).
- Seven industries in Table 12 are within the manufacturing industry (NAICS 31-33).
- The highest LQ belongs to Fiber, Yarn, and Thread Mills with an LQ of 18.23 indicating it is an extreme specialist in its field in comparison to the nation, but this industry shed 1,102 employees, almost 60% of its workforce from 2001 to 2011.
- Federal Government and Insurance Carriers appear on the Tier I winning industry lists (Table 10) and Animal Slaughtering and Processing appears on the Tier II winning industry lists (Table 11).

Gross Product Location Quotient

Table 13. Industry Sectors in which Gross Product Location Quotient was Greater than 2.5

		Gross Product				
NAICS	NAICS Description	2001 ($Mil)	2011 ($Mil)	Difference (2001-2011)	% Change (2001-2011)	LQ 2011
3131	Fiber, Yarn, and Thread Mills	$59.6	$43.0	-$16.5	-27.7%	21.63
3271	Clay Product and Refractory Manufacturing	$42.6	$42.3	-$0.4	-0.9%	10.59
3221	Pulp, Paper, and Paperboard Mills	$154.6	$130.2	-$24.4	-15.8%	5.64
3116	Animal Slaughtering and Processing	$260.7	$295.0	$34.2	13.1%	5.51
GVF	Federal Government	$1,262.9	$1,909.0	$646.1	51.2%	5.36
1133	Logging	$57.8	$56.7	-$1.1	-1.9%	5.31
MIL	Military	$691.4	$1,050.2	$358.8	51.9%	5.10
3279	Other Nonmetallic Mineral Product Manufacturing	$25.5	$30.9	$5.4	21.2%	4.43
3222	Converted Paper Product Manufacturing	$286.0	$162.2	-$123.8	-43.3%	4.25
3274	Lime and Gypsum Product Manufacturing	$7.1	$6.8	-$0.4	-5.1%	4.25
3132	Fabric Mills	$17.5	$15.1	-$2.4	-13.7%	3.35
3273	Cement and Concrete Product Manufacturing	$58.8	$54.6	-$4.2	-7.2%	3.33
3141	Textile Furnishings Mills	$14.9	$12.7	-$2.2	-14.8%	2.96
4511	Sporting Goods, Hobby, and Musical Instrument Stores	$15.7	$58.8	$43.1	274.8%	2.77
3211	Sawmills and Wood Preservation	$17.0	$17.3	$0.3	1.9%	2.72

Note: Gross Product is adjusted for inflation to 2011 dollars
Source: Moody's Economy.com

- Excluding all other criteria, the 15 industries above represent the industries with a gross product LQ greater than 2.5, sorted by descending LQ (Table 13).
- Fiber, Yarn, and Thread Mills has an extremely high gross product LQ of 21.63, demonstrating that the Central Georgia region is extremely specialized in this industry when compared to the United States.
- Six industries listed in Table 13 experienced an increase in gross product from 2001 to 2011: Federal Government; Military; Animal Slaughtering and Processing; Sawmills and Wood Preservation; Other Nonmetallic Mineral Product Manufacturing; and Sporting Goods, Hobby, and Musical Instrument Stores.
- Federal Government appears on the Tier I winning industry lists (Table 10) and Military; Animal Slaughtering and Processing appear on the Tier II winning industry lists (Table 11).

UNEMPLOYMENT

Table 14. Unemployment Rates for the Central Georgia Region, State of Georgia, and United States, 2011

	Total Labor Force	Unemployed	Unemployment Rate
Baldwin County	18,018	2,474	13.7%
Bibb County	73,237	7,686	10.5%
Crawford	6,108	604	9.9%
Houston County	70,292	5,468	7.8%
Jones County	14,496	1,287	8.9%
Monroe County	13,959	1,232	8.8%
Peach County	12,223	1,430	11.7%
Twiggs	4,119	514	12.5%
Central Georgia Region (8-County)	***212,452***	***20,695***	***9.7%***
State of Georgia	4,725,104	462,929	9.8%
United States [A]	139,869,000	13,747,000	8.9%

Source: Unless specified source is the U.S. Bureau of Labor Statistics Local Area Unemployment Statistics
[A] U.S. Bureau of Labor Statistics Current Population Survey

- In 2011, the unemployment rate for the Central Georgia region (9.7%) was higher than the national unemployment rate (8.9%), and similar to the state of Georgia (9.8%) (Table 14).
- Baldwin County had the highest unemployment rate in the Central Georgia region (13.7%) while Houston County had the lowest rate (7.8%).
- Four counties – Baldwin (13.7%), Bibb (10.5%), Peach (11.7%), and Twiggs (12.5%) counties had unemployment rates significantly higher than the state (9.8%) and nation (8.9%).

Employment Dynamics

Table 15. Local Employment Dynamics, Average Q3 2010 – Q3 2011

Demographic Category	Area	Total Employment	Net Job Flows	Job Creation	New Hires	Separations	Turnover	Average Monthly Earnings	Average New Hire Earnings
All Races	Baldwin	13,619	66	543	1,639	1,820	8.2%	$2,634	$1,545
	Bibb	78,975	672	3,579	10,660	11,844	9.1%	$3,283	$2,037
	Crawford	1,431	-11	112	186	273	8.1%	$2,718	$2,073
	Houston	41,264	-105	1,914	5,617	6,743	9.0%	$3,103	$2,013
	Jones	3,635	12	161	421	485	7.8%	$2,745	$1,611
	Monroe	8,090	-205	320	955	1,384	10.2%	$2,833	$2,010
	Peach	7,914	63	374	1,007	1,120	7.9%	$3,233	$2,047
	Twiggs	1,130	22	84	146	144	6.8%	$3,194	$2,241
	Central Georgia (8-County)	***156,058***	***514***	***7,087***	***20,631***	***23,813***	-	-	-
	Georgia	3,643,403	16,885	181,330	524,279	600,912	8.9%	$3,851	$2,446
African American	Baldwin	4,974	30	220	584	631	7.9%	$1,982	$1,283
	Bibb	30,547	275	1,552	4,720	5,174	9.8%	$2,321	$1,535
	Crawford	498	-1	41	59	83	7.5%	$2,202	$1,739
	Houston	13,327	2	676	1,969	2,261	9.2%	$2,403	$1,675
	Jones	892	N/A	51	103	121	8.2%	$2,054	$1,333
	Monroe	2,828	-81	112	301	447	9.9%	$2,278	$1,715
	Peach	3,586	55	196	468	485	7.5%	$2,795	$1,828
	Twiggs	420	16	51	72	63	8.2%	$2,464	$2,115
	Central Georgia (8-County)	***57,072***	***296***	***2,899***	***8,276***	***9,265***	-	-	-
	Georgia	1,086,117	7,168	64,307	182,997	204,650	9.8%	$2,744	$1,893
Hispanic	Baldwin	345	3	29	56	59	9.2%	$2,507	$1,423
	Bibb	2,143	45	245	453	488	12.6%	$2,781	$1,980
	Crawford	86	N/A	20	20	30	10.2%	$2,474	$2,043
	Houston	1,783	-27	150	314	386	11.2%	$2,408	$1,793
	Jones	97	N/A	9	12	15	10.5%	$2,299	$1,511
	Monroe	342	-2	41	82	105	15.8%	$2,749	$2,749
	Peach	380	5	32	53	64	8.6%	$2,276	$1,852
	Twiggs	17	N/A	1	4	5	7.6%	$3,784	$1,647
	Central Georgia (8-County)	***5,193***	***24***	***527***	***994***	***1,152***	-	-	-
	Georgia	222,265	580	18,666	41,606	47,598	10.9%	$2,859	$2,097

Note: The LED is comprised of many sources such as censuses, surveys, and other administrative record.
Some definitions: Net job flows = job creations - job destructions; Separations = separations are individuals who separate during the current quarter who were full quarter employees in the previous quarter; Turnover = employment churning; for more information on LED definitions see http://lehd.did.census.gov/led/library/techpapers/QWI_definitions.pdf
Source: U.S. Census Bureau, Local Employment Dynamics (LED)

- Employment dynamics of a region measures the flow and movement of jobs that are not captured by the net gain/loss of overall employment and unemployment data.

- Amongst all races in the Central Georgia region, the net job flow over the period was positive (514) indicating that the number of jobs created in the region was greater than the number of jobs lost.

- Breakout by racial and ethnic categories demonstrates that African-American workers within the Central Georgia region account for 37% of the overall workforce and posted a positive net job flow over the year (296). Meanwhile, Hispanic workers, which account for 3% of overall employment, experienced a nominal net job flow increase (24).

- The turnover rates for Hispanics are higher than turnover rates for all races in Georgia and in each of the eight counties in the Central Georgia region.

Industry Occupations

Table 16. Occupational Shares and Wages, 2011

Occupations	Macon MSA			Warner Robins Micropolitan Area			Georgia		United States	
	Emp. 2011	Emp. Share	Median Wage	Emp. 2011	Emp. Share	Median Wage	Emp. Share	Median Wage	Emp. Share	Median Wage
Office and Administrative Support	18,220	19.9%	$27,780	7,180	12.6%	$29,650	17.3%	$29,840	16.7%	$31,250
Sales and Related	11,670	12.7%	$19,710	5,260	9.2%	$19,430	11.3%	$23,180	10.6%	$24,840
Healthcare Practitioners and Technical	8,290	9.0%	$51,640	2,290	4.0%	$49,850	5.3%	$54,390	5.9%	$59,570
Food Preparation and Serving Related	7,390	8.1%	$17,860	5,310	9.3%	$17,910	8.7%	$18,330	8.7%	$18,900
Education, Training, and Library	6,350	6.9%	$41,170	4,210	7.4%	$42,240	7.0%	$43,080	6.6%	$46,060
Transportation and Material Moving	5,220	5.7%	$23,130	2,570	4.5%	$27,170	7.9%	$27,370	6.7%	$28,760
Production	4,130	4.5%	$33,130	4,810	8.4%	$32,490	6.9%	$27,700	6.5%	$30,670
Installation, Maintenance, and Repair	3,850	4.2%	$35,690	4,640	8.2%	$50,200	4.4%	$38,650	3.9%	$40,600
Management	3,830	4.2%	$80,530	1,740	3.1%	$90,000	5.4%	$90,930	4.8%	$92,880
Business and Financial Operations	3,380	3.7%	$49,700	6,050	10.6%	$68,870	5.0%	$61,900	4.8%	$61,700
Construction and Extraction	3,170	3.5%	$29,710	2,950	5.2%	$48,290	3.2%	$33,870	3.9%	$39,820
Building and Grounds Cleaning and Maintenance	3,020	3.3%	$18,920	1,300	2.3%	$19,240	2.9%	$20,690	3.3%	$22,620
Protective Service	2,940	3.2%	$28,980	800	1.4%	$31,300	2.7%	$30,960	2.5%	$36,740
Healthcare Support	2,760	3.0%	$22,190	1,330	2.3%	$22,090	2.3%	$23,290	3.1%	$25,140
Personal Care and Service	2,020	2.2%	$18,050	1,010	1.8%	$18,340	2.1%	$18,790	2.8%	$20,730
Community and Social Services	1,660	1.8%	$33,610	420	0.8%	$31,670	1.1%	$36,150	1.5%	$39,880
Computer and Mathematical	1,180	1.3%	$58,040	1,410	2.5%	$69,940	2.7%	$71,360	2.7%	$75,080
Architecture and Engineering	790	0.9%	$62,190	2,960	5.2%	$75,670	1.4%	$68,980	1.8%	$72,070
Legal	690	0.8%	$49,110	140	0.2%	$53,780	0.7%	$67,720	0.8%	$75,470
Arts, Design, Entertainment, Sports, and Media	590	0.6%	$28,700	310	0.5%	$53,780	1.0%	$41,360	1.3%	$43,640
Farming, Fishing, and Forestry	320	0.3%	$27,140	50	0.1%	$38,790	0.2%	$24,820	0.3%	$19,460
Life, Physical, and Social Science	190	0.2%	$45,760	210	0.4%	$65,050	0.5%	$55,780	0.8%	$59,330
All Occupations	**91,660**	**100.0%**	**$28,870**	**56,950**	**100.0%**	**$37,430**	**100.0%**	**$31,720**	**100.0%**	**$34,460**

Note: The Macon MSA includes Bibb, Crawford, Jones, Monroe, and Twiggs Counties
The Warner Robins Micropolitan Area is comprised of Houston County
Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

- Examining the occupational shares across geographies can show if the Central Georgia region has a similar occupational structure to that of the state of Georgia and the United States.

- Three occupational categories in the Macon MSA and five in the Warner Robins MSA had higher occupational shares (those with a difference greater than one percentage point) than the United States:
    - In the Macon MSA of the three occupational categories, the only one to have a higher median wage than the total for all occupations ($28,870) was *Healthcare Practitioners and Technical* ($51,640).
    - In the Warner Robins MSA, four of the five occupational categories had median wages higher than the total for all occupations in that MSA ($37,430): *Construction and Extraction* ($48,290)*; Installation, Maintenance, and Repair* ($50,200); *Business and Financial Operations* ($68,870); *and Architecture and Engineering* ($75,670).

- Three occupational categories in the Macon MSA and six in the Warner Robins MSA had lower occupational shares (those with a difference greater than one percentage point) than the United States:
    - In the Macon MSA of the three occupational categories, all have a higher median wage than the total for all occupations ($28,870): *Production* ($33,130); *Business and Financial Operations* ($49,700); and *Computer and Mathematical* ($58,040).
    - In the Warner Robins MSA, two of the six occupational categories, *Healthcare Practitioners and Technical* ($49,850) and *Management* ($90,000) had median wages higher than the total for all occupations in that MSA ($37,430):

Top Employers

Table 17. Top 25 Employers in the Central Georgia Region, 2011

Rank	Company	Employment
1	Medical Center of Central Georgia	4,000
2	GEICO	3,936
3	Bibb County Board of Education	3,300
4	City of Macon	1,494
5	Coliseum Health System	1,263
6	Bibb County	893
7	Mercer University	871
8	Wal-Mart Super Stores	726
9	YKK (U.S.A.)	725
10	United States Postal Service	600
11	Georgia Farm Bureau Federation	570
12	Graphic Packaging Corp	520
13	The Boeing Company	500
14	IKON Office Solutions	500
15	First Quality	486
16	Armstrong World Industries	454
17	Birch Communications	375
18	IKON Financial Solutions	350
19	AT&T	302
20	Cherokee Brick & Tile Co	300
21	The Trane Company	300
22	Timco	300
23	Pactive Corp.	212
24	Battle Lumber Company	175
25	Kamin	160

Note: Robins Air Force Base not included in Top Employers

Source: Macon Economic Development Commission, 2012; Inc. 500, www.inc.com

- Table 17 displays the Top 25 Employers in the Central Georgia region in 2011. These employers had a total employment of 23,312.

- The Top 25 Employers represent the major sources of employment for Central Georgia: healthcare, insurance, aerospace, public administration, natural resources (clay and timber) related production, and manufacturing.

- For a full listing of employers, see Appendix Table A. 4. Top Employers in the Central Georgia Region, 2011

Fast Growth Firms

Table 18. Fastest Growing Private Firms in the Central Georgia Region, by National Rank and Revenue Growth, 2010-2012

Rank	Name	City	County	Revenue ($ Mil)	Revenue Growth (2010-2012)	Year Founded	Employees
4357	ShuBee	Macon	Bibb	$4.2	26%	2000	19
4737	Birch Communications	Macon	Bibb	$173.8	13%	1996	375

Note: Rank out of 5,000; Employees are self-reported. Total may reflect employees outside of the Central Georgia region
Source: www.inc.com

- Of the 5,000 fastest growing firms in 2012, two are located within the Central Georgia region (Table 18).

- Both fast-growth firms for the region are located in the city of Macon, Bibb County.

Foreign Direct Investment

Table 19. Top Foreign Companies Located in Central Georgia, 2010

County	Company Name	Employees	Country
Baldwin	Renal Care Group, Inc.	-	Germany
Baldwin	Zschimmer & Schwartz, Inc.	15	Germany
Bibb	Boral Bricks Inc., Macon	42	Australia
Bibb	Diamond Plastics	130	Canada
Bibb	Dixon Ticonderoga Co.	17	Italy
Bibb	Down River	30	Netherlands
Bibb	EG Medical Inc	-	Denmark
Bibb	Freudenberg TexBond LP	100	Germany
Bibb	Glidden Co Inc.	6	Netherlands
Bibb	Jackson National Life-Insurance Company	--	United Kingdom
Bibb	Kemira Chemicals Inc	-	Finland
Bibb	Loomis Fargo & Co.	-	Sweden
Bibb	Nichiha USA, Inc.	17	Japan
Bibb	Rinker Materials	-	Australia
Bibb	T.K.G. International Corp.	10	Japan
Bibb	Thyssen Krupp Elevator	-	Germany
Bibb	Trane US Inc.	3	Bermuda
Bibb	Trane US Inc.	350	Bermuda
Bibb	YKK (U.S.A), Inc.	650	Japan
Houston	Bae Systems Information	6	United Kingdom
Houston	BASF Catalysts LLC	1100	Germany
Houston	Cemex Cement Inc.	126	Mexico
Houston	Lafarge Material SE	14	France
Houston	Super Discount Markets Inc.	-	Belgium
Houston	Terma North America Inc.	32	Denmark
Monroe	Hanson Aggregates	-	United Kingdom
Monroe	Trane US Inc.	50	Bermuda
Peach	3SI Security Systems	50	United Kingdom
Peach	Arriscraft International LLC	-	Austria
Peach	Blue Bird Corp.	1200	Sweden
Peach	Bossard Milwaukee	-	Switzerland
Peach	Crop Production Services Inc.	8	Canada
Peach	Glidden Co Inc.	26	Netherlands
Twiggs	Imery's Kaolin	-	France

Source: Macon Economic Development Commission, 2010

- The largest foreign firm in the Central Georgia region, in terms of employment, is the Blue Bird Corporation, a Swedish company that produces school busses. The second largest firm is BASF Catalysts, a German chemical company with mining operations in Central Georgia. The third largest foreign firm is YKK USA, a manufacturing firm from Japan (Table 19).

- Collectively, these foreign firms represent over 3,900 jobs in the Central Georgia region.

- The vast majority of these jobs are located in Bibb, Houston, and Peach counties.

Economic Inclusion (Minority- and Women-Owned Businesses)

Minority Inclusion

Table 20. Economic Inclusion as a Percentage of Business Owners and a Percentage of the Population, 2007

	WHITE/CAUCASIAN			BLACK/AFRICAN AMERICAN			ASIAN			HISPANIC		
Area	% of Business Owners [A]	% of Population [B]	Share of Shares [C]	% of Business Owners	% of Population	Share of Shares	% of Business Owners	% of Population	Share of Shares	% of Business Owners	% of Population	Share of Shares
Baldwin County	67.3%	54.6%	1.23	N/A	N/A	N/A	1.70%	1.20%	1.43	1.00%	1.5%	0.69
Macon-Warner Robins-Fort Valley, GA CSA	68.8%	58.6%	1.18	26.8%	37.2%	0.72	3.8%	1.3%	2.97	1.6%	2.7%	0.58
Georgia	73.3%	62.1%	1.18	21.0%	29.7%	0.71	5.3%	2.8%	1.86	3.7%	7.7%	0.48
United States	85.9%	74.5%	1.15	7.3%	12.4%	0.59	5.9%	4.4%	1.35	8.6%	15.1%	0.57

Note: The Macon-Warner Robins-Fort Valley, GA CSA includes Bibb, Crawford, Houston, Jones, Monroe, Peach, and Twiggs Counties

[A] U.S. Census Bureau, Survey of Business Owners (2007)

[B] 2005-2009 5-year population estimates were used due to lack of data at the county level, and 2007 was the midpoint of this data

[C] Share of shares - compares the percentage of business owners to the percentage of the minority group in the total population.

If this percentage = 1, the share of business owners in a minority group is equal to the proportion of that group in the total population.

Source: U.S. Census Bureau, Survey of Business Owners; U.S. Census Bureau, American Community Survey

Table 20 presents minority business ownership in the Central Georgia region, the state of Georgia, and the United States:

- Percentage of business owners by minority group[40]
- Percentage of the minority group to the total population[41]
- Share of shares - compares the percentage of business owners to the percentage of the minority group in the total population. If this percentage = 1, the share of business owners in a minority group is equal to the proportion of that group in the total population.
- The share of shares for Black/African American business ownership in the Macon-Warner Robins-Fort Valley CSA (0.72) was similar to the state of Georgia (0.71) and higher than the United States (0.59) (Table 20).
- Among minority groups, the Asian community has the highest participation (in relation to their size of population) in business ownership than the other minority categories (1.43 in the Baldwin County, 2.97 in the Macon-Warner Robins-Fort Valley CSA, 1.86 in the state of Georgia, and 1.35 in the United States).
- In comparison to other minority groups, Hispanics had the lowest participation (in relation to their size of population) in business ownership: the Macon-Warner Robins-Fort Valley CSA (0.58), the state of Georgia (0.48) and the United States (0.57). Relative to other regions, Hispanics in Baldwin County had a higher rate of participation (0.69).

[40] U.S. Census Bureau, Survey of Business Owners (2007)
[41] U.S. Census Bureau, American Community Survey 5-year estimates (2005-2009)

Women-Owned Businesses

Table 21. Percentage of Women-Owned Businesses, 2007

Area	Women-Owned Firms	Total Firms	Percentage of Women-Owned Firms
Macon-Warner Robins-Fort Valley CSA	10,200	30,007	34.0%
Baldwin County	1,083	3,861	28.0%
Georgia	278,290	876,031	31.8%
United States	**7,792,115**	**26,294,860**	**29.6%**

Note: The Macon-Warner Robins-Fort Valley, GA CSA includes Bibb, Crawford, Houston, Jones, Monroe, Peach, and Twiggs counties

Source: U.S. Census Bureau, Survey of Business Owners 2007

- Women-owned firms in the Macon-Warner Robins-Fort Valley CSA accounted for a little over one-third of firms (34.0%), which is a higher participation rate than the state of Georgia (31.8%) and the United States (29.6%) (Table 21).
- The percentage of women-owned firms in the Baldwin County (28.0%) was slightly lower the rest of the Central Georgia Region (34.0%).

Economic Development Organizations

State Economic Development Organizations

Table 22. State Economic Development Organizations, 2012

Economic Development Corporation	Contact	Phone	Website
Georgia Chamber	Chris Clark	(404) 223-2264	http://www.gachamber.com/
Georgia Department of Economic Development	Jennifer Nelson	(478) 752-1893	http://www.georgia.org
Georgia Department of Economic Development International Trade Division	Kathy Oxford	(678) 640-4351	http://www.georgia.org
Georgia Department of Economic Development – Tourism Division	Mandy McCullough	(706) 484-2952	http://www.georgia.org
Technology Association of Georgia	Tino Mantella	(404) 920-2027	http://www.tagonline.org

Source: Individual Websites

- Table 22 lists state-level economic development organizations in Georgia with contact information.

Regional Economic Development Organizations

Table 23. Regional Economic Development Organizations, 2012

Regional Economic Development Corporation	Contact	Phone	Website
Macon Economic Development Commission	Michael Dyer	(478) 621-2002	http://www.maconworks.com
Central Georgia Regional Commission	Ralph Nix	(478) 751-6160	http://www.middlegeorgiarc.org/ed.php
TAG Central Georgia	Heather Miner	(404) 920-2022	-

Source: Individual Websites

- Table 23 lists **regional** economic development organizations in the Central Georgia region with contact information.

County and City Economic Development Organizations

Table 24. County and City Economic Development Organizations, 2012

County	County Economic Development Corporation	Contact	Phone	Website
Bibb	Greater Macon Chamber of Commerce	Mike Dyer	(478) 621-2002	http://www.maconchamber.com
Bibb	MaconNOW!	Mike Dyer	(478) 621-2002	http://www.maconchamber.com/index.php?option=com_content&view=article&id=68&Itemid=122
Bibb	New Town Macon	Mike Ford	(478) 722-9909	http://www.newtownmacon.com/
Bibb	Main Street Macon	Mechel McKinley	(478) 751-7190	http://www.cityofmacon.net/mainstreet
Houston	Houston County Development Authority	Angie Gheesling	-	http://www.houstoncountyga.net/
Houston	Robins Regional Chamber of Commerce	Morgan Law	(478) 922-8585	http://www.robinsregion.com/
Monroe	Development Authority of Monroe County	Tiffany Andrews		http://www.daomc.net/
Bibb	Macon-Bibb County Industrial Authority	Maceo Rogers	-	http://www.maconworks.com/industrial-authority.da
Crawford	Roberta-Crawford County Chamber of Commerce	--		http://www.robertacrawfordchamber.org/
Crawford	Crawford County Development Authority	Carol Jackson	-	http://www.crawforddevelopment.net/
Jones	Jones County Development Authority & Chamber of Commerce	Kathyjo Gordon		http://www.jonescounty.org/index.php?option=com_content&task=view&id=5&Itemid=35
Twiggs	Twiggs County Development Authority & Chamber of Commerce	Sheri Wood	--	http://www.twiggschamber.com
Monroe	Forsyth-Monroe Chamber of Commerce	Tiffany Andrews	(478) 994-9239	http://www.forsyth-monroechamber.com/
Peach	The Development Authority of Peach County	Charles Sims	-	http://www.peachcountydevelopment.com/
Peach	Peach County Chamber of Commerce	--		http://www.peachchamber.com/
Milledgeville-Baldwin	The Development Authority of Milledgeville and Baldwin County	Matt Poyner	-	http://www.developmilledgeville.com/
Milledgeville-Baldwin	Baldwin and Milledgeville Chamber of Commerce	April Bragg		http://www.milledgevillega.com/

Source: Individual Websites

- Table 24 lists county and city-level economic development organizations in each of the eight counties in the Central Georgia region with contact information.

CHAPTER 3: ENTREPRENEURSHIP AND INNOVATION

The analysis conducted by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs examines the entrepreneurship and innovation profile of the Central Georgia region. First, it summarizes information from other studies conducted on entrepreneurship and innovation in the Central Georgia region. Second, it describes major findings from an analysis conducted by the Center for Economic Development.

The Central Georgia region is defined for this study as an 8-county region that includes Baldwin, Bibb, Crawford, Houston, Jones, Monroe, Peach, and Twiggs counties. In order to create a benchmarking system, we compared the Central Georgia region (and its components) to the state of Georgia and the United States.

REVIEW OF OTHER STUDIES: SUMMARY OF FINDINGS

In all of the literature reviewed, there was a strong emphasis on business development by attracting new business and expanding existing businesses, with no focus on facilitating entrepreneurship, enhancing technology transfer, or fostering innovation. In the most recent iteration of the Middle Georgia Regional Commission's plan to outline the future of the region for economic and community development purposes, entrepreneurship was mentioned only in the context of having communities labeled as "Entrepreneur Friendly"[42]. It is essential to build entrepreneurship into the conversation and the public policies of the Central Georgia region in order to build a healthy entrepreneurship ecosystem.

It is important to note the amount of entrepreneurship and innovation activity occurring in the Central Georgia region's backyard. Although there were no licenses granted from universities in the form of technology transfer in the Central Georgia region in 2011, there were 107 licenses issued in Fulton county (only 90 minutes away) and 75 in Clarke County (only 2 hours away)[43].

INNOVATION INDEX

The U.S. Economic Development Administration conducted studies on the empirical measure of innovation in U.S. regions[44]. They created an Innovation Index by combining measures on human capital, economic dynamics, productivity and employment, and economic well-being. The Central Georgia regional scores are lower than the state of Georgia, the Atlanta MSA, and the United States. Comparing the Central Georgia region to national leaders in innovation such as the San Jose MSA (Silicon Valley) demonstrates that the Central Georgia's innovation index is significantly lower.

Innovation Index:

- Central Georgia Region (8-County) = 77.6
- State of Georgia = 85.6
- Atlanta-Sandy Springs-Marietta, GA MSA = 93.4
- United States=100.0
- San Jose-Sunnyvale-Santa Clara, CA = 128.5 (National Leader in Innovation)

BROADBAND

Since the Central Georgia region is a more rural region, examining the broadband adoption rate of a region can show how widespread technology adoption is within a region because connectivity fuels entrepreneurship and innovation.

[42] Middle Georgia Regional Commission. "Middle Georgia Regional Plan 2011-2031"
[43] Data from Association of University Technology Mangers (ATUM) http://www.autm.net
[44] http://www.statsamerica.org/innovation/innovation_index/region-select.html

BROADBAND METRICS

The Investigative Reporting Workshop at American University created estimates at the state and regional level on broadband penetration and estimates represent the number of fixed residential broadband connections per 100 households.[45] Seen below, among the other regions in the state of Georgia, Macon MSA[46] has the lowest broadband penetration estimate.

State and Regional Broadband Penetration Rate:

- Atlanta-Sandy Springs-Marietta, GA MSA- 59.5
- Athens-Clarke County, GA MSA - 57.7
- Augusta-Richmond County, GA- MSA SC - 55.7
- Columbus, GA-AL MSA - 50.8
- **Macon, GA MSA - 49.2**
- Savannah, GA MSA - 59.1
- State of Georgia - 56.0

BROADBAND POLICIES/PROJECTS

1. Broadband Rural Initiative to Develop Georgia's Economy Fund BRIDGE Program[47]
    - Financial assistance , including grants and loans, is provided to counties to support deployment of high- speed broadband in rural areas of Georgia.
    - Deployment of funds is based upon need, but a single county is eligible for up $200,000; two counties up to $400,000; while three or more counties have no maximum and the cap is based on their strategy.
2. Baldwin-Milledgeville Wireless Project
    - A project with the objective to optimize funds from the Georgia Technology Authority to facilitate the development of a new wireless broadband network that will make affordable, high–speed internet service available in the most populated parts of the city and county.
2. Macon Miracle[48]
    - The Bibb County School District has laid out strategic priorities to focus on students, staff, parents, teaching, learning and technology.
    - A component of the Macon Miracle is to develop wireless connections so employees, students, and parents have equitable access to information essential to support student success.

[45] Fenton, Jacob. "Broadband rate, 100 largest US metropolitan areas" and "Broadband rate by state" Investigative Reporting Workshop. March 2012.
[46] The Macon, GA MSA is a 5-county area that includes Bibb, Crawford, Jones, Monroe, and Twiggs counties.
[47] One Georgia http://www.onegeorgia.org/programs/esb
[48] http://bibb.k12.ga.us/stplan2.html

Entrepreneurial Initiatives & Support

State of Georgia

1. Entrepreneurial and Small Business Loan Guarantee Fund (ESB)[49]
    - ESB provides a guarantee to Georgia financial lenders for gap financing to spur small business growth and development in economically stressed counties in Georgia.
    - One Georgia Authority guarantees up to 50% of private bank loans from $35,000 up to $250,000, with a 10% match by the borrower.
2. Angel Investor Tax Credits[50]
    - Encourage early investment in start-up companies
    - Investors who provide angel funding in 2012 or 2013 can claim income tax credits of 35% of their investment, with total credits of up to $50,000 allowed per year.

Central Georgia Region

1. EB-5 Immigrant Investor Program[51]
    - The Middle Georgia Regional Center was certified as an EB-5 center in May of 2011.
    - The Center encompasses an 11-county region: Baldwin, Bibb, Crawford, Houston, Jones, Monroe, Peach, Pulaski, Putnam, Twiggs, and Wilkinson.
    - The Middle Georgia Regional Center investment focuses on 9 target industries:
        - Construction
        - Transportation and Warehousing
        - Real Estate, Rental, and Leasing
        - Professional, Scientific, and Technical Services
        - Light Manufacturing
        - Heavy Manufacturing
        - Information Technology
        - Military/Demilitarization
        - Energy
2. TAG Middle Georgia[52]
    - Launched by the Technology Association of Georgia (TAG)
    - TAG Middle Georgia is looking to launch its Economic Gardening program in the Central Georgia region.
    - The Economic Gardening program, funded in part by a grant from the Economic Development Administration (EDA), focuses on high-growth entrepreneurs in advanced stages of the business cycle by offering an array of services, such as:
        - in-depth marketing research
        - staffing assessment
        - peer to peer learning

[49] One Georgia http://www.onegeorgia.org/programs/esb
[50] Georgia Department of Economic Development http://georgia.org/competitive-advantages/Pages/small-business-incentives.aspx
[51] http://mgrcen.com/
[52] http://www.tagonline.org/TAG-Middle-Georgia.php

- ○ competition analysis
- ○ demographic analysis

Central Georgia Incubators

1. Fort Valley State University Entrepreneur Center[53]
   - The center provides below-market lease payments for office space to entrepreneurs.
   - It currently houses five businesses: two lawyers, a public defender, a consultant, and the Middle Georgia Technical College's adult literacy program.
2. 567 Cherry Street[54]
   - The incubator offers business assistance to entrepreneurs looking to start their business in downtown Macon; it also has furnished and unfurnished office space ranging from 94 to 170 square feet.
3. Small Business Accelerator/Incubator TBD[55]
   - Macon-Bibb County Urban Development Authority, in partnership with College Hill Alliance and NewTown is looking to implement a small business accelerator in downtown Macon Georgia.

Role of Educational Institutions

Mercer University

Mercer University is a private university in Macon, Georgia (Bibb County), with an estimated enrollment of 8,000 students. Mercer ranks competitively among universities in the South and the School of Engineering is ranked among the Top 50 undergraduate engineering programs in the nation.[56] According to an economic impact study conducted for the Georgia Foundation of Independent Colleges of FY2007, Mercer University created a total economic impact of 4,017 jobs. [57]

KITE Alliance

The College Hill Alliance,[58] a nonprofit group that fosters development in the College Hill Corridor between downtown Macon and Mercer University, has begun a new program called the KITE Alliance. A partnership of the College Hill Alliance and Mercer University, The KITE Alliance program is designed to recruit and retain talented young professionals and high-tech businesses.[59] KITE representing **K**nowledge, **I**nnovation, **T**echnology and **E**ntrepreneurship.[60]

Research Centers

1. Mercer Engineering Research Center (MERC)[61]
   - MERC is a research center that is focused on sponsored engineering research for governmental, industrial, and commercial markets.

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[53] http://past.fvsu.edu/news/fvsu%E2%80%99s-entrepreneur-center-expanded
[54] http://the567.org/new-business/
[55] NewTown Macon. "NewTown Macon's Strategic Action Plan" April 11, 2012
[56] http://about.mercer.edu/awards/
[57] Curley, Michael, D. and Roger C. Tutterow, "The Economic Impact of 26 of Georgia's Independent Colleges & Universities During Fiscal Year 2007" February 2009
[58] http://www.collegehillmacon.com
[59] College Hill Alliance "College Hill Report to the Community" 2011
[60] College Hill Alliance "College Hill Report to the Community" 2011
[61] http://www.merc-mercer.org/

- The Center is located in an 113,000 sq. ft. facility and it provides modern physical security, staff offices, laboratories, fabrication areas, classrooms, and a large conference facility.
- MERC has contracts with the Department of Defense, the Federal Government, and other business entities — commercial, industrial, educational, or non-profits.
- Types of projects that MERC is involved in are as follows:
    - Applied Mechanics
    - Electronic Systems, Testing, and Warfare
    - Ergonomic Analysis
    - Flight Testing Industrial Engineering
    - Logistic Systems
    - Mechanical Design
    - Reliability Engineering
    - Software Engineering
    - Structural Testing

2. The Center for Translational Studies in Alzheimer's, Parkinson's and Neurodegenerative Disease[62]
    - The Center is focused on treatments to delay neurogenerative diseases, particularly Alzheimer's and Parkinson's diseases, through the application of novel pharmacological and stem cell trials with biomarker correlation in neurodegenerative diseases.
    - The Center has many partners throughout the University such as: College of Pharmacy and Health Sciences, College of Liberal Arts, Georgia Baptist College of Nursing, School of Medicine, University Minister and Dean of Chapel, and the Walter F. George School of Law.
3. Center for Clinical Outcomes Research and Education (CCORE)[63]
    - Established in 2008, this research center aims at improving outcomes in healthcare by providing pharmacy professionals the information and tools necessary to influence healthcare practice through research, education, and professional growth.
4. Center for Clinical Research[64]
    - The Center conducts phase I-IV clinical trials in healthy volunteers or in patients with specific disease states to discover and advance knowledge concerning the clinical use of drugs.
    - Other research activities include: hypertension, dementia, renal diseases, depression, anxiety, schizophrenia, sickle cell anemia, and AIDS
5. Center for Drug Delivery Research[65]
    - Researches drug delivery, embracing a variety of activities in the broad area of drug formulation and delivery

[62] http://research.mercer.edu/centers/nero/
[63] http://cophs.mercer.edu/research.htm
[64] http://cophs.mercer.edu/research.htm
[65] http://cophs.mercer.edu/research.htm

- This Center is involved in many areas of drug delivery such as: formulation/solid dosage forms, microsphere/nanotechnology, vaccine delivery and transdermal delivery.

6. Center for the Advancement of Teaching and Learning[66]
   - The Center's primary mission is to support and promote effective and innovative teaching that enhances learning at the College of Pharmacy and Health Sciences.

Fort Valley State University

Fort Valley State University is a historically black university (HBCU) in the Peach County, Georgia with an estimated enrollment of 3,000 students. According to University System of Georgia Institutions Economic Impact of FY2011, Fort Valley State created an economic impact of 1,760 jobs. [67]

Research Centers

1. Rural Business Outreach Institute[68]
   - Created in 1995, with funding from the United States Department of Agriculture (USDA), the institute's goal is to support the state's economic development initiative by providing entrepreneurs with technical assistance in the following areas:
     - Starting a small business
     - Improving operating efficiency
     - Identifying financial opportunities
     - Increasing profitability
     - Business expansion
   - The institute serves 16 counties: Bibb, Bleckley, Crawford, Crisp, Dooly, Houston, Jones, Macon, Marion, Monroe, Peach, Pulaski, Schley, Taylor, Twiggs, and Wilkinson.
   - The institute has an entrepreneur resource center, technology outreach, and entrepreneurial and youth programming.
   - Since the program's inception, it assisted over 1,700 businesses and coordinated the approval of over $3.2 million in loans, and created over 140 jobs in rural Georgia.
2. Georgia Small Ruminant Research and Extension Center[69]
   - The Center was created to improve and facilitate practices involved with animals that play an important role in the production of milk, meat, and fiber.
   - Services offered by the center include:
     - Processing of goats, sheep, cattle and swine for small-production farmers and individuals.
     - Training programs about food safety and Hazard Analysis and Critical Control Points (HACCP).
   - The facility has a Meat and Dairy Technology Center.

[66] http://cophs.mercer.edu/research.htm
[67] The University of Georgia "The Economic Impact of University System of Georgia Institutions on their Regional Economies in FY 2011" May 2012
[68] http://past.fvsu.edu/about/external-affairs/rboi
[69] ag.fvsu.edu/index.php/research/small-ruminants/

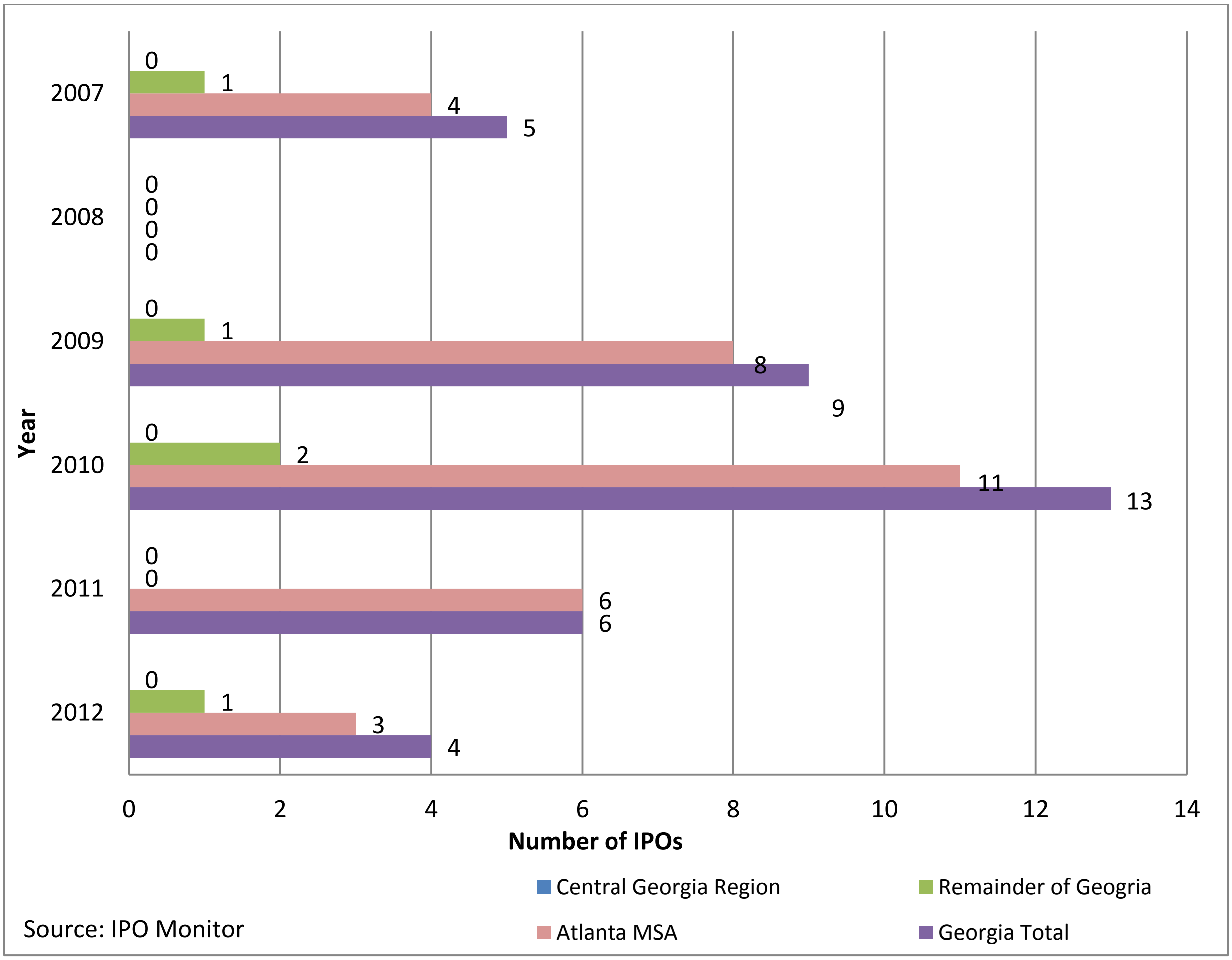
ENTREPRENEURSHIP AND INNOVATION ANALYSIS

This analysis, conducted by the Center for Economic Development, examines variables that measure entrepreneurship and innovation. Entrepreneurship analysis takes into account public offerings, self-employment, risk capital firms, venture capital investments, small business development centers, and tax incentives. Innovation trends are marked by public offerings; science, engineering and technology degrees; SBIR/STTR grants; university research and development; and patents.

Entrepreneurship Trends

Public Offerings

Figure 8. Public Offerings, 2007-2012

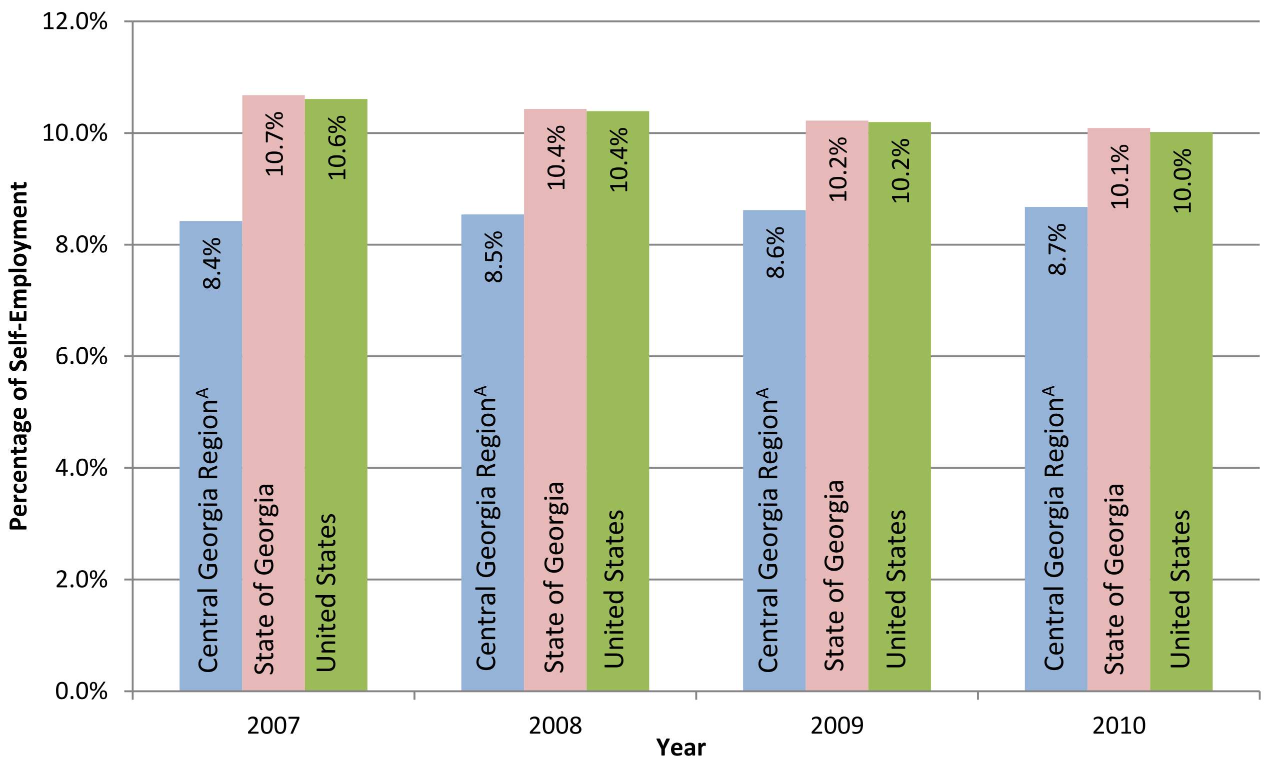


- There were no public offerings [70] in the Central Georgia region between January 2007 and October 1, 2012 (Figure 8).
- A majority of all public offerings in the state of Georgia were in the Atlanta MSA.

[70] Public offerings are the sale of shares of a company on a public market (i.e. NASDAQ). An Initial public offering (IPO) is the first-time sale of stock for a private company going public. A secondary offering is the offering of new stock from an existing public company.

SELF-EMPLOYED

Figure 9. Self-Employed as a Percentage of Total Employment, 2007-2010



Note: ^A Data for Baldwin and Peach counties was unavailable
Source: American Community Survey, US Census Bureau

- The rate of self-employment in the Central Georgia region from 2007 to 2010 was less than that of the state of Georgia and the United States (Figure *9*).
- In 2010, the Central Georgia region reported an 8.7% self-employment rate; this was lower than the state of Georgia (10.1%), which has been very close to the national average of (10.0%).
- It is interesting to note that using the Survey of Consumer Finances data from the Board of Governors of the Federal Reserve System, the Center for Rural Entrepreneurship found that in 2007, on average, in the United States, individuals who were self-employed were five times wealthier than those who worked for someone else.[71] This is an interesting implication for entrepreneurship and wealth creation.

[71] Center for Rural Entrepreneurship. “American Wealth, Household Wealth Holding in America” November 2009

Risk Capital Firms

Table 25. Risk Capital Firms in Georgia

Organization	City	Phone No.	Website
Accel-KKR LLC	Atlanta	(678) 809-5985	http://www.accel-kkr.com/
Arcapita, Inc.	Atlanta	(404) 920-9000	http://www.arcapita.com/
Atlanta Capital Partners, LLC	Atlanta	(404) 856-9157	http://www.atlcp.com/
Atlanta Equity	Atlanta	(404) 478-6770	http://www.atlantaeq.com/
Blackstone	Atlanta	(404) 460-2321	http://www.blackstone.com/
Brighton Partners, LLC	Atlanta		http://www.bpequity.com/
Croft and Bender Capital	Atlanta	(404) 841-3131	http://www.croft-bender.com/
Cordova Ventures	Alpharetta	(678) 942-0300	http://www.cordovaventures.com/
HIG Capital	Atlanta	(404) 504-9333	http://www.higcapital.com/
KT Capital	Atlanta	(770) 753-4323	http://www.ktcapital.net/
Linx Partners	Atlanta	(770) 818-0335	http://www.linxpartners.com/
Msouth Equity Partners	Atlanta	(404) 816-3255	http://www.msouth.com/
Nancy Creek Capital	Atlanta	(678) 384-4520	http://www.nancycreekcapital.com/
Noro-Moseley Partners	Atlanta	(404) 233-1966	http://www.noromoseley.com
Navigation Capital Partners	Atlanta	(404) 264-9305	http://www.navigationcapital.com/
Peachtree Equity Partners	Atlanta	(404) 870-8900	http://www.peachtreeequity.com/
River Capital	Atlanta	(404) 873-2166	http://www.river-capital.com/
Roark Capital Group	Atlanta	(404) 591-5200	http://www.roarkcapital.com/
Capstone Financial Partners	Atlanta	(404) 261-8900	http://www.capstonefinancialpartners.com/
Chatham Capital	Atlanta	(770) 618-2100	http://www.chathamcapital.com/
Accuitive Medical Ventures	Atlanta	(678) 812-1101	http://www.amvpartners.com/
The Acquisition Search Corp.	Atlanta	(404) 459-2777	http://www.acquisitionsearch.com
Atlanta Technology Angels	Atlanta		http://angelatlanta.com/
Buckhead Investment Partners	Atlanta	(404) 495-5230	http://www.buckheadinvestments.com/
Fulcrum Equity Partners	Atlanta	(770) 551-6300	http://www.fulcrumvp.com/
CEO Ventures	Atlanta		http://www.ceoventures.com/
Venture Atlanta	Marietta	(770) 298-4202	http://ventureatlanta.org
SouthPointe Ventures, LLC	Atlanta	(404) 249-6000	http://www.southpointeventures.com/
BVT Partners	Atlanta	(770) 618-3500	http://www.bvt.com/
Domain Capital Advisors	Atlanta	(770) 390-3928	http://www.domaincapitaladvisors.com/
GRA Venture Fund LLC	Atlanta	(404) 332-9770	http://www.graventurefund.com
TTV Capital	Atlanta	(404) 347-8400	http://www.ttvcapital.com

Source: http://www.angelresourceinstitute.org/listing-of-groups/; PricewaterhouseCoopers MoneyTree; Pratt's Guide to Private Equity and Venture Capital Sources

• There were no risk-capital firms in the Central Georgia region. There are ***32*** risk capital firms located in the state of Georgia; most firms are located in Atlanta (Table 25).

Risk Capital Investment

Table 26. Venture Capital Investments by the Amount of Investment ($Mil) and the Number of Companies Invested, 2007-2011

	2007		2008		2009		2010		2011	
Region	Investment ($Mil)	No. of Companies Invested	Investment ($Mil)	No. of Companies Invested	Investment ($Mil)	No. of Companies Invested	Investment ($Mil)	No. of Companies Invested	Investment ($Mil)	No. of Companies Invested
Central Georgia Region	$0.0	0	$0.0	0	$0.0	0	$0.0	0	$0.0	0
Atlanta MSA	$542.6	64	$1,514.8	68	$359.6	38	$449.7	63	$573.9	65
Remainder of Georgia	$0.0	0	$0.0	0	$5.2	1	$1.3	2	$0.0	1

Note: Venture Capital Investment is adjusted for inflation to 2011 dollars
Source: Venture Economics/National Venture Capital Association; Thompson Reuters

- A majority of the venture capital investment in the state of Georgia over the last five years took place in the Atlanta MSA. In 2011, this region obtained $573.9 million in investments in 65 companies (Table 26).
- Not a single company in the Central Georgia region received any investment from 2007 to 2011.
- The remainder of Georgia, which excludes the Central Georgia region and the Atlanta MSA, reported minimal sums of venture capital investment over the last five years.

SMALL BUSINESS DEVELOPMENT CENTERS

Table 27. Small Business Development Centers in the Central Georgia Region

Organization Name	City	County	Phone	Contact
The University of Georgia SBDC	Macon	Bibb	(478) 757-3609	Josh Walton

Source: Small Business Administration and Individual Organization Websites

- ***One*** small business development center was identified within the eight counties of the Central Georgia region (Table 27).

Tax Incentives

Table 28. Tax Incentives in the State of Georgia

Program Name	Description	Sponsoring Agency
Angel Investor Tax Credit	This program is a tax credit for Angel Investors who invest in early stage or start-up companies in Georgia.	Georgia Department of Economic Development
Film, Television and Digital Entertainment Tax Credit	Film and television companies may receive a tax credit of up to 30% of money spent on production and post-production in Georgia, either for a single production or on multiple projects. Minimum spending amount is $500,000. Sales and use tax exemptions can save as much as an additional 8%.	Georgia Department of Economic Development
Georgia Minority Subcontractors Tax Incentive	This is a Georgia income tax adjustment for any company that subcontracts with a minority-owned firm to furnish goods, property, or services to the state of Georgia. This includes, but is not restricted to, the construction of any building or structure for the state.	Governor's Small Business Center
Investment Tax Credit	Companies in manufacturing or telecommunications support that have operated in Georgia for at least three years are eligible to earn investment tax credits for upgrades or expansions. Credit earned amounts to 1% to 8% of qualified capital investments of $50,000 or more.	Georgia Department of Economic Development
Job Tax Credit	A tax credit on Georgia income taxes for eligible businesses that create new jobs in counties or "less-developed" census tract areas.	Georgia Department of Community Affairs
Jobs Tax Credit	A credit of up to $4,000 per year (for up to five years) per job created (depending on the county or tract 'economic tier' ranking).	Georgia Department of Economic Development
Mega Project Tax Credit	Businesses that employ at least 1,800 “net new” employees and have a minimum annual payroll of $150 million or make a minimum $450 million investment in Georgia qualify for the mega project tax credit.	Georgia Department of Economic Development
Optional Investment Tax Credits	Optional Investment Tax Credits reward growing companies for making major investments in Georgia. The exact value of the optional investment tax credits depends on three factors: how much is invested, where the investment is made in Georgia, and the change in a company’s tax liability.	Georgia Department of Economic Development
Port Tax Credit Bonus	Georgia companies that increase imports or exports through a Georgia port by at least 10% can qualify for a bonus tax credit. Two options are offered: an addition of $1,250 to the job tax credit or an adjustment in the investment tax credit.	Georgia Department of Economic Development
Quality Jobs Tax Credit	Companies that create at least 50 jobs in a 12-month period --at wages that are at least 10% higher than the county average ---qualify for a tax credit of $2,500 to $5,000 per job.	Georgia Department of Economic Development
R&D Tax Credit	Companies that increase qualified research spending may qualify for an R&D tax credit equal to a portion of that spending increase.	Georgia Department of Economic Development
Retraining Tax Credit	Georgia businesses may offset their investment in retraining employees to use new equipment or learn new skills through a retraining tax credit. The credit equals 50% of direct training expenses, up to $500 credit per full-time employee, per training program.	Georgia Quick Start
Work Opportunity Tax Credit	Georgia’s Department of Labor administers a federal tax credit to Georgia companies that hire individuals who have faced barriers to employment. The tax credit ranges from $1,200 to $9,000 per hire.	Georgia Department of Labor

Source: Georgia Department of Community Affairs

- Table 28 shows selected tax incentives in the state of Georgia. For eligibility requirements, see Appendix A.5. Tax Incentives in the State of Georgia.

INNOVATION TRENDS

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATIC DEGREES

Table 29. STEM Degrees Awarded by Institutions in the Central Georgia Region, 2010

Institution	Total Degree Awarded	Total STEM Degrees Awarded	Physical Sciences	Engineering	Science and Engineering Technologies	Life Sciences	Math and Computer Sciences	Interdisciplinary or Other Sciences
Fort Valley State Univ.	477	125	2	12	43	47	21	0
Georgia College and State Univ.	1,516	212	17	0	9	166	20	0
Georgia Military College	708	90	0	0	0	85	5	0
Central Georgia Technical Institute	2,162	244	0	0	208	0	36	0
Central Georgia Technical College	2,148	888	0	1	752	0	135	0
Macon College	803	241	0	0	28	151	62	0
Mercer University	2,137	634	7	108	26	453	36	4
Wesleyan College	137	15	4	0	0	8	3	0
Total Degrees Awarded	**10,088**	**2,449**	**30**	**121**	**1,066**	**910**	**318**	**4**

Source: National Center for Education Statistics; National Science Foundation

- The total number of STEM degrees awarded in Table 29 (2,449) represents 7% of all STEM degrees awarded in the state of Georgia (34,761) in 2010.

- The STEM degrees awarded in 2010 represent 24% (2,449) of all degrees awarded (10,088) by Middle Georgia Institutions.

- Of the institutions listed in Table 29, Central Georgia Technical College and Mercer University (888 degrees and 634 degrees, respectively) represent over 60% of STEM degrees awarded in the Central Georgia region (62%).

- Mercer University, the largest 4-year institution in the Central Georgia region, awarded 634 degrees in STEM, and of those, 71% (were in *Life Sciences*).

- Of all STEM degrees awarded by the Central Georgia Technical College, 88% (777) were in the certificates category; 608 of the certificates awarded were for programs less than one year in length.

- Similarly, 84% (206) of all STEM degrees awarded by the Middle Georgia Technical Institute were in certificates; 130 of the certificates awarded were for programs less than one year in length.

UNIVERSITY R&D EXPENDITURES

Table 30. University R&D Expenditures, 2006 - 2010

Institution	2006 ($ Mil)	2007 ($ Mil)	2008 ($ Mil)	2009 ($ Mil)	2010 ($ Mil)
Fort Valley State University	$2.70	$2.66	$3.26	$3.30	$5.31
Georgia College and State University	$0.00	$0.00	$0.00	$0.00	$0.00
Georgia Military College	$0.00	$0.00	$0.00	$0.00	$0.00
Middle Georgia Technical Institute	$0.00	$0.00	$0.00	$0.00	$0.00
Central Georgia Technical College	$0.00	$0.00	$0.00	$0.00	$0.00
Macon State College	$0.00	$0.00	$0.00	$0.00	$0.00
Mercer University	$20.60	$18.48	$19.45	$22.24	$27.30
Wesleyan College	$0.00	$0.00	$0.00	$0.00	$0.00
Total	**$23.30**	**$21.13**	**$22.72**	**$25.55**	**$32.61**

Note: Expenditures are adjusted for inflation to 2010 dollars
Source: National Science Foundation

- Fort Valley State University and Mercer University were the only institutions that recorded university R&D expenditures from 2006 to 2010.
- The total university R&D expenditures in the Central Georgia region in 2010 ($32.61 million) represented a tiny percentage (0.4%) of all university R&D expenditures in the state of Georgia ($7.63 billion) in 2010 (Table 30).
- Over the last five years, total university R&D expenditures in Central Georgia region have grown by 40%; the largest percentage increase during this time occurred at Fort Valley State University, which almost doubled its R&D expenditures (97%).

Table 31. University R&D Expenditures by Science Type, 2010

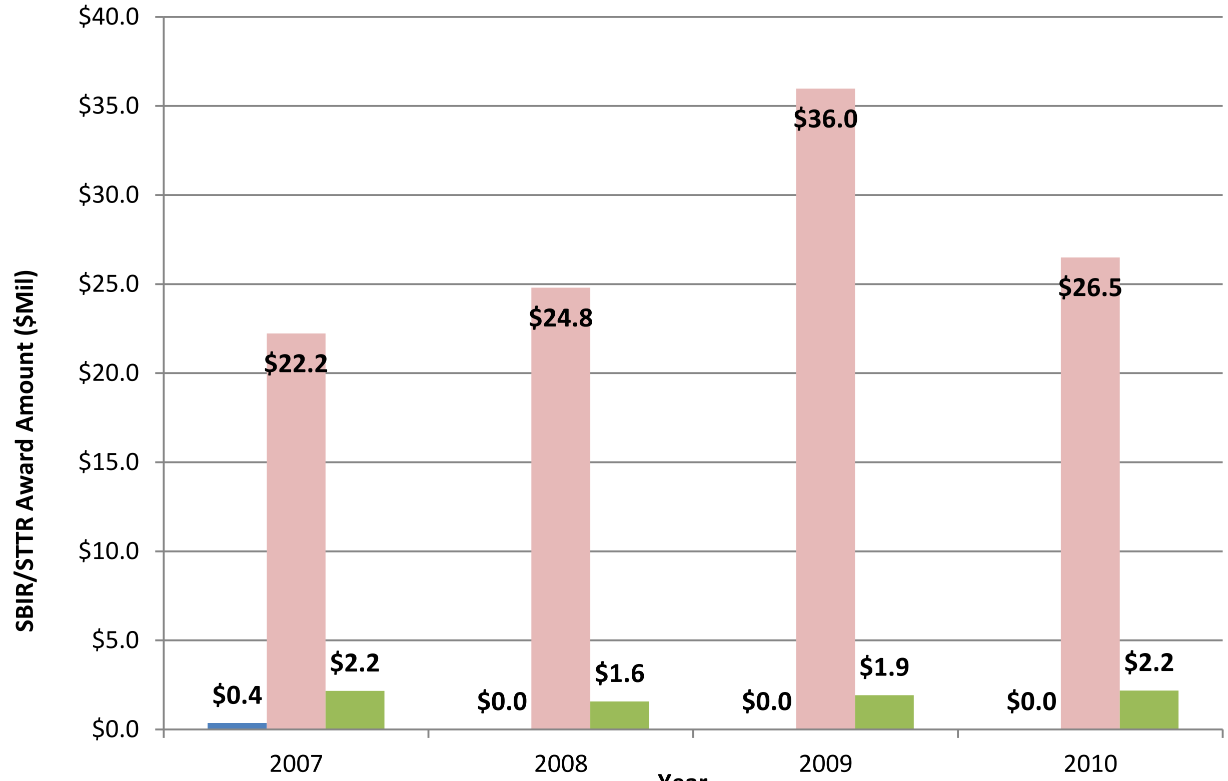
Institution	Total Amount Awarded ($Mil)	Engineering ($Mil)	Physical Sciences ($Mil)	Math and Computer Sciences ($Mil)	Life Sciences ($Mil)	Inter-Disciplinary or Other Sciences	Geosciences ($Mil)	Other ($Mil)
Fort Valley State University	**$5.31**	$0.00	$0.16	$0.67	$3.76	$0.00	$0.00	$0.72
Georgia College and State Univ.	**$0.00**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Georgia Military College	**$0.00**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Middle Georgia Technical Institute	**$0.00**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Central Georgia Technical College	**$0.00**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Macon State College	**$0.00**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Mercer University	**$27.30**	$20.70	$0.13	$0.03	$5.54	$0.43	$0.00	$0.47
Wesleyan College	**$0.00**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total	**$32.61**	**$20.70**	**$0.29**	**$0.70**	**$9.30**	**$0.43**	**$0.00**	**$1.19**

Source: National Science Foundation

- The largest share of university R&D expenditures by science type in 2010 in the Central Georgia region occurred in *Engineering*, which accounted for 63% of all University R&D expenditures for the region (Table 31). It all occurred at Mercer University.
- The second leading science type for university R&D expenditures occurred in *Life Sciences* ($9.3 million); with 40% derived from Fort Valley State University and 60% from Mercer University.

SBIR/STTR AWARDS

Figure 10. SBIR/STTR Awards ($Mil), 2007-2010



Note: Awards are adjusted for inflation to 2010 dollars
Source: SBIR/STTR Awards totaled from the following government agencies: DHS, DOC, DOD, DOE, DOI, DOT, ED, EPA, HHS, HUD, NASA, NIH, NIST, NRC, NSF, and USDA;

- The Central Georgia region and remainder of Georgia areas were both dwarfed by metropolitan Atlanta's performance. In 2010, the Atlanta MSA was awarded 81 SBIR/STTR Awards totaling $26.5 million (Figure 10). For more information SBIR/STTR award summary see Appendix Table A.6.

- Between 2007 and 2010, only one SBIR/STTR awards was distributed in the Central Georgia region. It was to Southeastern Insectaries, Inc. in Perry, GA, in 2007 for $346,000. For more information on this award, see Appendix Table A.7. SBIR/STTR Awards in the Central Georgia Region, 2007.

PATENTS

Patents are an alternative measure for regional innovative activities and are often used as a proxy for innovation. Each patent includes the name of at least one individual inventor (many have multiple inventors). Ownership is assigned to an individual inventor or to a corporation, university, or another research institution (assignee).

Patents were downloaded (those already granted and applications) for the state of Georgia between January 1, 2008 and October 1, 2012. To be included in the data for the Central Georgia region, the patent had to include at least one inventor or an assignee from the Central Georgia region. Additional inventors or assignees can be from outside the Central Georgia Region (referred to as "Outside").

Patent Counts

Table 32. The Central Georgia Region (8-Counties) Patent Frequency Counts, January 2008 - October 2012

Year	Number of Patents	Percentage of Total
2008	29	16.9%
2009	49	28.4%
2010	48	27.9%
2011	34	19.8%
2012*	12	7.0%
Total	172	100.0%

Note: * Only partial year
Source: Delphion.com

- In the Central Georgia region, 172 patents were granted and applied for between January 2008 and October 2012 (Table 32).

Table 33. Patents: The Central Georgia Region (8-Counties), January 2008 - October 2012

Designation	All Patents: Granted and Applications
Central Georgia Region Inventor without Assignee	86
Central Georgia Region Inventor and Central Georgia Region Assignee	16
Central Georgia Region Inventor and Outside Assignee	64
Outside Inventor and Central Georgia Region Assignee	6
Total Patent Applications from the Central Georgia Region Inventors and/or Assignees	**172**

Source: Delphion.com

- Of the 172 patents, 16 were from a Central Georgia regional inventor with a Central Georgia regional assignee (9%) (Table 33).

- Only 13% of the patents had an assignee from the Central Georgia region, showing that businesses within the Central Georgia Region are **not** the major drivers of local patents.

- Half of the patents (86) listed in Table 33 were from a Central Georgia regional inventor without an assignee (Central Georgia Region Inventor without Assignee).

Patent Counts by Assignee

Table 34. Patent Assignee Companies located in the Central Georgia Region (8-Counties), January 2008 - October 2012

Rank	Assignee Name	Number of Patents	Percentage of Total Patents
1	Smisson-Cartledge Biomedical, LLC	3	13.6%
2	Southern Spine, LLC	3	13.6%
3	3SI Security Systems, Inc.	2	9.1%
4	Clean Control Corp.	2	9.1%
5	Hold Your Haunches, Inc.	2	9.1%
6	Nanomist Systems, LLC	2	9.1%
7	Mercer University	2	9.1%
8	Launch Pad 39A, LLC	1	4.5%
9	Mineral Assets, LLC	1	4.5%
10	MMK Group, LLC	1	4.5%
11	Saftey First Solutions	1	4.5%
12	Spirit of the 21st Century Group, LLC	1	4.5%
13	Super Lawn Truck, Inc.	1	4.5%

Note: Out of 22 Patents; Rank out of 13
Source: Delphion.com

- The top five companies or organizations listed in Table 34 (Smisson-Cartledge Biomedical, LLC; Southern Spine, LLC; 3SI Security Systems, Inc.; Clean Control Corp.; and Hold Your Haunches, Inc.) accounted for 56% (12) of assignee company patents that were located in the Central Georgia region.

Patent Counts by Industry Classification

Table 35. Top 15 International Patent Classifications for Assignees Located in the Central Georgia Region (8-Counties), by Number of Patents, January 2008 - October 2012

Rank	International Patent Classifications	Number of Patents	Percentage of Total
1	Diagnosis; surgery; identification	4	18.2%
2	Preparation for medical, dental, or toilet purposes	3	13.6%
3	Outerwear; protective garments; accessories	2	9.1%
4	Radio direction-finding; radio navigation	2	9.1%
5	Shirts; underwear; baby linen; handkerchiefs	1	4.5%
6	Domestic washing or cleaning	1	4.5%
7	Devices for introducing media into, or onto, the body	1	4.5%
8	Fire-fighting	1	4.5%
9	Apparatus for physical training, gymnastics, swimming, climbing or fencing	1	4.5%
10	Chemical or physical processes	1	4.5%
11	Vehicles adapted for load transportation or to transport	1	4.5%
12	Treatment of water, waste water, sewage, or sludge	1	4.5%
13	Fuels not otherwise provided for; natural gas; synthetic natural gas	1	4.5%
14	Detergent compositions; use of single substances as detergents; soap or soap-making	1	4.5%
15	Signaling or calling systems; order telegraphs; alarm systems	1	4.5%

Note: Out of 22 Patents; Rank out of 15
Source: Delphion.com

- Table 35 displays the Top 15 patent counts by the International Patent Classification name (IPC) and shows that the Top 5 account for almost 56% (12) of patents in the Central Georgia Region in this category.
- These scientific fields identify the technology strengths in the Central Georgia Region.

Individual Inventors Patent Counts by Industry Classification

Table 36. Top 15 International Patent Classifications by Individual Inventors in the Central Georgia Region (8-Counties) by Number of Patents, January 2008 - October 2012

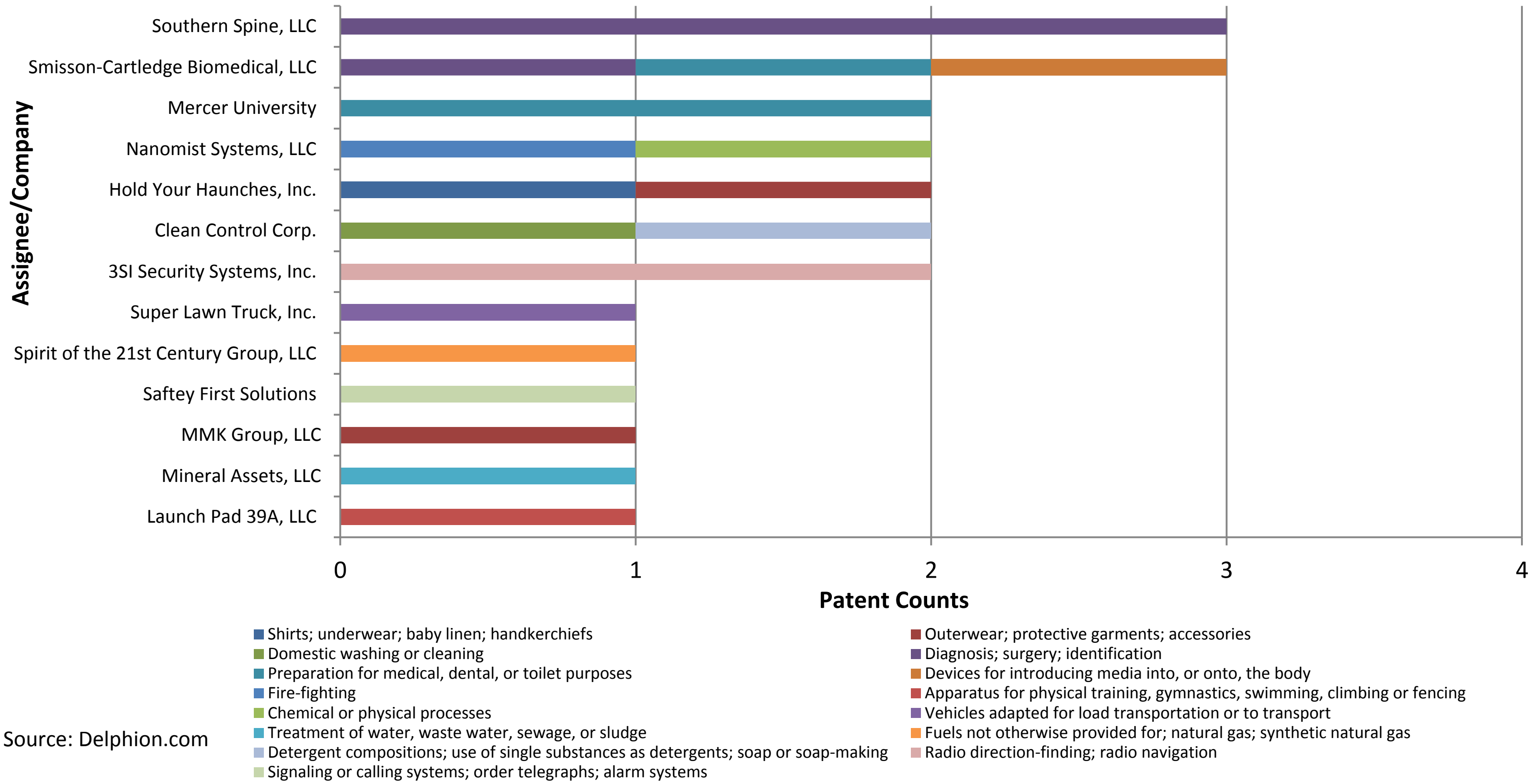
Rank	International Patent Classifications	Number of Patents	Percentage of Total
1	Devices for introducing media into, or onto, the body	9	10.5%
2	Preparation for medical, dental, or toilet purposes	7	8.1%
3	General building construction; walls	7	8.1%
4	Chairs, sofa, beds	3	3.5%
5	Shaping or joining of plastics; shaping of substances in a plastic state	3	3.5%
6	Containers for storage or transport of articles or materials	3	3.5%
7	Outerwear; protective garments; accessories	2	2.3%
8	Diagnosis; surgery; identification	2	2.3%
9	Filters implantable into blood vessels	2	2.3%
10	Electrotherapy; magnetotherapy; radiation therapy; ultrasound therapy	2	2.3%
11	Apparatus for physical training, gymnastics, swimming, climbing or fencing	2	2.3%
12	Chemical or physical process	2	2.3%
13	Layered products, i.e. products built-up of strata of flat or non-flat	2	2.3%
14	Non-metallic elements; compounds thereof	2	2.3%
15	Weapons for projecting missiles without use of explosives or combustible propellant charge	2	2.3%

Note: Out of 86 Patents; Rank out of 50
Source: Delphion.com

- Table 36 displays the Top 15 patent counts by individual inventors by the International Patent Classification name (IPC). It shows that the Top 15 account for almost 58% (50) of individual inventor patents in the Central Georgia region.
- Most of the technologies listed in Table 35 (by assignee) are different from those in Table 36 (by individual inventors). Both tables include scientific fields that identify the technology strengths in the Central Georgia region.

Patent Assignee by Industry Classification

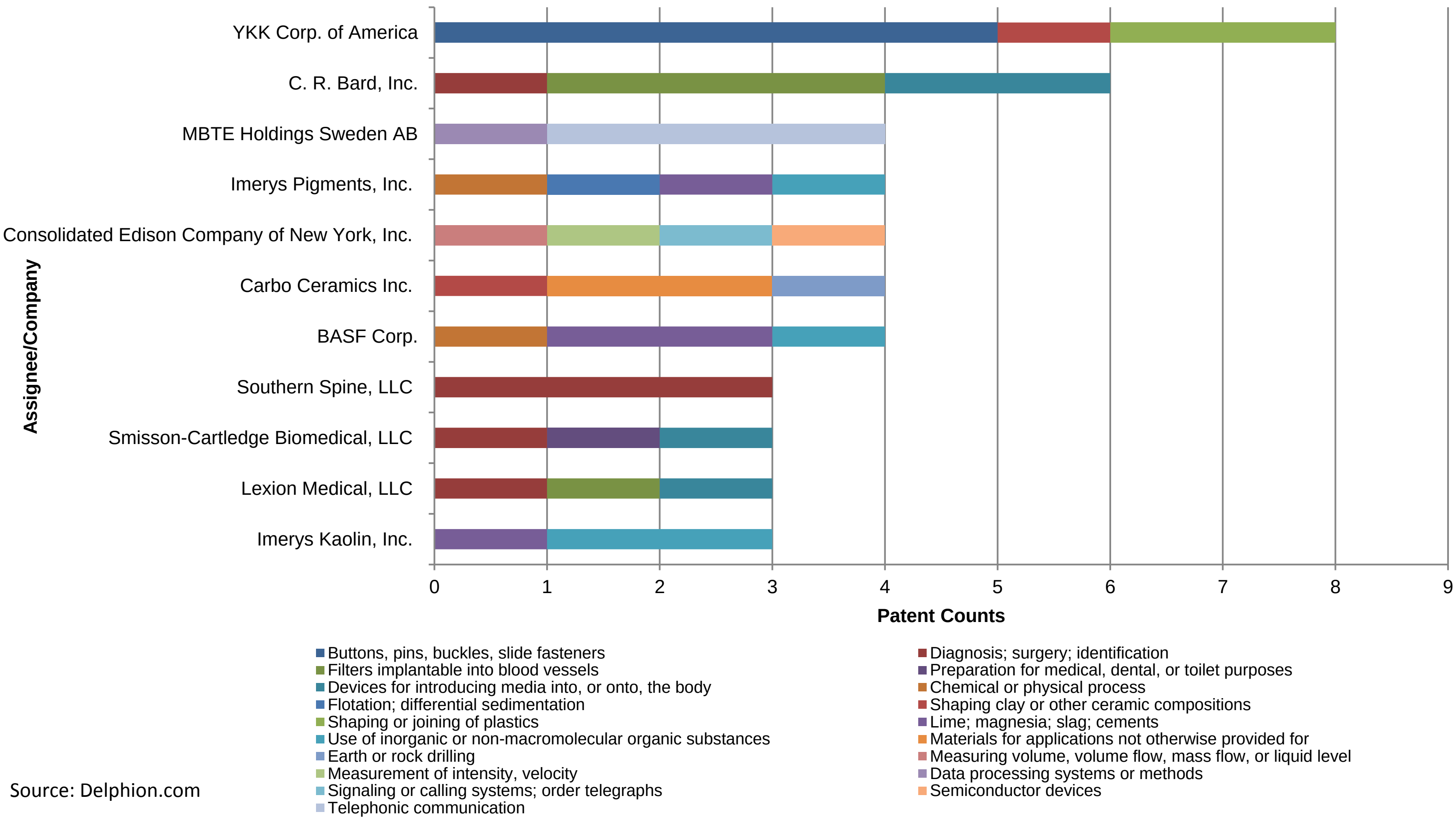
Figure 11. The Central Georgia Region Patents: Top 13 Assignees located in the Central Georgia region by International Patent Classification Code, January 2008 - October 2012



Source: Delphion.com

- Figure 11 displays patent counts by assignee and International Patent Classification for assignees located in the Central Georgia region. The largest number of patents held by an individual company within a single International Patent Classification was Southern Spine, LLC. It held three patents in the category *Diagnosis; surgery; identification.* Southern Spine, LLC patents accounted for 43% of all patents in this category.

Figure 12. The Central Georgia Region Patents: Top 11 Assignees by International Patent Classification Code, January 2008 - October 2012



Source: Delphion.com

- Figure 12 displays patent counts by assignee and International Patent Classification for all assignees no matter their physical location. The largest number of patents held by an individual company within a single International Patent Classification YKK Corp. of America, which held five patents in the category *Buttons, pins, buckles, slides fasteners.* YKK Corp. of America a zipper producer is headquartered in Marietta, GA, where the patenting applications take place, but the production facilities are in Macon, GA.

APPENDIX

A. 1. Population below Poverty Level, 2006-2010 Annual Average

Area	Total Population Below Poverty Level	Percent of Total Population Below Poverty Level	Male Population Below Poverty Level	Percent Population Below Poverty Level (Male)	Female Population Below Poverty Level	Percent Population Below Poverty Level (Female)
Baldwin County	10,269	25.20%	3,997	20.9%	6,272	29.02%
Bibb County	33,051	22.39%	13,912	20.1%	19,139	24.38%
Crawford County	2,627	20.53%	1,342	20.4%	1,285	20.70%
Houston County	16,917	12.76%	6,903	10.7%	10,014	14.67%
Jones County	3,596	13.07%	1,336	10.2%	2,260	15.68%
Monroe County	3,008	12.29%	1,134	9.6%	1,874	14.80%
Peach County	6,184	25.38%	2,522	21.7%	3,662	28.75%
Twiggs County	1,981	21.24%	827	18.0%	1,154	24.40%
Central Georgia Region (8-County)	77,633	18.51%	31,973	16.0%	45,660	20.84%

Notes: Percentage of population below poverty level = Total population below poverty level/population for whom poverty status is determined.
Source: Source: U.S. Census Bureau, American Community Survey, 5-Year Annual Average 2006-2010

A. 2. Educational Attainment, 2006-2010 Annual Average

		Less Than 9th Grade		9th to 12th Grade No Diploma		High School Graduate, GED, or Alternative		Some College, No Degree		Associate's Degree		Bachelor's Degree		Graduate or Professional Degree	
Area	Total Population Over 25 Years Old	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older
Baldwin County	28,748	2,169	7.5%	4,152	14.4%	10,395	36.2%	5,135	17.9%	1,610	5.6%	2,960	10.3%	2,327	8.1%
Bibb County	98,704	5,711	5.8%	12,805	13.0%	31,119	31.5%	20,010	20.3%	6,235	6.3%	14,879	15.1%	7,945	8.0%
Crawford County	8,653	620	7.2%	1,219	14.1%	3,464	40.0%	1,710	19.8%	464	5.4%	939	10.9%	237	2.7%
Houston County	85,196	3,196	3.8%	7,647	9.0%	24,407	28.6%	21,455	25.2%	7,674	9.0%	13,022	15.3%	7,795	9.1%
Jones County	18,845	1,007	5.3%	1,748	9.3%	7,240	38.4%	4,130	21.9%	1,479	7.8%	2,137	11.3%	1,104	5.9%
Monroe County	17,422	1,363	7.8%	2,000	11.5%	6,474	37.2%	3,497	20.1%	771	4.4%	2,094	12.0%	1,223	7.0%
Peach County	16,134	1,350	8.4%	1,855	11.5%	5,786	35.9%	3,082	19.1%	1,162	7.2%	1,892	11.7%	1,007	6.2%
Twiggs County	6,352	680	10.7%	1,773	27.9%	2,508	39.5%	674	10.6%	293	4.6%	346	5.4%	78	1.2%
Central Georgia Region (8-County)	***280,054***	***16,096***	***5.7%***	***33,199***	***11.9%***	***91,393***	***32.6%***	***59,693***	***21.3%***	***19,688***	***7.0%***	***38,269***	***13.7%***	***21,716***	***7.8%***

Source: U.S. Census Bureau, American Community Survey, 5-Year Annual Average 2006-2010

A. 3. Aerospace Related Establishments in the Central Georgia Region

Company	Employment	Line of Business	City	County	NAICS
BAE Systems Inc.	250	Wiring devices for aerospace systems	Warner Robins	Houston	336413
LH Thomson Co. Inc.	75	Aerospace machined parts	Macon	Bibb	336413
McCann Engineering Inc.	30	Aircraft shock mounts, slip ring assemblies, fuselage and components	Macon	Bibb	336413
Mid South Machine & Tool Inc.	32	Aircraft machined parts	Macon	Bibb	336413
The Boeing Co.	190	Structural subassemblies for airlifters	Macon	Bibb	336413
The Boeing Co.	600	Structural subassemblies for airlifters	Macon	Bibb	336413
Triumph Aerostructures/Vought Aircraft Division	495	Composite, fiberglass and metal bonded structures for aircrafts	Milledgeville	Baldwin	336413
Lockheed Martin Corp.	40	Guided missiles and space vehicles	Warner Robins	Houston	336414
Aerospace Defense Coatings **of** GA Inc.	34	Anodizing and plating services for aerospace vehicles	Macon	Bibb	488190
Bombardier Aerospace	125	Maintenance, repair and overhaul (MRO)	Macon	Bibb	488190
Northrop Grumman Corp.	150	Integrated systems repair shop	Warner Robins	Houston	488190
TCS Design & Management	45	Testing support for military industry	Warner Robins	Houston	488190
TIMCO Aviation Services Inc.	330	Aircraft maintenance and overhaul	Macon	Bibb	488190

Source: Georgia Power, Community and Economic Development, 2010

A. 4. Top Employers in the Central Georgia Region, 2011

Rank	Company	Mailing	City	Zip	Phone	FTEs	Website	Description
1	Medical Center of Central Georgia	777 Hemlock St.	Macon	31201	(478) 633-1000	4,000	http://www.chwg.org	Hospital
2	GEICO	4295 Ocgulgee East Blvd.	Macon	31296	(478) 464-0203	3,936	http://www.geico.com	Insurance
3	Bibb County Board of Education	484 Mulberry St.	Macon	31201	(478) 765-8711	3,300	http://www.bibb.k12.ga.us	Public Education
4	City of Macon	700 Poplar St.	Macon	31201	(478) 751-7400	1,494	http://www.cityofmacon.net	City Government
5	Coliseum Health System	350 Hospital Dr.	Macon	31217	(478) 655-7000	1,263	http://coliseumhealthsystem.com	Hospital
6	Bibb County	601 Mulberry St	Macon	31201	(478) 621-6400	893	http://www.co.bibb.ga.us	County Government
7	Mercer University	1400 Coleman Ave.	Macon	31207	(800) 637-2378	871	http://www.mercer.edu	Private Education
8	Wal-Mart Super Stores	Multiple locations	-	-	-	726	http://www.walmart.com	Retail
9	YKK (U.S.A.)	3340 Chestney Rd.	Macon	31217	(478) 744-4100	725	http://www.ykkamerica.com	Zippers & Vinyl Windows
10	United States Postal Service	-	-	-	-	600	-	Postal Service
11	Georgia Farm Bureau Federation	1620 Bass Rd.	Macon	31210	(478) 474-8411	570	http://www.gfb.org	Insurance Company
12	Graphic Packaging Corp	100 Graphic Pkwy.	Macon	31206	(478) 788-6160	520	http://www.riverwood.com	Coated and Container Board
13	The Boeing Company	1821 Avondale Mill Rd.	Macon	31216	(478) 784-3700	500	http://www.boeing.com	Aircraft Sub-Components
14	IKON Office Solutions	1738 Bass Rd.	Macon	31210	(478) 474-1089	500	http://www.ikon.com	Sales, Service, and Finance
15	First Quality	7510 Industrial Hwy.	Macon	31216	(478) 784-2800	486	http://www.firstquality.com	Healthcare Products
16	Armstrong World Industries	4520 Broadway	Macon	31206	(478) 788-4811	454	http://www.armstrong.com	Ceiling Tiles

Source: MEDC, 2012; Inc Fast 500, www.inc.com

A. 4. Top Employers in the Central Georgia Region, 2011

Rank	Company	Mailing	City	Zip	Phone	FTEs	Website	Description
17	Birch Communications	4885 Riverside Dr.	Macon	31210	-	375	http://www.birch.com	Telecommunications
18	IKON Financial Solutions	1738 Bass Rd.	Macon	31210	(478) 474-1089	350	http://www.ikon.com	Sales, Service, and Finance
19	AT&T	4795 Riverside Dr.	Macon	31210	(478) 757-7900	302	http://www.att.com	Utility Company
20	Cherokee Brick & Tile Co.	1716 Forsyth St.	Macon	31201	(478) 742-6432	300	http://www.cherokeebrick.com	Brick
21	The Trane Company	125 Macon West Dr.	Macon	31210	(478) 743-5429	300	http://www.trane.com	Commercial Air Condition Systems
22	Timco	150 East Dr.	Macon	31216	(478) 784-9900	300	http://www.timco.aero	Aircraft Conversions, Aircraft Repair
23	Pactive Corp.	7670 Airport Dr.	Macon	31216	(478) 781-1474	212	http://www.pactiv.com	Molded Pulp Products
24	Battle Lumber Company	1001 Airport South Dr.	Macon	31216	(478) 781-0471	175	-	Unfinished Hardwood Flooring
25	Kamin	822 Huber Rd.	Macon	31217	(478) 745-4751	160	http://www.kaminllc.com	Kaolin Pigments, Clay Prods.
26	Reeves Construction Co.	101 Sheraton Crt.	Macon	31210	(478) 474-9092	160	http://www.reevescc.com	Asphalt Paving Compounds
27	Anderson Chemical Co.	1840 Waterville Rd.	Macon	31206	(478) 803-6103	158	-	Water Softeners, Chemicals & Equipment
28	Cherokee Brick & Tile Co.	3250 Waterville Rd.	Macon	31206	(478) 781-6800	150	http://www.cherokeebrick.com	Brick
29	Nichiha USA	3150 Avondale Mill Rd.	Macon	31216	(478) 238-9070	121	http://www.nichiha.com	Fiber Cement Products

Source: MEDC, 2012; Inc Fast 500, www.inc.com

A. 4. Top Employers in the Central Georgia Region, 2011

Rank	Company	Mailing	City	Zip	Phone	FTEs	Website	Description
30	Macon Garment Manufacturers, Inc.	675 Guy Paine Rd.	Macon	31206	(478) 784-9984	120	-	Work Shirts
31	Freudenberg Texbond	660 Allied Industrial Blvd.	Macon	31206	(478) 781-8088	115	http://www.freudenberg-texbond.com	Nonwoven Fabric
32	L.E. Schwartz & Sons, Inc.	279 Reid St.	Macon	31206	(478) 745-6563	105	http://www.leschwartz.com	Roofing, Sheet Metal Work
33	Crown Candy Corporation	4145 Mead Rd	Macon	31206	(478) 781-4911	100	http://www.crowncandy.com	Confectionery from Purchased Chocolate
34	Elliot Machine Shop, Inc.	5495 Level Acres Dr.	Macon	31217	(478) 745-0279	100	http://www.elliotms.com	Kaolin Industry Parts, Paper Industry Repairs
35	Diamond Plastics PVC	7614 Industrial Hwy.	Macon	31206	(478) 788-3300	90	http://dpcpipe.com	PVC Pipes
36	Plastican Inc.	101 Lillian Dr.	Macon	31217	(478) 746-8342	85	http://www.bwaycorp.com	Injection Mld. Shipping Centers Milk Crates

Source: MEDC, 2012; Inc Fast 500, www.inc.com

A. 5. Tax Incentives Available in the State of Georgia

Program Name	Description	Eligibility	Sponsoring Agency	Phone
Angel Investor Tax Credit	A tax credit for Angel Investors who invest in early stage or startup companies in Georgia.	Equal to 35% of investments made in 2011, 2012, 2013. There is a maximum credit of $50,000 per year.	Georgia Department of Economic Development	(404) 962-4000
Film, Television and Digital Entertainment Tax Credit	Film and television companies may receive a tax credit of up to 30 % of money spent on production and post-production in Georgia, either in a single production or on multiple projects. Minimum spending amount is $500,000.	A 20% credit is provided for companies that spend $500,000 or more on production and post-production in Georgia. An additional 10% credit is available if the finished product includes a promotional logo provided by the state. Sales and use tax exemptions can save as much as an additional 8 percent. The credit can be transferred or sold, if the company has little or no Georgia tax liability.	Georgia Department of Economic Development	(404) 962-4001
Georgia Minority Subcontractors Tax Incentive	A Georgia income tax adjustment for any company that subcontracts with a minority-owned firm to furnish goods, property or services to the State of Georgia. This includes, but is not restricted to, the construction of any building or structure for the State.	Available to minority owned businesses, partnerships with a majority ownership by members of a racial minority, or public corporations with a majority of common stock owned by minorities. Adjustment shall be limited to $100,000 per taxable year.	Governor's Small Business Center	(404) 656-6315
Investment Tax Credit	Companies in manufacturing or telecommunications support that have operated in Georgia for at least three years are eligible to earn investment tax credits for upgrades or expansions. Credit earned amounts to 1 percent to 8 percent of qualified capital investments of $50,000 or more.	Companies in manufacturing or telecommunications support that have operated in Georgia for at least three years are eligible. Credits are for 1% to 8% of qualified capital investments of $50,000 or more. The credit is calculated using two factors: geographic location (less prosperous counties receive larger credits), and type of investment (recycling equipment, pollution control, or converting defense manufacturing facilities to new products earn 3-8% of capital outlay; investments in general equipment for manufacturing or telecom services earn 1-5%). Credits can be used for up to 50% of Georgia corporate income tax liability and can be carried forward for 10 years. Cannot be claimed with the Job Tax Credit.	Georgia Department of Economic Development	(404) 962-4022
Job Tax Credit	A tax credit on Georgia income taxes for eligible businesses that create new jobs in counties or "less-developed" census tract areas.	$750 to $3,500 depending on county development ranking. Additional credits of $500 per job are available for locating in a joint development authority jurisdiction. Total tax credit limitations depending on development ranking. Credits can be carried forward 10 years.	Georgia Department of Community Affairs	(404) 679-4825

Source: Georgia Department of Community Affairs; Georgia Department of Economic Development

A. 5. Tax Incentives Available in the State of Georgia

Program Name	Description	Eligibility	Sponsoring Agency	Phone
Jobs Tax Credit	A credit of up to $4,000 per year (for up to five years) per job created (depending on the county or tract 'economic tier' ranking).	Credit depends on the 'economic tier' of the county/tract in which the job creator is located. Tier 1 has a credit of $3,500 (with an additional $500 for counties in a Joint Development Authority (JDA)), if two or more jobs are created. The Tier 2 credit is $2,500 ($3,000 with JDA), minimum 10 jobs. The Tier 3 credit is $1,250 ($1,750 with JDA), minimum 15 jobs. Moreover, the Tier 4 credit is $750 ($1,250 with JDA), minimum 25 jobs. Tiers 1 and 2 can be used to cover up to 100% of tax liability. Tiers 3 and 4 cover up to 50% of tax liability. Credits can be carried forward for 10 years.	Georgia Department of Economic Development	(404) 962-4000
Mega Project Tax Credit	Businesses that employ at least 1,800 "net new" employees and have a minimum annual payroll of $150 million or make a minimum $450 million investment in Georgia qualify for the mega project tax credit.	Mega Project Tax Credits are for companies that create a minimum 1,800 'net new' jobs and having minimum annual payroll of $150 million or who make a minimum $450 million investment in Georgia. The credit is for $5,250 per job per year for up to five years. The credit may be carried forward for 10 years.	Georgia Department of Economic Development	(404) 962-4001
Optional Investment Tax Credits	Optional Investment Tax Credits reward growing companies for making major investments in Georgia. The exact value of the optional investment tax credits depends on three factors: how much is invested, where the investment is made in Georgia, and the change in a company's tax liability.	The value of the credit depends on investment amounts and location, and the company's tax liability. Tier 1 locations must invest at least $5 million and receive a 10% credit; Tier 2 has a minimum investment of $10 million with an 8% credit; and Tiers 3 and 4 have a minimum investment of $20 million with a 6% credit.	Georgia Department of Economic Development	(404) 962-4001
Port Tax Credit Bonus	Georgia companies that increase imports or exports through a Georgia port by at least 10% can qualify for a bonus tax credit. Two options are offered: an addition of $1,250 to the job tax credit or an adjustment in the investment tax credit.	The port tax credit bonus (a bonus on either the Job Tax Credit or Investment Tax Credit) is awarded to companies that increase imports or exports through a Georgia port by at least 10% over the previous year. Companies must first meet the requirements of the job tax either credit or investment tax credit programs. The bonus to the Job Tax Credit is $1,250 per job per year for up to five years. The bonus to the Investment Tax Credit is an adjustment so that the credit is based on the equivalent of a Tier 1 location. The bonus may offset up to 50% of tax liability and can be carried forward for 10 years. This program CANNOT be used with the Quality Jobs Tax Credit program.	Georgia Department of Economic Development	(404) 962-4001

Source: Georgia Department of Community Affairs; Georgia Department of Economic Development

A. 5. Tax Incentives Available in the State of Georgia

Program Name	Description	Eligibility	Sponsoring Agency	Phone
Quality Jobs Tax Credit	Companies that create at least 50 jobs in a 12-month period - at wages that are at least 10% higher than the county average - qualify for a tax credit of $2,500 to $5,000 per job.	The Quality Jobs Tax Credit rewards companies that create at least 50 jobs in a 12-month period - provided the jobs pay wages that are at least 10% higher than the county average for wages. Jobs that are 110% to 120% of the Average County Wage (ACW) can receive a $2,500 credit. At 120% to 150% of ACW, the credit is $3,000. At 150% to 175% of ACW, the credit is $4,000. At 175% to 200% of ACW, the credit is $4,500. In addition, all jobs above that are above 200% of ACW can receive a $5,000 credit. Credits offset payroll withholding once all other tax liability has been exhausted. Credits may carry forward 10 years. There are time limitations (generally, less than one year) on applying for the credit.	Georgia Department of Economic Development	(404) 962-4001
R&D Tax Credit	Companies that increase qualified research spending may qualify for an R&D tax credit equal to a portion of that spending increase.	The credit is equal to 10% of R&D spending above a base amount. The base amount is the average over the preceding three years. The credit offsets up to 50% of net Georgia income tax liability, after all other credits have been applied. Credits can carry forward for 10 years.	Georgia Department of Economic Development	(404) 962-4001
Retraining Tax Credit	Georgia businesses may offset their investment in retraining employees to use new equipment or learn new skills through a retraining tax credit. The credit equals 50% of direct training expenses, up to $500 credit per full-time employee, per training program.	The credit covers up to 50% of direct training expenses with up to $500 per full-time employee per training program. The annual maximum is $1,250 per employee. This includes, costs of instructors and materials, employee wages during retraining, and reasonable travel expenses. The credit can be used for up to 50% of a company's corporate income tax liability, and carried forward for ten years.	Pam Griffin, Director of Corporate/Customized Training Operations with Georgia Quick Start	(404) 253-2871
Work Opportunity Tax Credit	Georgia's Department of Labor administers a federal tax credit to Georgia companies that hire individuals who have faced barriers to employment. The tax credit ranges from $1,200 to $9,000 per hire.	Work Opportunity Tax Credits are federal credits for companies that hire individuals who have "consistently faced significant barriers to employment." This includes recipients of TANF, veterans and people aged 18-39 who receive SNAP benefits, residents (aged 18-39) who live in Empowerment Zones or Rural Renewal Counties, disabled persons, ex-felons, and recipients of SSI benefits. Long-term TANF recipients count for a $9,000 credit, disabled veterans for $4,800, other adults from the above categories count for a $2,400 credit, summer youth hires count for $1,200.	Georgia Department of Labor	(404) 962-4001

Source: Georgia Department of Community Affairs; Georgia Department of Economic Development

A. 6. SBIR/STTR Awards Summary, 2007-2010

	2007		2008		2009		2010	
Region	Award Amount ($Mil)	Award Count	Award Amount ($Mil)	Award Count	Award Amount ($Mil)	Award Count	Award Amount ($Mil)	Award Count
Central Georgia Region	$0.4	1	$0.0	0	$0.0	0	$0.0	0
Atlanta MSA								
Remainder of Georgia	$2.2	9	$1.6	7	$1.9	9	$2.2	6

Note: Awards are adjusted for inflation to 2010 dollars
SBIR/STTR Awards totaled from the following government agencies: DHS, DOC, DOD, DOE, DOI, DOT, ED, EPA, HHS, HUD, NASA, NIH, NIST, NRC, NSF, and USDA;
Source: Small Business Administration Tech-Net; National Institute of Health

A. 7. SBIR/STTR Awards in the Central Georgia Region

Firm Name	City	County	Agency	Year	Award Amount ($)	Purpose
Southeastern Insectaries, Inc.	Perry	Houston	USDA	2007	$346,000	Mechanized in vivo Production of Entomopathogenic Nematodes: Expanding Biocontrol Utility

Source: Small Business Administration Tech-Net; National Institute of Health